

Second part .
THE BURIAL (I)
or the dress of the Emperor of China
 255

To those who were my friends
 to the few who have remained
 that many of those who came to choir my
 Funeral
 In memory of a memorable Symposium. . .
 and to the entire Congregation. . .
 257

258

13. A) HERITAGE AND HERITAGE

Contents

13.1. I Posthumous pupil.	260
13.1.1. Failure to teach (2) - or creation and fatuity.	260
Note 44.	260
13.1.2. A feeling of injustice and helplessness.	261
Note 44 "	
.	261
Note 45.	262
13.2. II Orphans.	262
13.2.1. My orphans.	262
Note 46.	262
Note 46 1	
.	267
46 Note 2.	268
Note 46 3	
.	268
46 Note 4.	269
Note 46 5.	269
Note 46 6.	270
Note 46 7.	270
46 Note 8.	270
46 Note 9.	270
13.2.2. Refusal of an inheritance - or price of a contradiction.	271
Note 47.	271
Note 47 1.	273
47 Note 2.	274
Note 47 3	
.	274
13.3. III Fashion - or the Life of Illustrious Men.	274
13.3.1. Instinct and fashion - or the law of the strongest.	274
Note 48.	274
48 Note 1.	276
48 Note 2.	276
13.3.2. The unknown service and the theorem of the good God.	276
Note 48	

.....	276
13.3.3. Canned weight and twelve years of secrecy.....	277
Note 49.....	277
13.3.4. You can not stop progress!.....	278
Note 50.....	278
259	

13. A) HERITAGE AND HERITAGE

13.1. I Posthumous student

13.1.1. Failure of a teaching (2) - or creation and fatuity

Note 44

[This note is called by section 50 of Chapter VIII of the **solitary adventure** part (I) and **Fatuité Renewal** p. 227]

0

This passage has "tilt" to the friend to whom I have caused this last section "The weight of the past" ¹ (*). he p. 173

wrote to me: "For many of your former students the appearance, as you say, the" boss "invading and at the limit destroyer remained strong. Hence the impression that you have. "(To know, I presume," the impression "which is expressed in . passages in this section and notes ° n s which complete 46,47,50) Highest he writes: "First I think you did well to leave mathematics for a moment [!], because there was a kind misunderstanding between you and your students (except of course Deligne). They stayed a little stunned. . .".

This is the first time I@e heard such bell sounds about my role as "boss" before 1970, going beyond the usual compliments! Higher still in the same letter: "... I understood that your alumni [read: those "pre-1970"] do not quite know what it is that mathematical **creation**, and maybe you had some responsibility. . . It is true that in their day the problems were all posed. . . "2 (**).

My correspondent wants to say without doubt that it is I who laid the "problems", and with them the notions that it was a question of developing, instead of leaving it to my pupils to find one and the other; and it is in this that I may have hidden from them the knowledge of what makes the essential part of the work of mathematical creation. It also joins a

0

impression that emerged from the conversation with two p. 174

of my former **students after** 1970 referred in an earlier note (note (23iv)). It is true that I looking primarily in students coming towards me, **collaborators** to develop intuitions and ideas that were already formed in me, to "push the wheels", in short, a cart that was already there, that they did not have to draw from a kind of nothing (as my correspondent had to do). It is there, however - to make a tangible and dense tangible out of the mists of the intangible - what has always been the most fascinating aspect of mathematical work for me and most of the work where I felt a "creation", the "birth" of something more delicate and essential than simple "result".

If I see sometimes such among those who were my students disdainfully treat this thing a great price, so spread in him this "snobbery" of which JHC Whitehead spoke (which consists in despising what one would show ") ³ (*), I did probably not abroad, in one way or another. The failure of my teaching, flagrant for the post-1970 period, appears to me now also, in a different and more hidden form, in my teaching of the first period, whereas in the conventional sense it is presented as a complete success! This is something that I have already seen at times in recent years, and that I mentioned in letters to many of my ex-students, without having so far really received an echo from none of them.

It seems to me that it would not be accurate to say that the work that I proposed to my students, and that they were doing with me, was purely technical work, pure routine, unfit to put into play their ¹ (*) (10 May) The friend in question is none other than Zoghman Mebkhout; who kindly allowed me to lift the anonymity that I had had to maintain the origin of the letter (of 2 April 1984) which I quote in the present note.

² (**) (10 May) The above quotation is highly truncated, for the sake of respect for the anonymity of my correspondent. See the following note for a complete quote from the passage from which this quote is extracted and for comments also on its true meaning, which had escaped me at first for want of more detailed information.

³ (*) See note "The snobbery of youth - or the defenders of purity", n ° 27 percent. 247. 260

creative faculties. I put at their disposal tangible and safe starting points, between which they had all latitude to choose, and from which they could start, as I had done before them. I do not believe that I have ever proposed a subject to a pupil whom I would not have liked to treat myself; or that there was such an arid journey in the journey that none of them did with me. that I myself did not alone by others as arid during my life as a mathematician, without discouraging or rushing into when it was clear that the work had to be done and that there was no other way.

0
Also I think the failure I see today is due to more subtle causes the p-type. 175
of themes that I proposed, and to what extent they remained unclear or were on the contrary sliced. My part in this failure seems to me rather due to attitudes of fatuity in me in my relationship to the mathematical; attitudes that I had occasion to examine in this reflection. These had to permeate more or less strongly, otherwise the actual work in the company of such student, at least the atmosphere or the air that surrounded my person. Fatuity, even as it expresses itself in the most "discreet" way of world, always going in the direction of a closing, an insensitivity to the delicate essence of things and to their beauty - that these are "mathematical things", or living things that we have power to welcome, to encourage, or also to look from the height of our greatness, insensitive to the breath that accompanies and to its destructive effects on others as on ourselves.

13.1.2. A sense of injustice and helplessness

Note 44 "

[The appearance of this note does not respect the chronological order of writing]
(May 10) Taking advantage of my friend's permission to freely quote passages from his letters that I would judge useful, I give here a more complete citation 4 (*), which is the truncated quote in context true:

"It is true that I was very isolated between 75-80 except for a few questions in Verdier. do not blame your alumni for that period because no one really understood the importance of this link [read: between discrete coefficients and continuous coefficients]. Everything changed in October 1980 when we discovered the first very important application of this link for semi-simple groups, namely the demonstration of the multiplicity formula of Kazhdan-Lusztig where the equivalence of categories in question has been used in an essential way. This equivalence taken the name of "Riemann-Hilbert correspondence" without further comment after all it is such naturally! This is where I realized that your alumni do not know very well what it is a mathematical **creation** and that maybe you had some responsibility. I still feel a feeling of injustice and helplessness. It is true that in their day the problems were all posed. The number of applications of this theorem is impressive both in the context of the topology spreads only in the transcendent frame but still under the name of correspondence Riemann-Hilbert! I feel that my name is unworthy of this result for

0

a lot of

p. 176

especially for your alumni. But as you can see clearly on the introductions my work is your formalism of "duality" that leads naturally to this result.

But like you I do not worry about the future of this link between "discrete coefficients constructible "and crystalline coefficients (or 3-holonomic modules) .It is clear that it applies in many fields both in the cohomology of spaces and in analysis. "

It is this passage from my friend's letter that inspired (in addition to this note) the subsequent note "The unknown

4 (*) See second note b. from p. from the previous note. "The failure of education (2) - or create and fatuous", ° No 44 ©

261

13. A) HERITAGE AND HERITAGE

of service and the theorem of the good God. "According to the terms of this letter, I had no suspicion I explain in his place) that this "feeling of injustice and helplessness" in my friend was the reaction, no simply blindly contemptuous attitude systematically **minimizing** contributions (attitude ended up becoming familiar to me, among some of those who were my students), but to a real scam operation, consisting simply **retract** the paternity of a theorem - key.

This situation was revealed to me just eight days ago - see on this subject the note "Iniquity - or the meaning a return "and the following notes (n ° s 75-80), united under the title" Symposium - or beam Mebkhout and Perversity ".

Note 45

By my change of environment and way of life, opportunities to meet or for others contacts with my old friends, have become rare. This did not prevent only signs of "taking distance "manifest themselves in many ways, more or less strong from one to another, while others like Dieudonné, Cartan or Schwartz, and in fact among all the "seniors" who had made me so welcome to my

I did not feel anything like that. Apart from these, I have the impression, however, that few among my old friends or students in the mathematical world, whose relationship to me (whether she finds it or not opportunity to express oneself) did not become divided, "ambivalent," after I withdrew from what was a middle, a common world.

13.2. II Orphans

13.2.1. My orphans

Note 46 [This note is called by section 50 of Chapter VIII of the **solitary adventure** part (I) and **Fatuité Renewal** p.]

0

I would like to take this opportunity to say a few words here about mathematical notions and ideas, p. 177

among all those I have learned in the day, which seem to me (by far) have the greatest reach (46 1) 5 (*). These are primarily five closely related key concepts, which I will review briefly, in order of specificity and increasing wealth (and depth).

This is primarily the idea of **derived category** in homological algebra (see note 48 p. 274), and its use for a "boilerplate" formalism. says "**formalism six operations**" (ie transactions

The

$\otimes, Lf^*, Rf^*, Rf_*$ (46 2) for the cohomology of types of "spaces" the most important that have been introduced so far in geometry: "algebraic" spaces (such as diagrams, schematic multiplicities, ticks, etc. . .), analytic spaces (both analytically complex and rigid-analytic and assimilated), spaces topological (in the meantime, of course, the context of "moderate spaces" of all kinds, and surely others, such as that of the category (Cat) of small categories, serving as homotopic models. . .). This formalism includes both the coefficients of discrete nature and the "continuous" coefficients. The progressive discovery of this formalism of duality and its ubiquity was made by reflection lonely, obstinate and demanding, which continued between the years 1956 and 1963. It is during this the concept of a derived category, and an understanding of the role it came back to him in homological algebra.

5 (*) This is discussed in notes 1 to 46 \circ 46 9 some more technical comments on the reviewed concepts in this note. Moreover, regardless of the specific **concepts** that I introduced, the reader will find reflections about what is considered the "master part" of my work (inside the part of my work "entirely the term ") in note 88 \circ "The body".

262

13.2. II Orphans

What was still missing in my vision of the cohomological formalism of "spaces" was an understanding of the link between discrete coefficients and continuous coefficients, beyond the familiar case of local systems and

0

their interpretation in terms of modules integrable connection or mo- p crystals. 178

dules. This deep connection, formulated first in the context of complex analytic spaces, has been discovered and established (almost twenty years later) by Zoghman Mebkhout, in terms of derived categories formed of a on the basis of discrete coefficients "constructible", on the other hand using the concept of "3-Module" or "Complex differential operators" (see Note 46 3 p.).

For almost ten years, for lack of encouragement from those of my former students who were the best to give it to him, and to support him by their interest and the experience they had acquired in my contact, Zoghman Mebkhout continued his remarkable work in almost total isolation. it

do not stop to take the day and prove theorems 6-key (*) to a new crystalline theory

being born chugging in the general indifference, both of them besides (it marked badly decided- in terms of derived categories: one giving the equivalence of categories

between "discrete constructible" coefficients and crystalline coefficients (satisfying certain conditions of lonomie "and" regularity ") (48 \otimes the other being **the** crystalline aggregate duality theorem, for the purposes constant of a complex analytic space smooth (not necessarily compact, which implies difficulties considerable additional techniques) to a point. These are deep theorems 7 (**), which shed a new day

0

calf on the cohomology of both analytical and schematic areas (zero characteristic p. 179

for the moment), and carry the promise of a wide-ranging renewal of cohomology theory

of these spaces. They finally earned their author, after refusing two applications for entry to the CNRS, a position of research officer (equivalent to a post of assistant or assistant professor at the University).

No one in those ten years has thought of talking to Mebkhout, struggling with technical difficulties

considerable due to the transcendent context; of "formalism of the six variances", well known to my students 8 (*) but which does not appear "in the net" anywhere. He finally learned about it from my mouth last year (under

form of a form that, apparently, is known only to me alone. . .), when he had the kindness and the patience to explain to me what he had done; to me who was no longer so connected to cohomology ... Nobody either thought of suggesting that it might be more "profitable" to connect first. on the context of the schemas in characteristic zero; where the difficulties inherent in the transcendent context disappear, and where, on the other hand, the conceptual questions fundamental to the theory appear all the more clearly. Nobody thought of telling him (or only saw what was known to me from the time where I introduced crystals ρ (**)) that "3-Modules" on spaces (analytical or schematic)

6 (*) (7 June) Mebkhout tells me that these two theorems, it is appropriate to add a third, also speaking in Under derived categories, namely what he called (somewhat inaccurately perhaps) the "**bidualité theorem**" for 3-Modules, and that is the most difficult of the three. For an overall sketch of the ideas and results of Mebkhout and their uses, see Dung Trang and Zoghman Mebkhout, Introduction to linear differential Systems, Proc. of Symposia in Pure Mathematics, vol.40 (1983) part.2, p. 31-63.

7 (**) (30 May) The proof of the second theorem faces the usual technical difficulties transcendent context requiring the use of "evetic" techniques, I guess it can be ranked among the "difficult" demonstrations. That of the first theorem is "obvious" - and profound, using all the strength of the resolution of Hironaka's singularities. As I pointed out in the penultimate paragraph of the note "solidarity" (No. 85 \circ) once cleared theorem "first come" knowledgeable is able to prove it. Compare also with the observation of JHC Whitehead quoted in the note "Snobbery young - or defenders of purity" (n \circ 27) When I wrote this last note, as dictated by the silent one. My secret prescience, I did not suspect how far reality would exceed my timid and groping suggestions!

8 (*) They learned firsthand in seminars SGA SGA 4 and 5, and inserted texts in "Residues and Duality" from R. Hartshorne.

9 (**) (30 May) But I had time to forget - for me resouvenir by virtue of the second meeting with Mebkhout year latest. (See note "Dating from the grave", n \circ 78.

263

13. A) HERITAGE AND HERITAGE

smooth are neither more nor less than the "**crystal module**" (when we disregard any question of "coherence" for both), and that the latter was a catch-all concept that worked all for both "spaces" in any singularities for smooth spaces (46 \downarrow).

Given the means (and unusual courage) that Mebkhout has shown, it is clear to me that, placed in an atmosphere of sympathy, he would have had no harm but great pleasure to establish the complete formalism of the "six variances" in the context of the crystalline cohomology of patterns of zero characteristic, then that all the essential ideas for such a large program (including his own in addition to those of the school of Sato and mine) were already, it seems to me, reunited. For someone of his caliber, it was question of a few years' work, just as the development of a forum

boilerplate malism of
p. 180

cohomology was discussed for a few years (1962-1965), as long as the common thread of the six operations was already known (in addition to the two basic key-change theorems). It is true that it was years carried by a current of enthusiasm and sympathy from those who were its co-witnesses or witnesses, and not a work counter to the haughty sufficiency of those who have everything in their hands. . .

I turn to the second pair of concepts I wanted to talk, the **scheme**, and the closely related to **topos**. The latter is the most intrinsic concept version of the **site**, which I had first introduced to formalize the topological intuition of a "localization". (The term "site" has been introduced later by Jean Giraud, who did a lot to give the notions of site and topos all the necessary flexibility.) These are blatant needs of algebraic geometry that led me to introduce one after the other schemas and topos. This pair of concepts contains a potentially vast renewal of vergure both algebraic geometry and arithmetic, as topology, by a **synthetic** these "worlds", too long separated, in a common geometric intuition.

The renewal of algebraic geometry and arithmetic from the point of view of schemas and the language of sites (or "descent"), and by twelve years of groundwork at the key (without counting the the work of my students and other good wills who have been part of it) has been accomplished since twenty years: the notion of schema, and that of cohomology spreads schemas (otherwise that of topos étale et that of multiplicity étale) have finally entered the mores, and in the common heritage.

On the other hand, this vast synthesis which would also include topology, whereas for twenty years the ideas essential and key technical tools required me seem united and ready ¹⁰ (*), still awaiting hour. during

fifteen years (since my departure from the mathematical scene), the unifying and fruitful idea
p. 181

powerful tool to discover what the notion of topos, is held by some ¹¹ mode (*) of the ban

notions deemed serious. Few still today are the topologists who have the slightest suspicion of this potential broadening of their science, and the new resources it offers.

In this renewed vision, topological spaces, differentiable etc. . . that the topologist handles are, with the schemas (of which he has heard) and the topological multiplicities, differentiable 10 (*) (May 15) These "essential ideas and key technical means" were gathered in the vast fresco of SGA seminars 4 and SGA 5, between 1963 and 1965. The strange vicissitudes that struck the writing and publication of the SGA part 5 of this fresco, published (in unrecognizable form, devastated) eleven years later (in 1977), give a striking image of the fate of this vast vision in the hands of "some fashion" - or rather, in the hands of some of my students who were first to introduce it (see note from next page). These vicissitudes and their meaning are gradually revealed during the reflection last four weeks, continuing in the notes "The fellow", "The clean slate", "The being apart". "The signal", "The reversal", "Silence", "Solidarity", "The mystification", "The deceased", "The Massacre", "The body", notes 63 67, 67 68, 68 and 84-88.

11 (13 May) further reflection during the six weeks following the time these lines were written (end of March), has shows that this "fashion" was first introduced by some of my students - by the very people who were best positioned to make their vision a reality, and ideas and technical means, and who have chosen to appropriate instruments of work, while disavowing and the vision that gave rise to them, and the one in whom this vision had originated. 264

13.2. II Orphans

or schematic (nobody talks) so many incarnations of the same type of geometric objects remarkable, **ringed topos** (46 5), which play the role of "space" in which intuitions are confluent from topology, algebraic geometry, and arithmetic, into a geometric mine. The multiplicities "modular" of all kinds that we meet with each step (if we have eyes open to see) to provide as many striking examples (46 6). Their in-depth study is a thread first-rate driver to penetrate further into the essential properties of geometric objects (or other, if it is objects that are not geometric ...) whose modular multiplicities describe the modes of variation, degeneracy and generalising. This wealth, however, remains unknown, since The notion of finely describing it does not fall into the categories commonly accepted. Another unexpected appearance provided by this synthesis challenged 12 (**), is that 0

the homotopy invariants p. 182

familiar to some of the most common areas (46 7) (or more precisely, their compactifications profinities) are equipped with unsuspected arithmetic structures, including some groups of Galois profinis. . .

Yet, for almost fifteen years now, it's part of the right tone in the "big world", to look at anyone who dares to pronounce the word "topos", unless it is joking or not the excuse of being a logician. (These are people known to be unlike others and to be forgiven some fads. . .) Yoga derived categories, to express the homology and cohomology of spaces have not penetrated among the topologists, for whom the formula of Künneth (for a ring of coefficients that is not a body) always continues to be a system of two spectral sequences (or at most a string of short exact sequences), and not a single canonical isomorphism in a suitable category; and still continue to ignore the basic change theorems (for a morphism or by a smooth morphism for example), which (in the framework of cohomology spreads) were the turning point for the "startup" in strength of this cohomology (see note 46 8 p. 270).

I do not have to be surprised, when those who had contributed to developing this yoga have forgotten since a very long time ago ; and beat cold the unfortunate who would mine, he, want to use it! 13 (*).

The fifth concept dear to my heart, more than any other perhaps, is that of "**reason**". She is distinguishes the previous four in this, that "**the**" good concept of reason (be it only above a basic body, not to mention any basic scheme) has not so far been the subject of a satisfactory definition, even allowing for this purpose all the "reasonable" conjectures need. Or rather, visibly,

0

"reasonable guess" at how, in a first step would be that of p. 183

e **xistence** a theory satisfying such data and such properties, it is in no way difficult

12 (**) (13 May) This summary has been "challenged" in the first place, in his mind as the key concept that makes it possible, by none other than the one who was the main user and beneficiary, throughout his work, technical means that it allowed me to develop (with the language of schemas and the construction of a theory of étale cohomology). It is Pierre Deligne. By his exceptional ascendancy (due to his exceptional means), and by the very particular position he held vis-à-vis my work of which he was like an implied legatee, the discrete and systematic barrier that he opposed to ideas the main ones I had introduced (with the exception of the notion of schema and étale cohomology) was very effective, surely play a leading role in establishing the "fashion" who **buried** these ideas, already reduced for nearly fifteen years to a vegetative life. His work has been profoundly marked by this ambiguity, which I have interviewed for the first

time.

times in the reflection which continues that of this note. (See "Refusal of an inheritance - or the price of a contradiction", note n ° 47 p. 271) This first perception, lively but still confused, of this permanent obstruction in Deligne's work after my departure, was clarified and confirmed in a striking way during all the reflection on this Burial, where my friend plays the role of principal officiant.

13 (*) (13 May) It emerged during the subsequent reflection that the situation began to change with the Symposium Luminy of June 1981: we saw those who had "forgotten" (or rather, buried ...) these notions strutting with, without stopping to beat cold that same "unhappy" without which this brilliant Symposium would never have taken place. (See notes n ° s 75 and 81 on

this memorable Symposium.)

265

13. A) HERITAGE AND HERITAGE

(and quite fascinating!) to someone in the shot 14 (*), to explain fully. I've been to two fingers to do it, shortly before the moment I "left the maths".

In some ways, the situation resembles that of the "infinitely small" in the heroic age of differential and integral, with two differences, however. First of all, we now have an experience in building sophisticated mathematical theories, and an effective conceptual background, which were missing from our predecessors. And then, despite these means we have and for more than twenty years As this visibly essential notion has emerged, no one has deigned (or dared in spite of those who do not deign ...) get your hands dirty and identify the main features of a theory of motives, such as our predecessors had done it for the infinitesimal calculus without going four ways. Yet it is as clear now for the reasons that it was once for the "infinitely small", that these beasts exist, and that they at each step in algebraic geometry, if we are interested in the cohomology of algebraic properties and families of such varieties, and more particularly to the "arithmetic" properties of them. Even more so than for the other four notions I mentioned, that of motive, which is the more specific and richest of all, is associated with a multitude of intuitions of all kinds, in no way waves but for

0

calculables often with perfect precision (sometimes leaves, if necessary, to admit some

p. 184

motivic premises). The most fascinating of these "motivational" intuitions was for me that of "group of Motivational Galois" which, in a sense, makes it possible to "put a motivational structure" on the Galois groups finite bodies and schemas of finite type (in the absolute sense). (The technical work required to give a precise meaning to this concept in terms of "premises" giving a provisional basis of the concept of reason, has been accomplished in the thesis of Neantro Saavedra on "tannakiennes categories.")

The current consensus is slightly more nuanced to the notion of reason for his three brothers (or sisters) misfortune (derived categories, duality formalism said "six operations", topos), in that it not outright treated "bombinage" 15 (*). Practically, it is the same, however: the moment there is no way to "set" a pattern and to "prove" something, serious people only refrain from talking (with the greatest regret is a done thing, but it is serious or you do is not. . .). Certainly, there is no risk of ever happen to construct a theory of motives and to "prove" anything it is about them, as long as it says it is not serious even talk!

But the few people in the know (and who make fashion) know very well, them, in terms of premises, which remain secret, we can prove a lot. This means that today, in fact since the concept came in the wake of the Weil conjectures (yet proved by Deligne, which makes when even a good point!), the **yoga patterns** does exist. But he status of a **secret science**, with Although very little insider 16 (**). He may be "not serious", it nevertheless allows

0

these rare insiders say

p. 185

in a host of situations cohomology "what we are entitled to expect." It gives rise to well

14 (*) (13 May) I have come to understand that the only person (besides me) who until today to respond rather special meaning This "so slightly in the coup" is Pierre Deligne, who had the advantage for four years while he listened to "the little I knew in algebraic geometry", being the confidant daily motivic of my thoughts. It is true that I talked about these things with many other colleagues here and there, but none apparently was enough "connected" to assimilate

overall vision that had developed in me over many years, or to take my directions as a point

starting to develop itself a vision and a program (like myself had done from two or three

"Strong impressions" produced by certain ideas of Serre). Maybe I'm wrong, but it seems that people interested the cohomology of algebraic varieties were not available to psychological "reasons take seriously" as

long as Deligne, who was cohomology authority and at the same time was the only one supposed to know fully what it

returned with these reasons, the passing himself in silence.

(June 8) Verification made it appears that my first motivic ideas back to the beginnings of the sixties - They are therefore continued over almost a decade.

15 (*) As I noted in a previous footnote, derived categories were treated there three years in an exhumation big bands (without my name will be pronounced). The topos and six operations still biding their time, and reasons
266

13.2. II Orphans

a multitude of intuitions and partial conjectures, which sometimes are accessible afterwards by means the edge, in the light of understanding that provides the "yoga". Several works are inspired Deligne This yoga 17 (*), including one that (if I am not mistaken) was his first published work, establishing the degeneration of the Leray spectral sequence for a smooth projective morphism of algebraic varieties (in because. zero, for the demonstration purposes). This result was suggested by considerations of "weight" So kind of arithmetic. These are considerations typically "motivic" I mean: formulable in terms of the "shape" patterns. Deligne proved this statement to Lefschetz-Hodge theory and strokes (If I remember correctly) not a word of motivation (49) without which yet nobody would certainly idea had to suspect something so incredible!

Yoga memorandum was born elsewhere precisely, first of all, that "Yoga Weight" I wanted Serre 18 (**). It was he who made me understand the charm of the "Weil conjectures" (now "Deligne theorem"). He explained to me how (modulo an assumption of resolution of singularities in the proposed feature) could, through yoga weights associated with each algebraic variety (Not necessarily smooth or clean) over an arbitrary field of "number of virtual Betti" - something that had so much struck me (46 9). It is this idea I think that was the starting point for my reflections on weight, which continued (in the margins of my fundamentals of writing tasks) throughout the following years. (It also that I have taken in the 70s, with the concept of "virtual ground" on a ba scheme

0

if any, to establish a formalism of "six operations" at least for the reasons p. 186 virtual.) If throughout these years I talked about this yoga patterned Deligne (making figure interlocutor privileged) and who would listen 19 (*). It certainly was not for him and others to keep the state a secret science alone reserved. (⇒note 47 p. 271)

Score 46 1

I exception at most of the ideas and perspectives brought to the formulation

I had given the Riemann-Roch theorem (and the two demonstrations that I have found), and as various variants of it. If my memory is correct, such variants were in the last presentation of the seminar SGA 5 of 1965/66, which was lost with all hands with various other presentations of same seminar. The most interesting seems to be a variant of constructible discrete coefficients also, except the small piece that was unearthed there two years ago, with a spare paternity (see notes n ° s 51, 52, 59). (May 13)

16 (**) (13 May) I now understand that "very few insiders" was reduced to 1982 in single Deligne.

True, he revealed that "secret science" that shines through some important results included in this yoga, revealed gradually as he was able to prove, to collect credit while hiding his source of inspiration, which remained secret. If, however, for fifteen years nobody has responded yet to finally branching on a theory of large scale patterns is that our time is decidedly far from the bold vibrancy of the heroic era of computing infinitesimal!

17 (*) (13 May) Having finally take notice of the bibliography so slightly. I now see that the whole work of Deligne is rooted in this yoga. And my bibliographic sampling (as well as other cross-checking) make me assume in that the entire work Deligne, the only reference to the source is in a lapidary line (quoting me in a breath with Serre) in "Theory Hodge I" in 1970. (See Notes n ° s 78 1 and 78 2.)

18 (**) What I want Serre (early 60s?) Is an idea or initial intuition, making me understand that there something important to understand! This has acted as an initial pulse, triggering a reflection that has followed in later years, first on a "yoga" of weight and soon a larger yoga reasons

19 (*) (April 10) I think Deligne was the only one to "hear" - and he took care to reserve the exclusive privilege it heard. It is true on the other that in writing these final lines, I "retardais" on the events: there are two years, there has been partial exhumation yoga reasons without any reference to a role that I would have done! On this subject the notes n ° s 50, 51, 59, prompted by an unexpected discovery that threw an unexpected light (for me at least) on the meaning of the burial which was held for twelve years. Until then I had realized quite confused with a kind of burial, without taking the leisure to go closer. . .

267

13.) HERITAGE AND HEIR

I know if it was explained in the literature from 20 (**). Note that this one also admits variant "Motivic", which essentially amounts to saying that the "characteristic classes" (in ring Chow a regular pattern Y) associated with Building χ -adic beams for primes different χ (first to residual features) where the beams come from the same "word "pattern" (eg are $R_i f_! (Z_\chi)$ for a $f: X \rightarrow Y$ given) are all equal.

Score 46 2

We can consider this formalism as a sort of quintessence of a formalism of " **duality overall** "in cohomology; form in its most" efficient ", freed from all unnecessary assumptions (of smoothness especially for "spaces" and planned applications, or cleanliness for the morphisms@t should complete the formality by a **local duality** in which we distinguish among the "coefficients" admitted "complex" objects or

0

called " **dualisants** " (stable concept by Lf operation ! "), ie those giving rise to a

p. 187

" **Bidualité theorem** " (in terms of the Rohm operation) for coefficients satisfying conditions suitable finite (on the stairs, and consistency or "buildability" on objects cohomology local). When I speak of "formalism of the six variances"; I implying subsequently complete this formality duality, both in its "local" aspects "global".

A first step towards a deeper understanding of duality in cohomology was the discovery

Progressive formalism of the six variances in a first important case, that of Noetherian schemes and complexes with coherent cohomology modules. A second was the discovery (in the context of the étale schemes) that formalism also applied to discrete coefficients. These

two extreme cases were sufficient to establish the conviction of the u **biquité** of this formalism in all geometric situations giving rise to a "duality" of the Poincaré kind - conviction was upheld by the work (among others) Verdier, Ramis and Ruget. It will certainly be confirmed for other types coefficients, when the **lock** which for fifteen years has worked against the development of a Using large this formalism will be eroded.

This ubiquity seems a **fact** of considerable significance. He made it imperative that feeling of unity deep between Poincaré duality and duality of Serre; which was eventually established with the generality required by Mebkhout. This ubiquity makes "formalism of the six variances" one of the fundamental structures in algebra homology to an understanding of cohomological duality phenomena "all azimuths" 21 (*). The that this sort of fairly sophisticated structure was not made explicit in the past (nor indeed that the "proper" term "triangulated category" whose Verdier version is still a provisional form and insufficient) changes nothing; nor that topologists and even algebraic geometers who pretend to be interested in cohomology continue vied to ignore the very existence of formalism duality, as the language of derived categories based on.

Note 46 3

The view of the 3-Modules and complex differential operators was introduced by Sato and first developed by him and his school, a op

0

tick (it seemed to understand) rather different

p. 188

from that followed by Mebkhout closer to my approach.

The various concepts of " **constructability** " to "discrete" coefficients (in contexts analytically complex, real-analytic, piecewise linear) were identified for the first time by me, I think, the late fifties (and I have times a few years later in the context of cohomology spreads). I asked then to the stability of this concept by direct images above for

20 (**) (June 6) I found it (in a similar form, and under the flattering name of "conjecture of Deligne-Grothendieck") in a McPherson article published in 1974. See for details footnote ° 87 1 .

21 (*) The interested reader will find a sketch of this formalism in Appendix to this volume.

268

13.2. II Orphans

a proper map of real or complex analytic spaces, and is not known whether this stability has been established in the complex analytic case 22 (*). In the real analytic case, the notion that I had planned was also not good, because it lacks the notion of actual set subanalytic Hironaka, who has pro-essential preliminary stability by direct images priété. As for the local nature of operations as Rohm, it was clear that the argument that established stability coefficients buildable within the excellent circuit characteristic zero (using the resolution of singularities of Hironaka) walked as such in the complex analytic case, and likewise for the bidualité theorem (see SGA 5 I). In the linear piecewise frame, natural stability and bidualité theorem are "easy exercises"

I had enjoyed doing for verification of "ubiquity" of duality formalism upon starting the étale (one main surprise was just discovering this ubiquity).

To return to the semi-analytic case, the "good" part in this direction for theorems stabilized (constructible coefficients by six operations) is clearly one of "moderate areas" (see Sketch of a Program by. 5, 6).

Score 46 4

Of course, the point of view 3-modules, coupled with the fact that 3 is a coherent sheaf of rings, highlights for modules crystals a notion of "consistency" more hidden than that with which I used to work, and keeps a sense of space (analytical or schematic) not necessarily surely smooth. It would only be fair to call it " **M-consistency** " (M as Mebkhout). It should be fairly clearly therefore, for someone so little in it (and in full possession of his healthy instinct mathematician) that the "right category coefficients" that generalizes the complex

0

"differential operators" p. 189

in the smooth, must be other than derived category "M-coherent" in that crystals of modules (a complex of crystals being called **M-coherent** if its objects cohomology are). It keeps a reasonable sense without assuming smoothness, and should include both theory coefficients "continuous" (Coherent) ordinary, and the discrete coefficients "Plot" (by introducing for them Suitable Holonomy of assumptions and regularity). If my view is correct, both new conceptual ingredients of the theory of Sato-Mebkhout compared to known crystalline context above are the concept of M-consistency for crystal modules, and Holonomy Information and regularity (deepest nature) on M-coherent complex crystals. These notions are acquired an essential first task would be to develop the formalism of the six variances in the context crystalline, to encompass both special cases (usually coherent, discrete) I had developed it has over twenty years (and some of my former students cohomologists long forgotten in favor tasks may be larger. . .).

Mebkhout was also well ended up learning the existence of a concept of "crystal" attending my writings, and he felt that his view was to give a good approach to this concept (at least in characteristic zero) - but this suggestion fell on deaf ears. Psychologically it was hardly thinkable he embarks on the vast task of foundation that is needed, as it was placed in a climate of indifference haughty from the very people who were authority figure cohomological, and the best position to encourage - or discourage. . .

Note 46 5

(May 13) This is especially topos ringed by a ring **local commutative** . The idea of describing a structure of "variety" in terms of the data of such a beam of rings on a topological space, a 22 (*) (25 May) It was established by JL Verdier, see "good references" footnote ° 82.
269

13.) HERITAGE AND HEIR

was first introduced by H. Cartan, and was taken over by Serre in his classic work FAC (Beams algebraic consistent). It is this work which was the initial impetus for reflection to lead me concept of "scheme". What was missing in the approach taken by Cartan Serre, to encompass all types of "spaces" or "varieties" that have arisen to date, it is the notion of topos (that is to say, just "something" on which the concept of "beam assemblies" have meaning, and has the properties familiar).

Note 46 6

0

Like other outstanding examples of topos not ordinary spaces and les
p. 190

What he does not seem to be either satisfactory substitute in terms of the concepts "admitted," I point out: topo quotients of a topological space by a local equivalence relation (e.g., laminations varieties, in which case the quotient topos is even a "multiplicity" ie is locally a variety); topos "Classifying" for just about any kind of mathematical structure (at least those "are precedence in terms of finite projective limits and any inductive limits "). When you take a structure "variety" (topological, differentiable, real or complex analytic, Nash, etc ... or even schematic smooth on a given base) there is in each case a particularly attractive topos which deserves the name of "universal variety" (the intended species). Its homotopy invariants (including its cohomology, which deserves the name of "cohomology classifying map" for the species considered range) should be studied and known for a long time, but for now it does not take the path. . .

Note 46 7

These are X spaces the homotopy type is described "naturally" like

a complex algebraic variety. This can then define a subfield K of the body complex, such that K is a finitely generated extension of the first body Q . The Galois group profinite $\text{Gal}(K/Q)$ operates then naturally on the homotopic profinite invariants X . Often (e.g. when X is a sphere homotopic odd dimension) can be taken to the K first body Q .

Score 46 ⁸

(May 13) When I learned my first rudiments of algebraic geometry in the article FCC Serre (which suited me "trigger" towards schemes), the concept of change base was virtually unknown in algebraic geometry, except in the special case of change base body. With the introduction of schemes language, this operation has become arguably the most commonly used in algebraic geometry, where she introduced at any time. The fact that this operation remains virtually unknown topology, except in very special cases, strikes me as a typical sign (among many others) the isolation of the topology from the ideas and techniques from algebraic geometry, and a tenacious legacy of inadequate foundations of topology "geometric".

Note 46 ⁹

0
(June 5) The idea was that Serre was able to associate with any scheme X of finite type over a p. 191

body K , whole

$h_i(X)$ ($i \in \mathbb{N}$)

he called his "virtual Betti numbers", so that we have:

a) for Y a closed subscheme and the complementary open U

$h_i(X) = h_i(Y) + h_j(U)$

270

13.2. II Orphans

b) for X smooth projective was

$h_i(X) = i$ -ème Betti number de X

(Defined for example through the χ -adic cohomology for χ prime to the characteristic of k). If we accept resolution of singularities for algebraic schemes over k , then it is immediate that $h_i(X)$ are only determined by these properties. E **xistence** such a function $X \rightarrow (h_i(X))_{i \in \mathbb{N}}$ set, using the formalism of cohomology clean carrier can be reduced substantially if where the base body is finished. Working in the "Grothendieck group" vector of dimension finite Q_χ in which $\text{Gal}(k$

k

) Operates continuously, and taking the characteristic of Euler-Poincare χ -adic (to clean surface) of X in this group, $h_i(X)$ designates the virtual row of "component weight i "EP (X, Q_χ) , where the notion of weight is that deduced from Weil conjectures, plus weak form of resolution of singularities. Even without resolution, the idea of Serre is realized thanks to the strong form of Weil conjectures (established by Deligne in "Weil conjectures II").

I continued heuristic thoughts on this path, leading me to a formalism of six operations for "virtual related patterns", the base body k is replaced by a basic diagram roughly S one - and to various concepts of "characteristic classes" for such virtual designs (from présentation finished) on S . So, I was led (returning to simplify the case of a basic body) to consider complete digital invariants finer than Serre, denoted $h_{p,q}(X)$, satisfying the analogous properties to a), b) above, and restoring the virtual Betti numbers Serre by the usual formula

$h_i(X) = \sum$

$p + q = i$

$h_{p,q}(X)$

13.2.2. Refusal of an inheritance - or the price of a contradiction

Note 47 [This note is a direct continuation of the note p.13.2.1 46]

0

Note that four of the five concepts I have to review (those just passing p. 192 to things "not serious") relate cohomology, and foremost, **diagrams and cohomology algebraic varieties**. In any case, all four were suggested to me by the needs of a theory cohomologique algebraic varieties for continuous coefficients first, then discrete. This means that a main motivation and a constant leitmotif in my work during the fifteen years from 1955 to 1970, was the cohomology of algebraic varieties.

Remarkably, this is the theme that also Deligne still considers its primary inspiration, if I believe what is said about it in the brochure of the IHES of last year ²³ (*).

I have read of it with some surprise. Admittedly, I was still "on the scene" and all there plugged when Deligne (after good work on the conjecture Ramanuyam) has developed its remarkable extension of Hodge theory. This was especially for him as for me, a first

step towards building shaped the concept of pattern on the body of the complex - to start! In the first years after my "turning point" in 1970, I had of course also echo the demonstration by Deligne Weil conjectures (which also proved the conjecture Ramanuyam), and as a result, the "theorem Lefschetz cow "in positive characteristic. I expected no less of him! I was sure he had even 23 (*) (May 12) For cons, I just noticed that nothing in the brochure might make the reader suspect that my work has anything to do with the cohomology of algebraic varieties, or of anything else! On this subject the note "In Praise of Death (1) - or compliments" (n ° 98) written today. The brochure in question is the one mentioned in the footnote on page note "The salutary pull", n ° 42, and examined a little closer in the note "In Praise Funeral "just mentioned.

271

13.) HERITAGE AND HEIR

have proved the same time the " **standard conjectures** ", which I had proposed in the late sixties as a first step to establish (at least) the concept of design "semi-simple" on a body, and for translate some of the planned properties of these units in terms of χ -adic cohomology properties and cycles algebraic groups. Deligne told me later that his proof of the Weil conjectures surely would not demonstrate the standard conjecture (strongest), and he was there any idea how to approach them. There must be this a decade now. Since then, I have no knowledge of other really decisive progress that would have occurred in the understanding of aces

0

pects

p. 193

"Motivic" (or "arithmetic") of the cohomology of algebraic varieties. Knowing how to Deligne, I concluded tacitly that his main interest had had to turn to other subjects - hence my surprise to read that it was not.

What seems beyond doubt is that for many twenty years it is hardly possible to work wide-scale renewal in our understanding of the cohomology of algebraic varieties without also do more or less figure of "successor Grothendieck". Zoghman Mebkhout has also learned something at his expense, and (to some extent) it was the same Carlos Contou-Carrère, who quickly understood he had every reason to change the subject (47 1). Among the first things that we can not provide doing there precisely the development of the famous "formalism of the six variances" in contexts various coefficients as close as possible to that of the units (which play the currently as a sort of "skyline" ideal): crystalline coefficients characteristic zero (in line with Sato school and Mebkhout Grothendieck sauce) or p (especially studied by Berthelot, Katz, and a whole Messing younger group of visibly motivated researchers), "laminates promodules" on Deligne (which appear as a dualized Alternatively, or "pro", the "ind" -Notion coherent three-module, or crystal three-coherent \mathbb{Q} coefficients "Hodge-Deligne" finally (which seem as good as the reasons, except that their definition is transcendent and limited to basic patterns that are of finite type over the field of complex). . . To the other end comes the task of clearing the concept of pattern mists that surround (and for good reason...) and also, if possible, to tackle questions as accurate as the "standard conjectures". (For these last, I thought, among others, to develop a theory of "intermediate Jacobian" for projective and smooth varieties on a body, as a means may obtain the positivity of formula traces, which was an essential ingredient of the standard conjecture.)

These were tasks and questions that were burning my hands until I@e yet

"Left the math" - burning things and juicy, none and at no time appeared to me as forming a "wall", a breakpoint 24 (*). They were a source of inspiration and a sub

0

stance inépu-

p. 194

sands something where you had to shoot where it was over (and it "exceeded" everywhere!) for some thing vienna, as expected the unexpected. With the limited resources that are mine, but not divided in my work, I know all that we can do little we put it in one day or one year, or ten. And I know, having seen him at work at a time when he was not divided in his work, which Deligne are the means, and what it can do in a day, in a week or in a month, when he wants to get on with it. But no one, Deligne, can eventually make fruitful work, the work of renewal deep while looking down the same objects it comes right down to sound and language and all an arsenal of tools that have been developed for this purpose by such predecessor (and its assistance which more is, among many others who got their hands in the dough. . .) (59).

I also considering the compactification "Deligne-Mumford" modular multiplicity $M_{g,v}$ (over Spec Z),

24 (25 May) Yet this was kindly suggested in this famous jubilee brochure, in anonymous pen I

think I recognize. On this subject the note "In Praise of Death (2)", which follows "In Praise of Death (1)" cited in the previous Note b. p.

13.2. II Orphans

for smooth related algebraic curves of genus g with v points scored. They were introduced ²⁵ (*) Occasionally the problem to prove the connection between the modular spaces $M_{g,v}$ in any characteristic, a specialization argument from the characteristic zero. These objects $M_{g,v}$ seem (with Sl group (2)) the most beautiful, the most fascinating I have ever met in math (47 2). their only existence already, with properties such perfect point strikes me as a kind of miracle (perfectly understand what is more), an incomparably greater range than the fact that connectivity This was demonstrated. To me, they contain in essence what is most essential in geometry algebraic, ie all (to pretty much) of all algebraic curves (on all body conceivable basis), which is precisely the ultimate building blocks of all other varieties Algebraic. But the kind of objects in question, "clean and smooth manifolds over $\text{Spec}(Z)$ " escapes yet the "permitted" category, that is to say those that are **willing** (for reasons we did guard consider) to be good enough "to admit". The average person speaks at most by allusions, and air to apologize for appearing to still make the "general non-sense", while we took care certainly say "Stack" or "field", not to mention the taboo word "topos" or "multiplicity". Therefore without no doubt why these unique jewels have not been studied or used (as far as I know) since their introduction there are more than ten years, except by myself in seminar notes

0
remained unpublished. At p. 195

Instead, we continue to work either with the varieties of "coarse" modules or with coatings finished modular multiplicities who have the good fortune to be true schemes - one and other yet being only kinds of relatively cheap professions and lame shadows of those perfect gems which they come, and remain virtually banished. . .

The four works on the Deligne conjecture Ramanuyam, on mixed Hodge structures on the compactification modular multiplicities (with Mumford), and on the Weil conjectures, each constitute a renewal of the knowledge we have of algebraic varieties and thereby Similarly, a new starting point. This fundamental work will follow in a few years (1968-1973). For almost ten years, however, these major milestones have been the springboard for a roll new and glimpsed in the unknown, and the means for a renewal of broader scope. They led to a sluggish stagnation situation (47 3). This is surely not the "means" that were there it was ten years ago, in some and in others, have disappeared as if by magic; nor the beauty of things at our fingertips will be suddenly fainted. But it is not enough that the world is beautiful - yet should you deign rejoice. . .

Score 47 1

I refer here to the promising start by Contou-Carrère, there are five or six years, a theory Local jacobians on their links with global jacobians (called "generalized Jacobian") for diagrams smooth and not necessarily own curves on any scheme, and with the theory Cartier commutative formal groups and typical curves. Apart from encouraging reaction Cartier, welcome to the first note of Contou-Carrere, by those best placed to power appreciate it was so fresh, the author was careful never to publish the second he kept in reserve, and was quick to change the subject (without avoiding other mishaps) ²⁶ (*).

I suggested the theme of local and global jacobians, as a first step towards a program dating back to the late fifties, especially facing a theory of a complex Dualising "adelic" in one dimension formed with local Jacobian (for lo rings

0
dimension cal p. 196

arbitrary), in analogy with the residual complex of a noetherian scheme (formed with the modules dualisants ²⁵ (*) In Pub. Math. 36, 1969, p. 75-110. See comments in Note ° 63 1

²⁶ (*) (June 8) See the sub-grade (95 1) in note "Coffin 3 - or jacobians too much on" n ° 95.
273

13.) HERITAGE AND HEIR

of all local rings). This part of my cohomological duality program was found (with others) a little relegated into oblivion during the sixties, due to the influx of other tasks which then appeared more urgent.

Score 47 2

Actually, it is the "Teichmüller tower" in which the family of all these multiplicities fits, and the discrete and profinite paradigm of this round in terms of fundamental groupoids, which is

the richest single object, the more fascinating I encountered in mathematics. $S\chi$ the group $(2, Z)$, with the "arithmetic" structure compactifié profinite of $S\chi(2, Z)$ (consisting of the operation of the Galois group $\text{Gal}(\mathbb{Q})$) can be considered as the main building block for the "profinite version of" this tower. On this subject the indications in "Sketch of a Program" (pending or volumes Mathematical Reflections will be devoted to this topic).

Note 47³
This finding of a "sluggish stagnation" is not a carefully considered opinion, to SOMEONE that would be well aware of the major episodes in the last ten years, around the cohomology diagrams and algebraic varieties. It is a simple **print** of a whole "outsider", I removed from other conversations and correspondence with Illusie Verdier Mebkhout in 1982 and 1983. There would surely place to qualify this impression in many ways. Thus, the work "Conjectures Weil II" Deligne, published in 1980, represents a further substantial progress, if not a surprise at the result main. It seems there has also been progress in crystalline cohomology since. $p > 0$, besides the "rush" around the intersection cohomology, which eventually bring back some (against their will) the language of derived categories, and even make them remember long repudiated paternity. . .

Note 47³

This finding of a "sluggish stagnation" is not a carefully considered opinion, to SOMEONE that would be well aware of the major episodes in the last ten years, around the cohomology diagrams and algebraic varieties. It is a simple **print** of a whole "outsider", I removed from other conversations and correspondence with Illusie Verdier Mebkhout in 1982 and 1983. There would surely place to qualify this impression in many ways. Thus, the work "Conjectures Weil II" Deligne, published in 1980, represents a further substantial progress, if not a surprise at the result main. It seems there has also been progress in crystalline cohomology since. $p > 0$, besides the "rush" around the intersection cohomology, which eventually bring back some (against their will) the language of derived categories, and even make them remember long repudiated paternity. . .

13.3. III mode - or the Lives of Famous Men

13.3.1. The instinct and fashion - or the law of the jungle

Note 48

[This note is called by footnote 46 p. 265]

0

As is well known, the theory of derived categories is due to JL Verdier. Before he undertook p. 197

the work of foundations that I had proposed, I confined myself to work with derived categories heuristically, with a provisional definition of these categories (which proved later to be the good), and also with a provisional intuition of their essential internal structure (which is intuition technically proven false in the intended context, the "mapping cone" will depend **not** functorially of the arrow in a derived class which is supposed to define it, and which defines the only isomorphism not only close). The duality theory of coherent beams (ie the formalism of "six variances" in the coherent framework) that I had developed in the late fifties 27 (*), only made sense that modulates a working basis on the notion of derived category, which was done by Verdier later.

The text of the thesis Verdier (passed only in 1967), twenty pages, seems to me the best introduction to the language of derived categories written to date, placing this language in the context of its essential use (many of which are due to Verdier himself). It was only the introduction to a work in preparation, and that ended up being drafted later. I flatter myself to be, otherwise the unique, at least one of the very few people who can testify having held their hands that work, 27 (*) There are still missing Rf operation ! (cohomology with own support) for a non-proper morphism, which was introduced six or seven years later by Deligne, thanks to the introduction by it of context coherent promodules, which strikes me as an important new idea (successful recovery in its laminates promodules theory).

274

13.3. III mode - or the Lives of Famous Men

which is supposed to establish the title of doctor of the merits of Science awarded to the author on the basis of one introduction! This work is (or was -... I do not know if there is another copy somewhere) the only text, to date, that this systematic foundations of homological algebra from the point of view derived categories.

0

Maybe I@ the only regret that neither the chapeau, neither such foundations have been p. 198 published 28 (*), so that the essential technical skills to use the language of derived categories is scattered in three different locations of the literature 29 (**). This lack of a reference text routine, a weight comparable to conventional book Cartan-Eilenberg, appears to me both a **cause and a sign** typical of the disaffection that hit the formalism of derived classes after I left the mathematical scene in 1970.

It is true that in 1968 he had already proved (occasionally needs a cohomological theory traces developed in SGA 5) that the term derived category in its original form, and the corresponding concept sponding to triangulated category, were insufficient for some needs, and that a working foundation further to be done. A not useful, but still modest in this direction was made (for needs mainly because of traces) by Illusie, with the introduction in his thesis of "derived categories filtered." It seems that my departure in 1970 was the signal for a sudden and final judgment of any re-bending on the fundamentals of homological algebra, as also those intimately related, theory units (48 1). Yet in terms of the first, all the essential ideas of the foundations of in-vergence seemed acquired from the years before my departure (48 2). (Including the key idea of "shunting", or

"Making machine derived categories", which seems to be the richest common object underlying the triangulated categories that we have encountered so far, that idea will eventually be developed as bit in a non-additive part, nearly twenty years later, in a chapter of Volume 2 of the Continued Fields.) In addition, a large part of the work of foundations to do was already done by Verdier, Hartshorne, Deligne Illusie work that could be used as such a synthesis incorporating the ideas acquired in the broader perspective of shunts.

0

It is true that this disaffection within fifteen year period ³⁰ (*) to the concept of class ^{p. 199} derivative, which in some is related to the disallowance of a past, going in the direction of a certain mode, which affects to look with disdain any reflection of fundamentals, so urgent as it is ³¹ (**). On the other hand, it is clear to me that the development of étale that "everyone" uses today without looking twice (if only implicitly via feues the Weil conjectures ...) could have possible without the conceptual baggage that represented the derived categories, les six opérations, and language sites and topos (first developed specifically for this purpose), excluding USG 1 and 2. And it ©SGA equally clear that the stagnation that we can see today in the cohomology theory of varieties Algebraic would have appeared much less settle, if some of those who were my students had able, during these years, take their healthy instinct mathematician rather than a fashion they were among the first to introduce, and which for a long time and with their support has become law.

28 (* (May 25) After these lines were written, I discovered that the first embryo of the thesis Verdier, dating from 1963 (Four years before the defense) was finally published in 1967. On this subject, notes "The gossip" and "credit and Thesis comprehensive insurance ", n ° 63 and 81.

29 (** These places are: the well-known seminar on Hartshorne consistent duality, containing the only part published to date duality theory that I had developed in the second half of the 50s; one or two presentations in Deligne APG 4; one or two chapters of the voluminous thesis Illusie.

30 (*) (24 May) necessary to qualify these "past fifteen years" - see this footnote ° 47 3 , and the note more detailed "Credit Thesis and comprehensive insurance ©n ° 81.

31 (**) (25 May) for a reflection on the forces at work in the emergence and persistence of this mode, see the note "The Deadman - or the whole Congregation "n ° 97.

275

13.) HERITAGE AND HEIR

Score 48 1

The same can be said elsewhere (with reservations) the whole of my program foundations of algebraic geometry, which only a small part has been fulfilled: he stopped short with my departure. The ruling struck me particularly in the dual program, which I considered particularly juicy. The work of Zoghman Mebkhout pursued against all odds, was nonetheless are in line This program (renewed by providing unexpected ideas). The same is true of the work of Carlos Contou-1976 Carrère (which was discussed in note (47 1) 273 p.) - work it has been prudent to suspend sine die. There has also been work on duality in cohomology fppf surfaces (Milne). That is all what I learned.

It is true that I never thought of writing a sketch of the long-term program of work that had clear to me over the years between 1955 and 1970 as I have done for the past twelve years, with the outline of a program. The reason is simply, I think, he has never presented to occa-Particular sion (like now my application to enter CNRS)

0

motivate such work of exposure.

p. 200

Is contained in the letters to Larry Breen (1975) are reproduced in the appendix to Chapter I of History Models (Mathematical Reflections 2) some indication of some theories (including duality) on my calendar before 1970 theories that are still waiting for arms to enter the common heritage.

Score 48 2

The same is true also for the theory of motives, except that it is not probably likely to remain conjecture for some time.

13.3.2. The unknown service and the theorem of God

Note 48

[This note is called by footnote 46 p.]

While it is customary to call the key theorems of a theory by the names of those who have completed Working identify and establish, it seems that the name of Zoghman Mebkhout was deemed unworthy this fundamental theorem, the culmination of four years of stubborn and solitary work (1975-1979), to counter current fashion of the day and the scorn of his elders. These, on the day when the scope of the theorem could not be ignored, are pleased to call the "theorem of Riemann-Hilbert" and I trust them (while Riemann Hilbert nor do would surely have asked so much. . .) They had to do very good reasons.

After all (once the feeling of a need - that of a precise understanding of relations general coefficients discrete and continuous coefficients, appeared against the general indifference, he has refined and clarified by delicate work and patient, after successive stages proper statement was finally cleared, it is written black on white and proven, and when it finally loneliness fruit theorem proven where we least expected - after all) this theorem seems so obvious (not say "trivial" for those who "have demonstrated the" ...) that there is really nothing to clutter memory of the name of an unknown wave of service!

Encouraged by this precedent, I now propose to call "theorem of Adam and Eve" every theorem really natural and fundamental theory, or even go further and to honor here where honor is due, calling it simply " **theorem of God** " ³² (*).

0

For all I know, except myself, Deligne was the only front Mebkhout feel the interest

p. 201

there was to understand the relationships between discrete and continuous coefficients coefficients in a wider context as laminated modules, so that they can interpret in terms "continuous" coefficients "constructive patible "any. The first attempt in this direction is the subject of a seminar (remained unpublished) of De- ³² (*) I have not had in my life mathematician this pleasure to inspire, or only to encourage a student at a thesis containing a "theorem of God" - at least not with a depth and a comparable scope.

276

13.3. III mode - or the Lives of Famous Men

online at IHES in 1968 or 69, where he introduced the perspective of "layered promodules" and gives a theorem comparison (over the field of complex) for the transcendental discrete cohomology and cohomology the type associated De Rham, which has meaning for finite type patterns on any base body since. nothing. (Apparently, he was not even aware at the time of the remarkable result of his distant Riemann and Hilbert predecessors. . .) Even more than Verdier ³³ (*) or Berthelot ³⁴ (**), Deligne was therefore particularly well placed to appreciate the interest of management where research is engaged of Mebkhout in 1975, and subsequently the interest the results of Mebkhout including the "theorem of good God, "which gives a more delicate and profound understanding of discrete coefficients in terms of coefficient-continuous coefficients, as he himself had cleared. This has not prevented Mebkhout had to continue its work in painful moral isolation, and that the credit it deserves (even more, I would say) for its pioneering work remains retracted yet, today, five years after ³⁵ (***)).

13.3.3. Weight canned and twelve secret

Note 49

[This note is called by footnote 46 p.]

0

Upon verification (Publications in Mathematics 35, 1968), I see that towards the end of the article "Theo- p. 202 rth Lefschetz and spectral sequences degenerate criteria ", it is hinted in three lines of "Weight considerations" that had led me to conjecture (in a somewhat less general form) the re- Main Result of work. I doubt that this cryptic allusion could be useful to anyone, nor understood the time by someone other than Serre I, who were all ways already aware ³⁶ (*).

I note in this connection that "Yoga weight" very accurate, including the behavior of weight for operations such as $R_i f$ and $R_i f_!$, I was well-known (and therefore also Deligne) at that time, in the last sixty years, in the wake of the Weil conjectures. Part of this is yoga finally established (in the context of the beams coefficients l-adic, until he is in the most natural setting patterns) in the working Deligne "Weil conjectures II" (Publications Mathematics 1980). I believe, during the twelve years that have passed around between the two times ³⁷ (**) there was trace in a presentation literature, if brief and partial if it is, yoga weight (yet entirely conjectural), who all this time remained the exclusive privilege of a few (two or three?) initiated ³⁸ (***)). Now that yoga is an essential first key to an understanding of the properties ³³ (*) Apparently Verdier, as official supervisor for the thesis Zoghman Mebkhout (and as such even him "Granted some discussions"), was the main question (besides Mebkhout itself) in the retraction has been done around the authorship of this fundamental theorem, and credit amounts to his "pupil" in the renewal that begins in the cohomology theory of algebraic varieties from the point of view of the 3-modules developed by Mebkhout I do not have Yet knowledge that he would be moved more than Deligne.

³⁴ (**) (May 25) As I write this, I abstained (with some hesitation) to include the name of my friend Luc Illusie this list of my students who were "best placed" to provide encouragement to Zoghman Mebkhout that ought to go without saying. I have not been paying attention then to some discomfort in me, who could have taught me that I was being

give a little boost for someone I have affection, to mine discharge the responsibility incumbent upon him as my other "cohomologistes students."

³⁵ (***) (May 25) In fact, this retraction is the work in the first place Deligne and Verdier themselves. On this subject the

notes "The Iniquity - or the sense of a return," n ° 75.

36 (*) (April 29) For a closer look at this article informative in more ways than one, see Note "Eviction" (n ° 63).

37 (**) (April 19) I see a list of Deligne publications that I have received and read with interest, it is a question the "weight" in 1974 Deligne in a communication to the Congress in Vancouver - so it has been six years of "secret around weight" instead of twelve. This secret yet seems to me inseparable from similar secrecy around the grounds (during the twelve years 1970 to 1982). The meaning of this secret comes to light of a new day in the thinking of today, in the long double Note following n ° 51-52).

38 (***) (25 May) It would seem, from all the information appeared in reflection, that these "two or three insiders" confined themselves to single Deligne, who seems to have taken great care to reserve the exclusive benefit of the

277

13.) HERITAGE AND HEIR

"arithmetic" of the cohomology of algebraic varieties, thus both a **means** to recognize it in

0

a situation and to make a reliable predictions had never seen default layout,

p. 203

and at the same time and thus it represented one of the **tasks** most urgent and fascinating that arose in the cohomology theory of algebraic varieties. The fact that yoga has remained virtually ignored until it was finally established (in some important aspects, at least), I seems a particularly striking example of the role of **information blockade** that often play those which even by their privileged position and their duties are expected to ensure its wide dissemination 39 (*).

13.3.4. You can not stop progress!

Note 50 [This note is called by section 50 of Chapter VIII **solitary adventure** in Part (I) and **Fatuité Renewal** p.]

My first experience in this direction were the unexpected fruit of my unsuccessful efforts to try to publish the thesis of Yves Ladegaillerie theorems isotropy on surfaces - work also good certainly none of the eleven state doctoral work ("before 1970", it is true!) where I had that figure "boss". If I remember correctly, these efforts have continued for many a year or more, and had as protagonists many of my old friends (not to mention one of my former students, as fair) 40 (**). The main episodes still appear to me today as many episodes vaudeville!

It was also my first encounter with a new spirit and new manners (now currents in the circle of my old friends), which I have already had occasion to allude here and there During my thinking. It was during that year (thus in 1976) that I learned for the first time, but not last, it is now regarded as a lack of seriousness (at least to the part of anybody ...) show indeed delicate things that everyone uses and predecessors have always been content to accept (ie, the non-existence of phenomena Wild topology surfaces) 41 (***). Or show a result that includes

0

as special cases

p. 204

or corollaries several deep theorems known (which obviously shows that the so-called result possession of this yoga he held me, until 1974 (see note b. Previous p.)) where the time was ripe for power present it as ideas of his own, without reference either to me or to Serre (see notes n ° s 78 ° 1, 78 °

2.

(18 April 1985) Since these lines were written, I had opportunity to also knowledge of communication Deligne "Hodge Theory I" in Int Congress. Math, Nice (1970) (Acts t.1, p. 425-430). Contrary to what I had reason to believe by the fragmentary information in my possession, this article exposes in 1970 a substantial part of yoga weight. On the origin of these ideas, he merely a cryptic statement and pure form of an article of Serre (also abroad the question), and "conjectural theory of motives Grothendieck". (Compare with the notes n ° s 78 °

1, 78 °

2.) The question

critical of the concept of weight behavior by operations such as $R_i f_!$ and $R_i f^*$ is not even mentioned and not the will not be until the cited article "The Weil conjecture II" in 1980, where my name is not pronounced in connection with the theorem

main of this work, and neither is that of Serre mine in communication "Weight in cohomology algebraic varieties" mentioned in Note b. p previous. (ago a year to the day).

39 (*) See also about sections 32 and 33, "mathematician of Ethics" and "The note - or the new ethics (1)", and two notes thereto, "ethical consensus and control of information" and "The snobbery of youth, or

defenders of purity ", n ° s 25.27.

40 (**) On this subject the note "coffin 2 - or sectioned cuts" n ° 94.

41 (***) See also in this episode "the note - or the new ethic" (Section 33). This famous "note" was precisely the wrong to clarify concepts and statements that had previously been left vague, and yet were implicitly used by me to establish results that bear my name and that everyone uses shamelessly for nearly twenty-five years (Thing besides the two illustrious colleagues were well aware). (June 8) See for details Note "Coffin 4 - "(no or topos without flowers or wreaths ° . 96) The" results that bear my name, "are the results of the generation and the finished presentation of certain fundamental groups profinite global and local, "shown" among others in USG 1 by descent techniques are heuristics for lack of a theoretical justification, careful, accomplished in the work (Apparently "unprintable") by Olivier Leroy, on the type Van Kampen theorems for fundamental groups of topos. 278

13.3. III mode - or the Lives of Famous Men

new can be a particular case or an easy consequence of the known results). Or take worth only in the statement of income or in the description of a situation in terms of another, formulate carefully natural assumptions (indicative of a regrettable bombinage), instead of simply some case the taste of the person of the highest caliber who deliver its opinion. (Last year again, I seen it accuses Contou-Carrère failing bounded in his thesis to be placed on a base body Instead of a general scheme - while conceding still the mitigating circumstance that was surely at the urging of his occasional boss that he had to solve it. One who was speaking was Yet enough in the game to know that even merely the body complex, necessities demonstration force the hand to introduce general database schemas. . .) The aberrations in some fashion today are up honnir not only demonstrations careful (or even any short demonstrations), but often statements and form definitions. At the price is paper and forbearance of stuffed player, it will soon be subject to lug a luxury too expensive! Extrapolating current trends, we must predict when it will no longer issue a publication of explicit definitions or statements, we are now satisfied to appoint by code words, leaving the indefatigable and brilliant reader to fill in the blanks in accordance with its own lights. The task of the referee will be facilitated especially because it needs to do is look in the directory "Who is Who "if the author is known as credible (in any case no one could contradict and white the dotted lines that make up the polished article), or conversely a unavowable unknown will be (as is already the case today and long ago) ejected automatically. . . 279

13.) HERITAGE AND HEIR 280

14. B) STONE AND GROUNDS

Contents

14.1. IV The reasons (burial of a birth). 282
14.1.1. Remembering a dream - or the birth of patterns 282
Note 51. 282
Note 51 1. 286
14.1.2. The funeral - or New Father. 287
Note 52. 287
Note 53. 288
Note 54. 288
Note 55. 289
14.1.3. Prelude to a massacre. 289
Note 56. 289
Note 57. 290
Note 58. 290
14.1.4. The new ethic (2) - or the rat race. 290
Note 59. 290
14.1.5. Ownership and contempt. 291
Note! 59. 291
14.2. VMonamiPierre. 292

14.2.1. The child.	292
Note 60.	292
14.2.2. The burial.	295
Note 61.	295
14.2.3. The event	297
Note 62.	297
14.2.4. Eviction	298
Note 63.	298
Note 63 1.	300
14.2.5. The ascent.	301
Note 63.	301
14.2.6. Ambiguity	302
Note 63 "	
.	302
14.2.7. Lecompère.	304
Note 63 "	
.	304
281	

14. B) STONE AND GROUNDS

14.2.8. The investiture.	305
Note 64.	305
14.2.9. The knot	305
Note 65.	305
turning 14.2.10.Deux.	307
Note 66.	307
14.2.11.Latablerase.	308
Note 67.	308
Note 67 1.	311
14.2.12.L@treàpart.	312
Note 67.	312
14.2.13.Lefeuvert.	314
Note 68.	314
14.2.14.Lerenversement.	316
Note! 68.	316
14.2.15.Laquadrature the circle.	317
Note 69.	317
14.2.16.Theobsques.	318
Note 70.	318
14.2.17.Letombeau.	320
Note 71.	320
14.3. VI The return of things - or the Unanimous Agreement.	322
14.3.1. Unpied in lemanège.	322
Note 72.	322
14.3.2. The return of things (or a foot in the dish).	324
Note 73.	324
14.3.3. The agreement Unanimous.	327
Note 74.	327

14.1. IV The reasons (burial of a birth)
14.1.1. Remember a dream - or birth reasons. . .

Note 51 [This note is called by footnote 46 p.]

0
 (April 19) Since these lines (note that finish "My orphans", n ° 46) were written, there is less
 p. 205

a month, I noticed that they slow down a bit on the events! I just received "Hodge Cycles,
 Motives and Shimura Varieties "(LN 900), by Pierre Deligne, James S. Milne, Arthur Ogus and Kuang-Yen
 Shih, that Deligne was kind enough to send me, along with a list of publications. this collection
 six texts, published in 1982, is an interesting new fact since 1970, by reference to reasons
 in the title and the presence of this concept in the text, however modest it again, especially through the notion
 of "motivic Galois group." Of course, we are very far yet whole picture of a theory
 patterns, which for fifteen or twenty years waiting for the bold mathematician who is willing to the "brush, large enough
 282

14.1. IV The reasons (burial of a birth)

to serve as an inspiration, breadcrumb and skyline for one or more generations of surveyors arithmeticians, who have the privilege to establish the validity (or at least to get to the bottom of reality motifs. . .) (53).

It is also since 1982¹ (*), it would seem that the fashion wind begins to turn more or less overlooked Derived classes; Zoghman Mebkhout (in a flight can be a bit euphoric) already seen in point to "invade all areas of mathematics." If useful, the simple mathematical instinct (For someone knowledgeable) was well evident from the beginning of the sixties, everything begins just to be admitted now is (to me it seems) mainly due to solitary efforts Mebkhout that for seven years has hauled the thankless task of teething, with the courage of one who trusts his instinct alone, against a tyrannical fashion. . .

0

Remarkably, in reading this first publication devoted (twelve years after my departure from p. 206 mathematical scene) a modest return to the pattern concept in the Areopagus of mathematical concepts admitted nothing could suspect the uninitiated that my modest person was associated reader in anything to the birth of this concept long taboo, and deployment a "yoga" rich and specific, which (in a very fragmentary form) appears there as from nowhere, without referring to any paternity (51¹).

When there are only three weeks, I was lying in a page or two about yoga reasons, even one of my "orphan" and that was important to me than any other I had to be right next to the plate! Probably did I dream when I seemed to remember the years of gestation of a vision, tenuous and elusive First, and enriched and specifying in the months and years to a stubborn attempt to try to enter the "pattern" common, common quintessence, whose numerous known cohomology theories then (54) were much different incarnations, speaking to us each in his own language on nature the "pattern" of which she was one of the tangible manifestations directly. No doubt I still dream in me Remembering the strong impression made upon me such an insight Serre, who had been brought to see a group profinite Galois, therefore a subject that seemed essentially discrete nature (or, at least, reducing tautologically to single groups of systems **finished**), as giving rise to a huge system projective groups l-adic **analytical** or groups **algebraic** Q_1 (passing envelopes suitable algebraic), which even had a tendency to be reductive - with the introduction of any stroke arsenal intuitions and methods (the Lie) Analytical and algebraic groups. This construction was meaning for every prime l, and I felt (and I dream that I felt...) that there was a mystery to fathom, the relationship of these algebraic groups of prime numbers different; they all had to come the same projective system of algebraic groups on the only natural common subfield all his body base, namely the Q body, the body "absolute" zero characteristic. And since I like to dream, I keep I remember dreaming that I have entered into this mystery glimpsed, for a job that certainly was a dream since I "démontrais" anything; I have come to understand how the pattern concept provided the key to understanding this mystery - how by the mere presence of a class (here that of "smooth" patterns on a diagram

0

given base, such as patterns on a given base body), p. 207

having internal structures similar to those found on the class of linear representations a pro-algebraic group over a field k (the charm of the concept of pro-algebraic group with me was previously revealed by Serre also), we come to replenish indeed such pro-group (as soon as has a "functor fiber" suitable), and interpret the "Abstract" category as the category of its

1 (*) (25 May) I delayed again, this time of a year - the turning point came in June 1981 with the Symposium Luminy, see note "The Iniquity - or the sense of a return," n ° 75.

283

14. B) STONE AND GROUNDS

linear representations.

This approach to a "motivic Galois theory" was blown me by the approach that I found, years before, to describe the fundamental group of a topological space or outline (or even of any topos - but now I feel that I will hurt sensitive ears that "topos not fun not (...) in terms of the category of étale covers on" "space" considered, and fiber functors on this one. And the same language of " **Galois groups motivic** " (I could as well call "Basic groups" motivic, the two kind of intuition is for me the same thing, since the end fifties. . .), And that of "functor fibers" (which correspond exactly to the "incarnations obvious "he was mentioned above, namely the various" cohomology theories "that apply

in a given category of reasons) - the language was meant to express the profound nature of these groups, and suggest obviously their immediate connections with Galois groups and fundamental groups ordinary.

I still remember the fun and wonder, in this game with functors fibers, and with the torques in the Galois groups that move from one to another in "twistant", to find a particularly concrete and fascinating situation while the arsenal of concepts cohomology not commutative developed in the book of Giraud, with the sheaf functor-fibers (here above topo spreads, or best of topos fpqc \mathcal{Q} - nontrivial and interesting topos if there ever was), with the "link" (in groups! or pro-algebraic) that binds the sheaf, and avatars of this link, realizing by groups or various pro-algebraic groups, corresponding to different "sections" of the wreath, ie the various cohomological functors. The different complex points (for example) a characteristic chart null gave birth (via the functors corresponding Hodge) to as many sections of the sheaf and passage of torques to one another, these torques and pro-operating on them being provided with struc- Points of algebraic-geometric tures, expressing the specific structures of the cohomology Hodge - but the

0
I anticipate another reasons dream door. . . This was the time when those who make today

p. 208
fashion had not yet declared that topos, wreaths and similar not amused them and that it was therefore bullshit to talk about it (not that that would have bothered me also to recognize topos and sheaves here where they are ...). And now twelve years yet passed and that the same pretend to discover and to teach that the sheaves (if not yet the topos), it does have something to do with the cohomology algebraic varieties, even with periods of Abelian integrals. . .

I could mention here the dream of another memory (or memories of another dream...) Around the dream of reasons, also born of a "strong impression" (really I@ in subjectivity!) that had made me some reviews of Serre on a certain "philosophy" behind the Weil conjectures. their translation in cohomological terms, for coefficients with l -adic variable, were suspect on coho- corresponding mologies remarkable structures - the structure of "filtration by weight" 2 (*). Surely the "pattern" common to different l -adic cohomologies was to be the ultimate support of this structure essential arithmetic, which suddenly taking a geometric appearance that a remarkable structure the geometry "design". It is still abusing me surely speak of a "work" (as he agis- yet clear course parts guessing neither more nor less) when it came to "guess" (with as only guide that the inner consistency of vision that formed, using known scattered elements or conjectured here and there ...), the specific structure of the different "avatars" cohomological of a pattern, how to reflected filtration weights 3 (**), starting with the avatar Hodge (at a time when the

2 (*) (24 January 1985) for a correction of this distorted memory, see footnote $n \circ 164$ (14), and the sub-grade $n \circ 164$ 1 , giving Details of the affiliation of the "yoga of weight."

3 (**) (28 February 1985) Here there is some confusion in my mind. This is, in fact, filtration closely linked by 284

14.1. IV The reasons (burial of a birth)

Hodge-Deligne theory had not yet seen the day, and for good reason. . . 4 (***)). This allowed me (in a dream) to see compete in one large table and Tate conjecture on algebraic cycles (here again a third "strong impression" that inspired the dreamer in his dream patterns!) and that Hodge (55), and to identify two or three conjectures of the same water, I talked to some who had to forget them because I do not I never heard any more than

0
@andard conjectures ". Anyway, it was only p. 209
conjectures (and again, not published...). One of them did not concern a cohomology theory particulière, but gave a direct interpretation of the filtration weights on cohomology Motivic a nonsingular projective variety on a body, in terms of the geometric filtration of this variety itself by closed subsets of given codimension (the codimension playing the role of "weight") 5 (*). And there was also the work (although I should put quotes to "work", and can not yet myself resolve!) to "guess" the behavior of the weight by six operations (lost body well since...). Again, I have never felt invent, but still to discover - or to listen to what things said to me when I gave myself the trouble to listen to the pen in hand. What they said was peremptorily precision, which could not deceive.

Then there was a third "dream-motifs" which was like the marriage of the two previous dreams - when it came to interpret in terms of structures on motivic Galois groups and the torsors under its groups which serve to "bend" a functor fiber to obtain (canonically) any other functor fiber 6 (**), the various additional structures which is provided with the class of patterns, and one of earliest is precisely that of the filtration by weight. I seem to remember that there less than ever

it was matter of guesswork, but math translations properly. They were as unreleased "exercises" on linear representations of algebraic groups, which I did with great pleasure for days and weeks, feeling that I was trying to understand more and more about a mystery that fascinated me for years! The most subtle concept perhaps it took understanding and formulated in terms of performances was that of "polarization" of a pattern, drawing inspiration from the theory of Hodge and trying to settle in a guarded sense in the motivic context. This was a reflection which had to be around the time of my thinking about formulating a "standard conjectures", inspired one

0 and the other by the idea of Serre (always him!) a similar "Kähler" Weil conjectures. In such p. 210 situation when things themselves we blow what their hidden nature and by what means we can most gently and faithfully express it, while yet many essential facts seem out of the immediate reach of a demonstration, the simple instinct tells us to simply write black and white what things are blowing us insistently, and the more clearly we take the trouble to write under their dictation! There is no need to worry that demonstrations or structures Complete - bother with such requirements at that stage of work would be to refrain step access the most delicate, the most essential of a large-scale discovery of work - that of the birth of a vision taking shape and substance out of apparent nothingness. The simple act **of writing**, to **appoint**, to **describe** - not least of all that describe elusive or simple intuition "suspicions" reluctant to take shape - a **creative power**. This is the instrument between all of the passion to know, when it invests in things that the intellect can grasp. In the process of discovery in these things, this work is the creative stage of all, which always precedes the demonstration and gives us the means - or "Levels".

4 (***) This was at a time when the young Deligne probably had not heard even pronounce the word "scheme" in a context mathematics and the word "cohomology". (He has knowledge of these concepts to my contact, from 1965.)

5 (*) (28 February 1985) This is actually the filtration "levels" that this (see footnote on previous page).

6 (**) Just as fundamental groups $\pi_1(s)$, $\pi_1(y)$ of some "space" in two X "points" x and y are reduced to one the other "twisting" by the torsor $\pi_1(x, y)$ of x to y paths classes ...

285

14. B) STONE AND GROUNDS

rather, without which the question of "demonstrate" something does not even arise, before anything yet that touches most would have been made and seen. Solely by virtue of a formulation effort This was without taking shape lends itself to examination, making settle what is obviously false that possible, and this especially that fits so perfectly with all things known or guessed, he in turn becomes a tangible and reliable element of the vision into being. It is enriched and is accurate over formulation work. Ten Things only suspected, none (conjecture Hodge say) does not result in conviction, but mutually illuminate and complement each other and seem to compete a mysterious harmony even acquire in this vision of harmony strength. Even though All ten would ultimately prove incorrect, the work that has led to this draft vision was not done in vain, and the harmony that made us see and that we allowed to penetrate so little is not an illusion, but a reality, call us to know. For this work, only we could get in intimate contact with this reality, and this hidden harmony. When we know that things have reason for what they are,

0

that our vocation is to know, not to dominate, while the day a

p. 211

error bursts is day of exultation (56) - as well as the day a demonstration teaches us beyond doubt that such a thing that we imagined was indeed the faithful and true expression of reality herself.

In either case, such a discovery comes as a reward for a job, and could not have taken place without him. But then she would come only after years of effort, or even that we will never learn the end word, reserved for others after us, work is its own reward, rich in every moment of that we reveal this very moment.

Score 51

(June 5) Zoghman Mebkhout yet just draw my attention to a reference to "reasons Grothendieck "made on page 261 of volume quoted in an article Deligne which" takes over and completes a Langlands letter. "It reads:" he did not act for reasons Grothendieck, as he defined them in terms algebraic cycles, but the **units of absolute Hodge**, defined even in terms of Hodges cycles absolute. "The" grounds Grothendieck "(not underlined) are named here, not as a source of inspiration, but to stand with them and insist that it is **something else** (which is careful to emphasize). This distancing is all the more remarkable that the validity of the Hodge conjecture (known conjecture Deligne to, I suppose, as any reader of his article, letter, starting with its original addressee

Langlands) imply that the two are **identical** !!

Of course, in 1964 when I developed the concept of motivic Galois group, I was well known that a notion of "pattern Hodge" could be developed on the same model with a concept corresponding to "Galois group-Hodge Motivic" which was introduced independently by Tate (I can not say whether it was before or after) and then received the group name Hodge-Tate (associated with a structure Hodge). The coarse scam (but that seems to bother anyone, coming from such a prestigious character) is to simply retract authorship of a new and profound concept, that pattern, and a whole rich tapestry of insights that I had developed around this concept, under the risible pretext that technical approach taken to this concept (via absolute Hodge cycles, instead algebraic cycles) is (maybe, if the Hodge conjecture is false) different from the one I had (Very temporarily) adopted. This yoga, I had developed

0

for a period of nearly ten years, was

p. 212

the main source of inspiration in the work of Deligne since its inception in 1968. Its fertility and power as discovery tool were very clear right from before my departure in 1970, and his identity is independent of any technical approach to establish the validity of this or that limited part of
286

14.1. IV The reasons (burial of a birth)

this yoga. Deligne had the merit to identify two such approaches, irrespective of conjecture. He has not by no against honesty to name her source of inspiration, striving since 1968 to hide the eyes all for the exclusive benefit in reserve, waiting to claim (tacitly) the credit in 1982.

14.1.2. The funeral - or New Father

Note 52 To return to the dream of the reasons I think I remember also that I had dreamed aloud.

Certainly the dream work is by nature solitary work - but the events of this tenacious work that has continued for years, alongside a large work of drafting foundations which absorbed most of my time - these adventures had a witness from day to day, much closer than Serre, who was confined to take things further. . . 7 (*). About this confident from day to day, I wrote it in my retrospective had "made a little figure rises" in the mid-sixties, and I had him "told the little I knew in algebraic geometry "I might add that I told him even that I" knew "not to common sense - these "dreams" mathematics (themed designs like others) that still found in him an attentive ear and an alert mind, greedy like me to understand.

It is true that when I wrote that Pierre Deligne could do "a little figure of pupil", this is an im- pressure still entirely subjective (57), that corroborates (to my knowledge) no records or at least printed, which could make anyone suspect that Deligne could learn something by my mouth - so it is my pleasure to recall that I have never spoken with him without mathematics will learn something. (And even when I stopped talking mathematics with him, I continued to ap- taken by him things more difficult and perhaps more important, including this day of writing these lines. . .).

0

Having recently been informed by a third person, who had guessed (one wonders how!) p. 213 the thing that could possibly interest me, the existence of a Deligne text and others where it would issue patterns or at least to "tanakiennes categories", and having had a word with Deligne, it has sincerely expressed surprise that I might be interested in this stuff. Browsing copy it kindly send me yet, I can see in fact that his surprise was well founded.

Obviously, my person is entirely alien about which it speaks. At most he done referring to a phrase in passing, in the introduction, some "standard conjectures" (I made in time, one wonders why) would have a consequence for the structure of the class patterns on a body. . . The curious reader to know more would be hard because it found in everything Book any details or reference to these conjectures, which it is no longer a question; no mention of the one and only published text that explains the construction of a class of patterns on a body in terms of conjectures standard; or the only other text published before 1970 where there is question of motives, due to Demazure (in a Bourbaki seminar, if I remember correctly), who followed my principle of ad hoc construction, with a view a little different. . . 8 (*).

7 (*) (May 25) The beginning of my reflection on the reasons, however place even before the appearance of Deligne. My Notes in manuscript

cripted on motivic Galois theory are dated 1964.

8 (*) After verification, I note that apart from a few pages on standard conjectures (Algebraic Geometry, Bombay, 1968 Oxford Univ. Press (1969) pp. 193-199), there is no mathematical text released me where it is question of motives. In Demazure presentation (Seminar Bourbaki n ° 365, 1969-1970), following the presentation of Manin in Russian, there is mention of presentations

I had made IHES in 1967, and which were (presumably) be a first overall outline of a vision reasons. A presentation on the standard conjectures and their relationship to the Weil conjectures, more detailed than the announcement to Congress Bombay is done by Kleiman (Algebraic Cycles and the Weil conjectures, in ten papers on the cohomology of schemes Masson North-Holland, 1968, p. 359-386). I have no knowledge of a reflection on the standard conjectures, including to the evidence of this, outside the mine before 1970. deliberately ignore these key-conjecture (which I

14. B) STONE AND GROUNDS

0

Even Neantro Saavedra, who was lucky to be part of my "students before 1970", was p. 214

duly summoned. He had done a thesis with me on what I called I believe "rigid tensor categories" and which he called "tannakiennes categories." yet one wonders what chance had miraculous Saavedra to foresee battery needs theory grounds Deligne, who was hatched ten years later! In fact, in his thesis did exactly **the** job that technically is the key to a motivic Galois theory, as the thesis of JL Verdier was in principle **the** work which technically is the key to a formalism of the six operations in cohomology. A difference (among others) in honor of Saavedra is he bothered to publish his work; he had not had, indeed, written by Hartshorne, Deligne and Illusie gathered to dispense with such formalities. Yet ten years later, the thesis Saavedra ab ovo and reproduced almost in toto in the remarkable collection, this time from the pen of Deligne and Milne. The thing was perhaps not essential, it was only to correct two specific points Working Saavedra (58). But everything has its reason for being, and I think I see why Deligne personally took this barely there 9 (*), yet well contrary to its own thrust requirement criteria to its extreme degree in publishing, and it is known to apply with exemplary rigor when it comes to others. . . 10 (**).

In terms of authorship notions and motivic yoga themselves, to an uninformed reader (and informed readers are beginning to be rare and will eventually die a natural death. . .) That paternity may be the least doubt - without any need here to go disturb distant Hilbert and Riemann let alone God. If the famous author, whose best result on absolute Hodge cycles on Abelian varieties appears as the starting point, and the birth in short, the theory patterns, breath word of paternity, that is a modesty

0

that honors and in perfect agreement with the uses

p. 215

and ethics of the profession, who want to be left to others to (if necessary) to honor where visibly honor is due: to the legitimate father. . .

Note 53 Touched by the vicissitudes of this orphan there, and suspecting that another will do the job for which I am apparently the only today still feel the need and extent, I presume that the "mathematician bold "in question is other than myself, once I have been down the Champs Continued (Which I expect it will occupy me for another year approximately).

Note 54 Since then appeared two new cohomology theory for algebraic varieties (to share the Hodge-Deligne natural extension in the spirit "motivic" cohomology of Hodge) namely the theory of "stratified promodules" Deligne, and especially crystals, Version "3-Modules" the Sato-Mebkhout with new lighting that provides the theorem of God (aka Mebkhout) which discussed above. This approach to buildable discrete coefficients is likely will replace the earlier version of Deligne, because it is probably better suited to the expression sion relations with De Rham cohomology. These new theories also not provide New-fiber functors on the category of smooth patterns on a given scheme, but (modulo a La-vail deeper foundations than has been done until now) a way of looking so accurate incarnation "Hodge" a pattern (not necessarily smooth) on a scheme of finite type on the body said, in my sketch of Bombay, I considered them, with the resolution of singularities excellent circuit, as the largest open problem in algebraic geometry), seems to many in the printing of stagnation gives me the cohomology theory of algebraic varieties, by the echoes that came back to me.

9 (*) See about it the reflections in the note "The clean slate", n ° 67.

10 (**) (June 8) And even when it comes to works that bear the mark of my influence - see about the episode "The note - or the new ethic. "Section 33.

288

14.1. IV The reasons (burial of a birth)

complex, or the incarnation "Rham" on a scheme of finite type over a field of characteristic zero. It is likely, moreover, that the theory (apparently still unwritten) coefficients Hodge-Deligne a scheme of finite type C , eventually appear as contained in the theory (as well unwritten) crystalline coefficients to Sato-Mebkhout (with additional filtering given to the key), or more precisely as a kind of intersection of the latter with constructible coefficients discrete theory Q -vector. . . As for the elucidation of the relationship between the crystal theory to Mebkhout with the developed in positive characteristic by Berthelot and others, it is a task even before felt by Mebkhout 1978, in a climate of general indifference, and that seems to me one of the most fascinating that arises in the immediate our understanding of "the" cohomology (single, indivisible, motivic know!) varieties Algebraic.

Note 55

0

Though I dream, but my dream on the relationship between patterns and structures Hodge made me p. 216 put the finger, without even meaning to, on an inconsistency in the Hodge conjecture "widespread" as it was originally formulated by Hodge, and replace it with a corrected version for blow (I bet) should be neither more nor less false than the Hodge conjecture "usual" on cycles Algebraic.

14.1.3. Prelude to a massacre

Note 56 I think especially in the context precisely to the cohomology of algebraic varieties, the Griffiths discovery of the falsity of a seductive idea that had long been on cycles algébricks, that a homologically equivalent cycle to zero had a multiple which was algebraically equivalent to zero. This discovery of a new phenomenon had struck me then enough for me to pass although a work week to try to understand the example of Griffiths, transposing its construction (Which was transcendent over the field C) in a building "as general as possible", and in particular valid lies on one of characteristic. The extension was not quite obvious, with blows (if I remember well) of spectral sequences of Leray and Lefschetz theorem.

(June 16) This thought was an opportunity for me to develop in the context spreads, theory cohomological the "Lefschetz pencils." My notes on this are developed in the SGA 7 seminar II (P. Deligne and N. Katz) in exposed XVII, XVIII, XX N. Katz (who cares to refer to these notes, he has closely followed). In the introduction to the volume by P. Deligne, by cons, which states that Key results of the volume are exposed XV (Picard-Lefschetz formulas cohomology spreads) and XVIII (Brushes theory Lefschetz), the author is careful to point out that I am for something in this "Key Theory" of Lefschetz pencils. Reading the introduction gives the impression that I am not for nothing in the themes developed in the volume.

Along seminar SGA 7, which took over in 1967-69, SGA SGA seminars of 1 to 6 developed under my pulse between 1960 and 1967, was conducted jointly by Deligne and I, who had given the kick-off with a systematic theory of vanishing cycles groups. Writing presentations by various volunteers who dragged, the two volumes of the seminar (SGA7 I and II SGA 7) have published in 1973, through the

0

Deligne. While it was understood at the time that the seminar p. 217 it would be presented as a joint seminar, after I left Deligne told me of his desire (which seemed strange to me) that the seminar is **divided in two**, one part I made as directed by me, the other by him and Katz. I now perceive an "operation" that foreshadows "the SGA operation 4 1 2

"aiming

(Among others) to bring up the whole series of foundations SGA SGA 1 to 7, which in his mind 289

14. B) STONE AND GROUNDS

and its design was inseparable from my person, as well as the EGA series of Geometry Elements Algebraic as a collection of texts to all comers, where my person would play a role episodic or superfluous. This trend is very clear, even brutal in the SGA Volume 4 1

2

and especially in

killing the seminar SGA 5, in which this volume is inextricably linked. On this subject, among others, notes "The clean slate" and "massacre", n ° s 67 and 87, and especially "The body..." (n ° 88).

(June 17) The overall design of the seminar SGA 7 (where I do not make out parts of "I" and "II" and still can not stand) was due to me the other Deligne had made contributions

Important (indicated in my report on the work of Deligne, written in 1969, see n ° s 13, 14 of this Report), the most crucial for the purposes of the seminar is the Picard-Lefschetz formula, proven by argument of specialization from the already known transcendent event. Cleavage of the seminar in two parts

was unjustified both mathematically that for the contributions - there are substantial contributions as Deligne than me in the two "pieces" SGA 7. Of course, I would have been delighted if Deligne had continued the series of foundations SGA I had inaugurated - which was very far from reaching the end of the race! This "operation SGA 7" is not a continuation, but I feel it as a kind of "saw-shot" (or chain saw...) brutal **ending** to the series of SGA by a volume that stands out ostentativeness my person, so it is related to my work and is marked as much as others. While my person there is retracted as far as possible, the tone vis-a-vis my work is not yet that of the barely disguised contempt for the "operation SGA 4 1 2

", who represents a saw otherwise fail even more abrupt in the unit of the seminar SGA 4 and 5, and the mean and pretext to rampage in good standing of the unpublished SGA 5 thereof, the separated pieces shared equally Deligne and Verdier. . .

Note 57

0

I hasten to add that the same applies to the other great ways mathematician

p. 218

which I had ventured to say (in note ◦ 19) that he had "made a little figure of pupil", ten years after Deligne.

Note 58 This reminds me that the readings Notes (which published six or seven doctoral theses torate "pre-1970" made me) never wanted to publish that of Yves Ladegaillerie, "post-1970" (Reason: they do not publish theses!). One can say that they have by cons published a second thesis Saavedra. . . I also talked to the Deligne good result isotopy of Ladegaillerie was refused everywhere (with the secret hope he would grant more assistance to publish) - but have not had the good fortune to the interest (reason: his incompetence in surface topology...).

Curtain. . .

14.1.4. The new ethics (2) - or the rat race

Note 59 (April 20) the past few weeks that these lines were written, who see a contradiction and price, I was surprised that he had for the past two years found a way more Simple to "solve" said contradiction - all were thinking about it! It could be called "the method of withholding burial" (which the reader may consult in double notes (50) (51), written yesterday, in the fresh thrill of discovery). I am sorry that the sudden reappearance of the early deceased on the famous "mathematical scene" (sometimes decidedly more like a rat race ...) risk of introducing technical complications for implementation burr of this brilliant method! In a previous note ("ethical consensus - and control of information", n ◦ 6) I felt (slightly 290

14.1. IV The reasons (burial of a birth)

confused again) that the most universally accepted rule of professional conduct in the profession sci- fic "remained a dead letter" in the absence of compliance by the people who control information science, law for any scientist to be able to share ideas and results. Around that time reflection I also took the trouble to describe at some length a case where the contempt this right was for me obvious, and where I felt, moreover, that this contempt was borderline contempt also the first rule, which is the subject of a general consensus. (See "Note - or the new ethics", section 30).

0

This is not the only time I have felt this very special discomfort, when I saw **the spirit** of this p. 219 despised first rule, as one who did was "thumb" both by its position (above all hint!) and by its means, that by the casualness of form. I try to identify the malaise in Note ("snobbery of youth - or the defenders of the purity") which relates to the cited section. When we allows himself to despise things "obvious" I am talking about here, and in the same spirit as (I might add Now) things (perhaps deep) that are neither proven nor patented as "conjecture" published and known to all, we might as well (given the limited I) consider them as common property (trivial, of course) 11 (*), so too, when needed, such as "hers" with the utmost casualness and better awareness of the world - it being understood that one would not think of appropriating a demonstration muscled ten pages or a hundred (or only ten lines) which establishes a result "we would not have known show "(59). I did not think so either feel so right (about" dead letter "), since I been given cheerfully see crossed the "limit" of undecided cases cited above - and surely crossed with better awareness of the world again, **given the short: a dream** , and moreover is not even shown (or especially, **published** ...). 12 (**)

Fortunately I have the defense - I can when necessary to somehow express what I feel and I want to say, I acquired (rightly or wrongly) credibility, and thus a chance to be listened to when I have something to say or publish it if I feel the need. For cons, I realize more deeply that "Feeling of injustice and helplessness" of the one who

0

is injured without recourse, when he feels bound hand and foot p. 220
before the arbitrariness of "those who have everything in hand" - and wear their pleasure.
It is true that happened to me in my life mathematician to have Filthy behavior with
equally good conscience, and I had the opportunity in my thinking to talk about the case that it has
re-emerge from the mists of oblivion and ambiguity ever examined. By surveying I finally understood that I
did not astonish me if today (and for a long time) the student easily passes the master nor
disavow anyone that binds me sympathy or affection. But it's healthy for me and for
all, to call a cat a cat, this cat is my home or that of others.

14.1.5. Ownership and contempt

Score ! 59

(8 June) I'm not at all convinced, regarding my friend Pierre Deligne, who had
the opportunity to see it ended up sliding into the game of "tacit paternity" with respect to the tool cohomolo-
cal l-adic ie what I call "mastery" of the étale. There has been a remarkable evolution
between the "SGA 4 operation 1

2

"(Where my name is still pronounced, but with contempt assignment disin-

11 (*) This has been the fate of such "theorem of God" (aka Mebkhout).

(June 8) Taking care of more, like the yoga patterns, skillfully create the appearance of having paternity without
never say in clear! On this subject (in this case) the note "The Magician" n ° 75 ", and for the brilliant method
general or style, the note "Go!" n ° 77 and the Note following "Ownership and defiance," n ° 59 ©

12 (**) It would be wrong to interfere, so that the event seems to show that the general consensus nowadays considers
something quite normal - at least from someone so fly high! So-called "good conscience" is

no more, no less, that the feeling of an agreement with the consensus prevailing in the environment to which one belongs.

291

14. B) STONE AND GROUNDS

volte respect to this central part of my work, which is his end) and "The Praise of Death" where all
reference to the very word "cohomology" is banned in relation to my name. (See notes "The clean slate" and
"Being apart" for the initial phase, and notes "praise Funèbre (1), (2)" to the final stage.)

As intermediate steps in the escalation, there in 1981 "memorable article" on the beams
called "perverse" (see notes about "The Iniquity - or meaning of a return"! "Thumb" and n ° 75 and 77), and
exhumation patterns LN 900 in the following year (the Eulogy Funeral placing the following year,
in 1983). In all these cases and other smaller, I could observe the inner attitude and

"Method" that allows Deligne take credit for others' ideas with a good conscience par-
made is that of **disregard** (which remains partially implied, while skillfully suggested) vis-à-vis the "bit"
we are preparing to take ownership - so "little" in fact it is not even worth talking about, then we will
use dry as to make really strong things - Weil conjecture, theory of so-called bundles "per-
to "... After completing the operation, ownership being done and accepted by all, it is always
time to change course and to strut modestly with what was appropriate. The same contribution is
casual object of scorn, as it still seems tainted the name of one of those

0

it is buried, and

p. 221

is blown up when it was appropriate for himself (l-adic cohomology, patterns, waiting
Yoga Mebkhout) or such a good friend (derived yoga classes, yoga duality, by appropriate
Verdier with active encouragement Deligne).

14.2. My friend Pierre V

14.2.1. The child

Note 60

0

(April 21) To continue the dream of a memory, which is not only the memory of the birth

p. 223

a vision ... I remember well (although I forgot so many things!) the renewed pleasure every time
I had to talk to one who had quickly become more confidant of all that intrigued me, or
which was lighted and enchanted me daily in my love affair with mathematics, he had
never been a "student." His interest always awake, the ease with which it becomes aware of any
("As if he had always known...") Were for me a constant source of delight. Was listening
perfect, driven by the thirst for understanding that animated like me - a highly awake listening sign
a communion. His comments were always in front of my own intuitions or reserves when
they cast some unexpected light on the reality that I was trying to identify through the mists
still around. As I said elsewhere, often he answers to the questions I raised,

often on the field, and he was developing in the days and weeks that followed. This means that listening was shared, when he told me to turn the answers he found, that is simply the reason of things, which always appeared with the perfect natural, with the same ease that had me often delighted at some of my elders as Schwartz and Serre (and also, at Cartier). It is this simplicity, the same "evidence" I had always continued in the understanding of things mathematics. Without having to say it, it was clear that this approach and this requirement, we him and I "of one family."

I felt good from our meeting that his "average", as they say, was a very rare quality, far beyond the modest means at my disposal, while the passion to understand and the requirement overlooked understanding of mathematical things, we were on the same wavelength. I was also confused, without that I would have known then me formulate this "strength" that I noticed in him (and I was also

292

14.2. My friend Pierre V

me, but this to a lesser extent), that "see" the obvious things that nobody saw, was Child strength, the innocence of children's eyes. There was in him something of the child, more apparent than in other mathematicians I have known, and it is surely no coincidence. He told me one day, while he was still in high school I think it was fun to check the multiplication table (and along the way and by force of circumstance, the addition table too)

0

for the numbers from 1 to 9, in terms p. 224

definitions. He did not expect any surprises certainly - if surprise (pleasant, as always ...) ago had was that the demonstration could be done beautifully and completely in just a few pages, history half an hour maybe. I felt good when he told me the thing, laughing, that it had been there a half hour well spent - and this is something that I understand even better than today. This story struck me, impressed even (though I let it show I think) - I felt the sign of **internal autonomy**, a vis-à-vis freedom of received knowledge, which was also present in my relationship to mathematics in my childhood, from the first contacts (69) 13 (*).

This point of contact relationship to one another, as we saw virtually all days I think 14 (**), continued over a period of five years, from 1965 (if my memory is correct) to 1969 included. I still remember the pleasure I had in that year to write a detailed report on its work, so I offered to co-opt as a professor in the institution where I had worked since its foundation (in 1958), where most of my mathematical work is accomplished is. I have no more a copy of that report (64), where I was reviewing a dozen I believe work of my friend, almost all unpublished so (many are also stayed), which most if not all of them on weight, in my opinion, the main substance of a good state doctoral thesis. I was more proud and happy present this eloquent report if it were to report on my own work (something I've done that twice in my life, each time forcing myself. . .). Many of these works were answers to questions I had raised (the only published among these being the previously mentioned work on the degeneration of the Leray spectral sequence for a clean and smooth morphism of schemes (63)). The two most important by

0

against were the answer to questions Deligne himself had landed, and was p. 225

Clearly, their reach was another order that a "good status doctoral thesis". It was his job on the conjecture Ramanuyam (published in seminar Bourbaki), and work on the structures of Hodge mixed, also called "theory of Hodge-Deligne".

It is a strange thing and that I was far from suspecting when I wrote this sparkling report, I would quit less than a year before this institution as I was about to co-opt my young and impressive Friend, where I intended to end my days. And (now that I am bringing these two double-episodes) is another strange thing, not more surely the effect of a mere "coincidence" that this same (Now not so young!) Friend has told me there is a month or two his own departure from the same institution, when it was just a year as I resumed regular mathematical activity, in the sense of a kind of "return" unexpected on the mathematical scene (if not in the "big world"...) More than once I have had occasion in sowing crops and talk about my departure - this "tear healthy" - and more of the "awakening" that followed it closely, and that made this episode a crucial turning point in 13 (*) It seems to me also that this freedom has never completely eclipsed during my mathematician's life and is again present as it was in my childhood. There are two or three years I révoqué for my friend the little episode the multiplication table. I felt embarrassed by this evocation of a childhood memory that corresponded more visibly the image he has of himself. I was not really surprised by this discomfort, but struggled to see yet again confirmed something I knew and yet I still had difficulty accepting. . .

14 (**) It was so at least while I was living in Bures, where he was lodged in a studio at IHES. From 1967 (when I moved in Massy), I think we would still be well once or twice a week, at least as long as I

14. B) STONE AND GROUNDS

my life. In intense years that followed, the world of mathematicians, with whom I had loved, and the very thing that had fascinated me most in mathematics itself, have become very distant - as lost in the mists of memory of another "myself" that would be dead for ages. . .
But both before this episode, that in the years that followed the first major turning point, I knew as that was (just 15 (*)) my student and (many) a confidant and friend, had only to follow the momentum spontaneous in him a child playing and wants to know, to discover and bring out new worlds and unexpected, and to probe and know the inner nature - and thus also reveal its congeners as to himself. Also, if after my departure (without spirit back!) I saw "a mathematician bold "and inspired paint in broad strokes (for starters ...) this broad picture I had glimpsed and whose I had even drawn a series of partial and provisional drafts, it was him - who while hands to do it! Brush this first picture of vast scale, a "project manager" meeting in a most common vision of what was known and what was guessed on

0

cohomology of varieties

p. 226

algebraic, for the one in whom such an overall vision was already ready to come out of the mists of non-yet-written, was the work of a few months, even years, (Left to resume and deepen the Over the years, or generations if needed for generations - until the last word of reality reasons fully understood and established.) And I do not doubt that this work there, who once "burned myself in their hands, "was going to be done from one moment to another, and at least in the past two or three years followed and then it was all still hot. After I left, there was still one person who was certainly known by its momentum even knowledge to make this hot and fascinating work. Exits, once the "master masterpiece "written and tested, and the building of the few advanced outwork or less, to let others care to continue this work then, so fascinating as it is, to embark on other adventures in this world mathematical things where every turn of the road reveals the promise of a new world without limits, as long as we have open and new eyes to see. . .

By the time my life is still taking place in the hot oven scientist who isolated the noise world, and when developing its Deligne extension Hodge theory (it was to be in 1968 or 69) it was a thing between self-evident that this work was a first step to realize, to test and to specify a certain **part** of the "painting of reasons", which had never been black and white in his set 16 (*). In the years that followed my departure from the oven, at a time when mathematics was for me though distant, it is certainly no surprise that I learned that the Weil conjectures were finally demonstrated. (If there was a surprise was that the "standard conjectures" were not demonstrated in the same vein, while they had been cleared just for an approach to the conjectures Weil, together as a way to establish at least a theory of semi-simple patterns on a body 17 (**).) I knew that neither

0

the first jet to a general theory of the coefficients

p. 227

Hodge, nor by this demonstration of some key conjectures (among a number of other more or less well known) he still gave his full measure - he was far along. And I waited without impatience, while most of my attention was absorbed elsewhere. (-> 61)

15 (*) For the purposes of this scruple in me to consider (too!) Brilliant Deligne as one of my students, see note "Being in hand "(n ° 67).

16 (*) What later this theory Hodge-Deligne has never (to my knowledge) passed the stage of the draft, it will ever expanded into a theory of "coefficients Hodge-Deligne" (and "six operations" on them) above finite type patterns on the body complex, is inseparable from this other strange fact: that this vast "array of reasons" was never brushed, and that its very existence has been thoroughly kills up to today. . .

17 (**) It is only in recent years that I became vaguely aware (but specifically these days!) that "standard conjectures", as well as the very notion of reason that they provided a first approach "constructive tive ", had been **buried** , for reasons that now seem to me particularly clear. (Compare also with the previous footnote page).

294

14.2. My friend Pierre V

14.2.2. The burial

Note 61

I had the privilege of seeing a first flowering of a child's momentum, bringing the promise of large scale deployment. In the fifteen years that followed, I came to realize this promise remained without constantly deferred. There was this tricky thing in him that I knew and felt recognize (at a time though when I was insensitive to so many things!), something that is otherwise Nature that brain power (which both crushes it enters...) - an essential thing between all for any truly creative work. This thing I had felt in other times, but in no mathematician I had known, she had appeared with comparable strength. And I expected (As a matter of course) that this thing would continue to flourish in him and transform, and express themselves effortlessly by a single work, which I would have been a modest precursor. But strange thing again (and surely there is a profound and simple link between so many "strange things") - I saw this "delicate thing" this "strength" which is that of muscle or brain gradually clear over the years, such as **buried** under successive layers, and increasingly thick - has the layers **no other thing** I know only too well - the most common thing in the world! This does not necessarily done with ill household power brain or with consummate experience or flair exercised in a particular discipline, which may force the admiration of some and the fear of the other, or both at once, by the accumulation of works, brilliant perhaps and certainly with their strength and beauty. But that's not it yet that I thought when I was talking about "deployment" or "fulfillment". The development which I thought was fruit of innocence, eager to learn and always ready to enjoy the beauty of the small and big things this inexhaustible world, or that part of the world (like the vast world of mathematical things...). It was he who alone has power to profound renewal, whether self-renewal, or that the knowledge of the things of this world. The one who found himself fully realized, I think, in modest person a Riemann 18 (*). This is real development abroad

0
contempt in violation of p. 228
others (those we feel far below itself...), or that of things too "small" or too obvious to we deign interested, or from those estimated below its legitimate expectations; or the Such contempt **dream** perhaps, telling us insistently things we profess to love. . . He is stranger contempt, as it is foreign to the conceit that feeds it.

Certainly its "means" impressive, but even more by this sensitive thing that impresses person who **creates**, "the student" was called to exceed by far "the master". I had no doubt that from the years following my departure from this place where I witnessed a beautiful flight, Deligne give full the extent of a work deployment broad and deep, which I would have been one of the forerunners. The echoes of such a work would not fail to reach me over the years, while I, in pursuit other quests away from mathematics, could imperfectly appreciate the scope and all Beauty new worlds he would discover.

But the student can not exceed the master in the **disavowing** deep inside, trying in secret to oneself as to others, to erase all traces of his contributions (the contribution was for the best, or worse. . .) - nor the son can truly overcome the father disowning him.

This is something I learned mostly through my relationship with my children, but (later) through that with some of my former students; and especially with that, of all others, I still me scruple to call the name of "pupil", who felt good from the moment of the meeting that I had to learn 18 (*) The work of Riemann (1826-1866) held in a modest volume of about ten works (it is true that he died in quarantine), most of which contain simple and basic ideas that have profoundly changed the mathematics his time.

295

14. B) STONE AND GROUNDS

him, much as he did me 19 (*). But it is almost ten years after this meeting, and after 1975 especially since I sometimes ponder the meaning of what I saw and what I witness, I began to feel that **impedes** on him that continued to be dear to me. And I felt so darkly that this secret disavowal of my person and a role that I had in the crucial years of his life, was also, more profoundly, a repudiation **of himself**, (This is, no doubt, whenever we disavow and want to delete

0
something that has actually happened, and that it behooves us to pick the fruit. . .).

p. 229

However, if not so little self "connected" to "what was in math," and what he was doing there himself even 20 (*) I never measured before to think about it a few weeks ago, how has this obstacle also weighed on it even in what he had invested his all: his mathematical work. Certainly more than one time in eight or nine years I have seen the good sense or the healthy instinct mathematician as deleted by a deliberate disdain (against me) or contempt (against others that it was in his power

discourage) (66). It has also not been the only one of my former students, with or without quotation marks, in that I have witnessed such attitudes towards people who held my heart (or vis-à-vis other).

But in no other have I been so painfully touched. More than once in my thinking two less passed, I referred to that experience, "the more bitter it was given me to live mathematician in my life" - and I also said that she ended up teaching me, at the end of this reflection Crops and Seeds. This penalty was so great, she taught me something of this scope on a person who was always dear to me (as I continued to elude it also taught me about myself and on my past. . .), The question of the effects of this thing on a more or less "creative" mathematics, at home or even in one who was discouraged or humiliated, became fully accessory if not ridiculous.

The note "Denial of inheritance - or the price of a contradiction" is the first written when I was thinking an assessment of what was returned to me in bits and pieces here and there over the years, both on the "state of art", as the work of the one I had so much and so little known. It is also the first time I saw finally, in a glance, all the " **price** ", or weight, even in its work of mathematician, this refusal since it carries with it over fifteen years probably. In writing this note I "retardais" However, since the past two years (And that "one" sees fit to inform me), the grounds were out of secrecy where they had been kept for twelve years. . . And now as I write this final stage (I think) of my reflection on my past mathematician, two days after learning in large

0

lines that memorable volume

p. 230

dedicates this "comeback" stealth, perception of this crushing weight became striking. This is the weight that likes to hang out, day after day per hundred turns, one that is made to fly - a flexible and light flight, joyful and fearless to meet the unknown, to his delight and that of the wind that carries it. . . 21 (*)

If it flies, and he is content to be a man admired and feared, accumulating evidence of its superiority on others, I do not have to worry about it, If he drags the weight he likes to hang out, surely he finds 19 (*) (14 June) On this deliberately stubborn home to minimize what I had to give, and to deny the reality of a student-teacher relationship, see note "Being apart", n ° 67 e. Obviously there is no comparison between what my Friend has taught my contact ("as if he had always known," certainly!), and what I learned from him. It was probably otherwise, if I had continued intense mathematical investment to date, and the mathematical Contact Regular is maintained between us.

20 (*) I have received since 1970 four reprints Deligne, I traveled quickly (like most Reprints it still happens that I receive), on the field. It was just to get an idea of mathematical work, even in outline or its main themes.

21 (*) I do not mean to suggest that it is the privilege of a few exceptional individuals to be called to "steal" and discover the world, surely we are all called to birth! This capability yet rarely found the opportunity to flourish so slightly, if only to a very limited direction (such mathematical work). But such a person he was ever seen such a particularly striking ability (in the "mathematical" direction) preserved miraculously, to decline thereafter over the years.

296

14.2. My friend Pierre V

satisfaction - as I also am delighted me hanging weights, and today continues to drag those I did not know yet separate myself along the way. From what I had to give him the best and the worst, he took what he liked. I do not have to worry about his choices, which belong only to him; nor to decree here they are the best or the worst (62). What is "best" for one is "worse" for the other, or sometimes for the same (provided he changes, something unusual it is true...).

But the choices we make and the actions that express (even though our words often the deny), we do at our peril. If they often bring us the expected rewards (that we receive as "the best"), these same rewards sometimes end up having setbacks (we take exception as "worse," and often as contempt). When we finally understood that setbacks are not an insult, often while they are considered as a price to pay, we pay reluctantly. But it happens we also understand that such setbacks are anything but ruthless cashiers, which willingly hurt will have to pay for a good time we took. These are patients and obstinate messengers, who without weary return we always bring the same message; Message certainly an unwelcome and constantly refused - because even more than the setback itself is always challenged his humble message appears as "The worst": Worse than a thousand setbacks, often worse than a thousand deaths and the destruction of the entire universe, including

we have nothing to f. . .

0

The day finally where it pleases us to welcome the message, eyes suddenly open and see: what was p. 231 feared as "the worst" is a **release** , a huge issue - and the overwhelming weight of which we here

is suddenly relieved of that which we clung yesterday, as "the best".

14.2.3. The event

Note 62 (April 21) Some will say that if I do not have to worry about, why I lay on the pages and pages about a personal relationship that concerns only me and the person!

If I felt the need of this retrospective reflection on some important aspects of a relationship, it is under the impact of a specific event and that touches me closely (even though I learn two years delay). This second event is in the public domain, so that more evident behavior and routine acts of mathematicians view (such Deligne, or myself) against other less reputable or beginners (although their effect on the lives of others is often of a different scope in this case). The event in question (ie the publication of the "memorable volume" of reading Notes LN 900, aka "Volume Funeral") as his surroundings seemed **unhealthy**, rightly or wrongly. he seemed healthy for everyone, starting to "the person" himself, to give a detailed testimony some ins and outs, which go to the bottom of things as I see them today.

By this testimony and this reflection, I am not trying to convince anyone of anything (else too tiring, and more hopeless!) 22 (*), but simply to understand events and situations in which I found myself involved. If they incite others to a true reflection, beyond use of clichés, this testimony will not be published in vain.

22 (*) (25 May) so I felt the need to repeat here that he was "too tiring" and "hopeless" to try to convince, it is probably somewhere in me, the intention was to convince yet indeed present, and also levied. all reflection between April 19 (when I take cognizance of the "memorable volume" LN 900) and 30 April, is marked by a state of inner tension, division, too, before the impact of an "event" totally unexpected I try somehow to assimilate the message. This tension finally solved with the note "Return of things" (n ° 73) April 30, when at last reflection came back to my own person to provide me immediately obvious key to this message.

297

14. B) STONE AND GROUNDS

14.2.4. eviction

Note 63

0

(April 22) This Article 23 (*) appeared in publications Mathematics in 1968, so two years p. 232

before I left the world of mathematicians. His starting point was a conjecture which I spoke to Deligne, a spectral sequences degenerate property at that time might seem quite incredible, and which became nevertheless plausible through "arithmetic" as a result of conjectures Weil. This was motivation in itself of great interest because it showed all the advantage to be take a "Yoga weight" implicit in the Weil conjectures (yoga first glimpsed by Serre in some important aspects). From that time I was applying fluent in all kinds of situations like, to draw conclusions nature of "geometric" (for the cohomology of algebraic varieties) from "arithmetic" arguments. These heuristics remain as long as conjectures Weil was not established, but still had a great probative value, and represented a **means of discovery** of the first order. The "geometric" proof of Deligne for the particular conjecture in question, using the Lefschetz theorem (established since then. Only zero) had an interest in a direction quite different, in addition to the first merit not depend on any conjecture. The link qu'on distinguait both approaches between two things that could appear without mutual respect, namely a Besides the Weil conjectures (yoga and weights that in time represented for me the most fascinating aspect) and also the theorem of Lefschetz - this link was itself very informative.

The interesting thing here to present my own, and who appeared to me in all its meaning qu'aujourd'hui, is that the reader of this article will be very little chance of realizing that I was for some thing in the original motivation of the primary outcome, and no chance at all to learn in this article What was the motivation. (See also the beginning of the note (49).) The approach **spontaneous** (including, I am persuaded by the author himself), for the exhibition of a result like that, would have been from Guess (admittedly striking), to indicate the primary reason found, equally striking, which was a good opportunity to "sell" finally this famous yoga weights, a more far-reaching itself

0

that the main result of the work 24 (*); then continue with the view "theorem Lefschetz" 25 (**)
p. 233

that allowed to demonstrate the initial guess in somewhat more general conditions (basic scheme one, not necessarily clean and smooth on a body), but only characteristic zero. The followed position against begins with generalities of homological algebra (all pretty as it is in doubt, and presented with customary elegance with the author), general he had forgotten since as everyone axiomatisation style Lefschetz theorem. The main result (the only course of which all the world remembers) appears as horn. X the middle section, while in "remark 2.9" some

23 (*) This section Deligne on the degeneration of spectral sequences and Lefschetz theorem (mathematical Publications Ticks 35, 1968) cited in note "Weight canned and twelve years of secrecy", n ° 49).

24 (*) This is yoga precisely which remained secret (to me it seems) for the next six years!

(June 7) And (as it appeared from) which was then presented by Deligne "behalf" without referring either to Greenhouse, nor me. (See notes n ° 78₁, 78₂).

25 (**) (June 17) The idea of using the theorem of Lefschetz ("Cow") to demonstrate a degeneration of spectral sequences is due to Blanchard, who does get the degeneration theorem only with the drastic assumption (rarely verified) that the local system formed by rational cohomology fiber is trivial. I knew the work of Blanchard, and have not failed to tell Deligne, which is inspired by the idea of Blanchard for his demonstration, even if he had not read the article. Greenhouse, reminding himself of the demonstration Blanchard better than me, pointed to his Deligne demonstration was actually an easy adaptation of the Blanchard. This is what Deligne noted in his remarks 2.10. This remark, which he cites Serre is yet written in such a way to give the impression that he was not aware of the idea Blanchard after the fact, which is not the case. So there was retraction of the two main **sources** for its Article: first the **motivation** arithmetic, which could predict a considerable strengthening of the result of Blanchard, and secondly **the idea demonstration** Blanchard, happens to adapt gracefully to get a result Blanchard probably had not dared hope for, and why not even try "to have" his method.

298

14.2. My friend Pierre V

hand towards the end (the player does not clear why) the word "weight" and my name are pronounced. . .

I no longer remember the feeling that made me the article when it was published - as I was in the

So, I had to content myself to throw a little quick glance. I certainly have felt an intention

"Distancing", but also feel that it was very natural thing my friend has heart not

risk appearing as a disciple (or "colt") of a "master" ^{26 (***)} It is true that if there had been in him

the quiet assurance

0

in his own strength, he would have had no hesitation to write a work of a scope more p. 234

great and useful for all (including probably to itself) without fear of not being seen for what it

East. . . (65).

The situation was somewhat similar with the publication of his first major work year

Next, the mixed Hodge theory. (So I considered this work as a comparable scope to

Hodge theory itself, seeing it as a starting point for a theory of "coefficients Hodge-

Deligne "which unfortunately never saw the day...") As I said, it was a very obvious thing

for him and for me that this work was his "motivation" in yoga reasons which I had managed

in previous years - it was a first approach to a tangible realization of this yoga. Of

emphasize such a link in his work, it seems to me (and he had also seem to me then) would have immediately given

his work a wider scale still scope than it already had its own merits. In

Meanwhile, it was another opportunity to attract the reader's attention on the reality of patterns, sensitive

each step behind that of Hodge structures (63₁).

It is only with hindsight that these omissions make sense, on the bottom of six years of silence

yoga on weight ²⁷, twelve years of silence (not to say a curse) on the grounds ²⁸, of the season

unusual of these in the volume-burial LN 900 of stagnation in the theory of Hodge-

Deligne after a dazzling start. . . But no one can do great things in terms of

Undertaker !

Anyway, if I had had more maturity at the time of my departure from the IHES in 1970, he would

was clear to me from that moment there was a deep ambiguity vis-à-vis me one who

in five years, had been one of the closest friend. Moreover, behind the friendly facade

good company relations in a hushed same institution, finally arranging my departure

everyone, for reasons that I think I see in retrospect, and which were not the same in all.

Visi

0

ably starting this wonderfully suited my young friend, recently installed in the place, and to which he would p. 235

enough to show solidarity with me (in front of hesitant indifference other three permanent colleagues) to

reverse a fluid situation. If I did not understand then the meaning of what was happening was that decidedly

I did not understand things well enough yet clear and even eloquent! As so often

in my life, then there was in me an anxiety (never called by that name!) who pointed me

"Take-off" between a reality all that was tangible and simple, and a picture of reality which I

^{26 (***)} (May 26) On this attitude with me, see the note following this one, "The Ascension" (n ° 63 ©)

(June 8) In making the comparison with a style all his own of **appropriation** of other people's ideas, I see here

the first typical example, I realize also that the motivation of my friend was by no means the preserve

a "self" versus a "master" prestigious, but to retract the role of ideas of others in the genesis of

his, waiting to also capture these ideas of others (secondly). (See the two notes about "The

Conjurer "and" Ownership and contempt ", n ° 75 and 59 On my share of responsibility in development without hindrance to this propensity in my friend see the two notes "Climbing" and "ambiguity" and "Being apart" (n ° 63 © 63 ©67) which appears the role of complacency which I have demonstrated vis-à-vis the brilliant young man Deligne. 27 (*) (19 April 1985) For corrections regarding the "six" and "twelve", see note b. p. (***) p. 302 (dated part April 18, 1985), for weight.

28 (*) (19 April 1985) For corrections regarding the "six" and "twelve", see sub-note "Pre-exhumation" (n ° 168 1) for the reasons.

299

14. B) STONE AND GROUNDS

wanted to separate me the image of what had been my role in the institution that I was leaving, and more, Perhaps the image of what had been the relationship with my friend. It is this refusal to take notice of a reality irrefutable, and anguish sign of contradiction to which I clung, that made this episode "salutary wrenching" painful blow on the 29 (*).

Actually, not having never even spent a written reflection on this relationship (except some primers reflection in episodic few letters to my friend, none of which received echo. . .), I was not me made earlier account that the first signs (discrete of course, but who can not deceive) the ambitions valence in the relationship my friend of mine, dating back at least to 1968, so two years before "The watershed ". It was a time when the relationship seemed to be perfect, a cloudless communion the mathematical level, in the context of a simple and affectionate friendship. One beautiful game will blow persifler beautiful "slices" of innocence, the creative child and the rest!

Yet, I know that this communion was a **reality** , not an illusion; like this

"Delicate thing" was a reality - this creative force, whose work ensuing gives a pale re-flounder. "Innocence" and "conflict" are two tangible realities, recognizable perception so slightly awake, not concepts; and they seem to me by foreign kind to each other, one excluding the other.

Yet there is no doubt that these two realities coexist in the relationship of my friend to me, for different levels 30 (**). It does not appear that at the time of which I speak here, "the conflict" interfere with creativity mathematics - at least not in work

0

done in solitude, or the one that was in talks

p. 236

face to face. It is also true that in the two articles which I have just mentioned, which after all are among the most tangible fruits of this work, the imprint of the "conflict" is already clear. And with the decline fifteen years and thus reflection of the days and weeks passed, I see that footprint (discreet is-it) precedes strikingly going to take the particular form this progressive grip of conflict on the initial momentum, stripping it over the years of his most rare essence - that which makes the great destinies (*).

Score 63 1

(May 26) Compare also the remark in footnote 31 (*) at the end of footnote 60, noting the "Blocking" of the natural development of the theory of Hodge-Deligne, following attitudes vis-à-vis rejection some key ideas introduced by me (here, les six operations - which the patterns are indissolubly related), of the same nature as those examined here so apparent from the publication of Hodge Theory I and II.

The same attitude, endeavoring wherever possible (and beyond!) To erase all traces of my influence is also found in the work (mentioned in note ° 47) written in collaboration with Mumford, the compactification Mumford-Deligne modular multiplicities. (This work is Also prior to my departure.) The work uses a principle of topological results on passage

29 (*) See about this episode footnote ° 42.

30 (**) In two or three other occasions, I have seen such coexistence in one person at one time, there including in my own person at times.

31 (*) A noble lyrical I lost a little contact with the mundane realities. If I describe here the "fingerprint" of "discrete" is that I myself am bundled up in thick, I have a hard time separating me from my remaining blinders dear! Having finally get rid of, I realize that the "footprint" in question is a coarse retraction, I have not want to see complacency in me, which I clearly do realize in the note of June 1 "L" ambiguity " n ° 63 ". As for" the influence of the conflict on the initial momentum "my brilliant young friend, I talk almost like an unfortunate

inevitability that the poor would be the involuntary victim, losing at the same time, unfortunately, the benefit of the "great destiny". However

he is responsible for his fate just as I am of mine. He chose from before my departure gravedigger of the role of its master (to start), and if the circumstances (including the spirit of the time) were conducive to this choice, giving him the galore

role of Big Boss in which all shots are allowed, he also chose to taste the dregs of the privileges and prestige power can give, including crushing (quietly) and plunder. We can not have everything at once, and it is in the nature of things that loses this election (in which he is in good company) earnings much more delicate and less

14.2. My friend Pierre V

the body C (known transcendent way) to the results bus. $p > 0$, which I introduced in the late fifties,

0

for the fundamental group theory. From the beginning of the sixties, I suggested p. 237 to use this method to prove the connection modular varieties all feature 32 (*). This idea, however, ran into technical difficulties that had stopped Mumford, who were overcome elegantly in their work by the introduction of **multiplicities** modular, and a "compactification" of these that has perfect properties. The idea of modular multiplicities is "between the lines" at least in my presentations "Teichmüller" the seminar Cartan, made at a time when the language sites and topos did not yet exist. The same language used by Deligne ("algebraic stack") where there was whole language sites, topos, custom multiplicities to express this situation shows quite clearly (in hindsight and in the light much larger future "operations") intent to erase from some of the main ideas implemented in this brilliant work. It is this attitude surely (as I sense the first in the rating "Denial of inheritance - or price of a contradiction", n ° 47) that had a "chainsaw effect", cutting off further reflection on modular multiplicities, which nevertheless appear to me to be among the finest and most fundamental of all "concrete" mathematical objects released to date.

Incidentally, the arguments that I introduced in the late fifties allow

(Due to the compactification Mumford-Deligne) not only to prove the connection between the multiplicity modular in any characteristic, but also to determine their "fundamental group first to p", as being the "first profinite compactification p" regular Teichmüller group.

14.2.5. The ascent

Note 63

(May 10) with an additional decline of less than three weeks, I went to this account this attitude which wanted "comprehensive" in relation to this intention "very natural" to take his distances, was actually a lack of foresight and complacency vis-à-vis my brilliant young friend. If I had then relied on my healthy faculties of perception, instead of letting myself be dazzled and give me exchange by clichés waves posing in attitude "understanding" or even "generosity" ("I will still not make her remarks because he did not ride my name hairpin ..."), I would have then look at what I see now, sixteen years later. I could call it a lack of integrity vis-à-vis the reader, vis-a-vis me and vis-à-vis itself. Seeing things simply and without fear the

0

call by name, I would have been able to talk just as I am now, and my p. 238

Friend then had the opportunity to take a leaf - or at least he would have understood that even with the means that are his, his elders (or at least one of them) expected him the same honesty in the work that they put themselves there. So I see that in this occasion, which is placed before I left the mathematical scene at a time so I was in no way "out of play" and which I exercised probably a moral influence on my young friend, I have not been up to my responsibility vis-à-vis him, by this **laxity** of which I showed then 33 (*). This was confirmed when publishing of "Theory of Hodge II", which is the thesis of Deligne and where it refers neither the grounds nor me. It is true that at that time already mathematics and the person of my friend were far and appeared to me as through a fog!

32 (*) (September 1984) audit conducted, this circumstance is signaled indeed mentioned in the introduction to work (p. 75).

33 (*) (May 28) The word "complacency" best expressed by the nature of my attitude, that the word a bit elusive "laxity". This complacent in my relationship with my young; brilliant friend came to me more clearly in the reflection of yesterday, see note "Being apart", n ° 67.

301

14. B) STONE AND GROUNDS

In the light of what I have seen in the evolution of my friend, spiritual and mathematical as (and the two are closely bound), I see that when I did meet him, and when I was impressed by his intellectual, by his acuity of vision and understanding of liveliness math, I do not discerned a lack of maturity in him; or (later) the effects that went carry their vertiginous social rise, in the space of just four years, the student status unknown Featured than the mathematical world and tenured professor, invested privilege and power

considerable, in an already prestigious institution. I do not regret for having facilitated the rise and have made faster - but I find that lack of discernment and maturity in myself. This "Service" that I paid him was not one. It has not been a "service", as long as at least my friend himself has been through with this crop there, it is prepared with my audience carefree

14.2.6. Ambiguity

Note 63 "

(June 1) In the three weeks since what appeared this finding of "laxity" (or "com-pleasure", to use the more appropriate phrase appeared in the meantime) in my relationship to my friend Peter, I have had the opportunity in my thinking to make myself more clearly account of a lack of rigor of complacency in me. They were manifested in my first relationship one more I treated as any other to "be apart," but also to other mathematicians for which I was face elder. What I detected

0

so far in this direction is expressed by a certain ambiguity in me, and without

p. 239

probably also the one who made figure rises, in situations where it resumed its consideration of ideas and methods he held me, even a detailed contractor for any work he did, without indicating clearly its source or even sometimes allude to. Such situations were also frequent enough well in the sixties, after my departure and until the last few years. It seems to me that in all these situations, on some level I felt ambiguity, which was expressed in a shadow malaise, never considered before all these days. The motivation that made me get in the game a some connivance, and that made me go over this malaise without paying attention to him, was in concern for me **conform** to a certain image I had of myself, and what was to be a so-called "generosity". True generosity is not born of a conformist, a desire to be (and look, and ahead others) "generous". The discomfort was repressed whenever a clear sign that this "generosity" was dummy, it was an **attitude**, not a spontaneous gift, without reservation true generosity.

In this discomfort I award two different origin components. One comes from the "boss", the "me" who remains frustrated because he has earned both both ways: participating credit for work he knows that there has been a (more or less wide) side and at the same time to live up to a certain image brand, which contains (among many other things) the label-cliché "generosity". The other component has "Child," from that in me which is not fooled attitudes and facades, and that the simple feeling that this situation has forged ³⁴ (*). Not only false vis-à-vis myself, but also

0

vis-à-vis the other.

p. 240

³⁴ (*) (June 5) When I say here that the discomfort is (part) of the "child" is a way of speaking that misrepresents of reality. This is not the naive perception of a false situation that creates any discomfort. The discomfort is a sign a **resistance** against this perception, a takeoff between indeed perceived reality to a certain level (here that of a false position), and a **picture** of the reality to which I cling (in this case, that I am being "generous" and I can not do less!), the benefit of which I **reject**, I repress the inappropriate perception. In this case, as soon I give up the resistance and allow the perception of appearing in the conscious next to the field, the "malaise" ceased in together with the false position. I was going to add "assuming that this is a false situation involving my present, and not a situation lying in the past. "But on reflection, I realize that these false situations" the past", which I just mentioned, this remained as such until today, or at least until the reflection of it three days ago,

302

14.2. My friend Pierre V

In short, my "generosity" was to go into a game where the other has as his own ideas it just another, so that it gives a picture of himself and a certain reality, he and I both know well that it is false. We are united in what can be called a "cheating", where each, he and I, found his account. It is a "cheating" at least according to the consensus that prevailed "in my time" and that, to me it seems, still continue to be the tip of professed lips. Surely I would not be entered in such a game it had been ideas of another as myself, who are used as if they had been found by my "protected" ³⁵ (*). Yet the fact that I give my consent implied that the ideas generated in me are presented as those of others, does not change anything essential, he I think, the nature of the thing - the only difference is that in this case we are two to cheat, instead it there be only. Even apart from this aspect about myself (which I myself participated even cheating, in conduct contrary to the same consensus which I intend to join), it is clear that there is no generosity to encourage others to cheating (even if it seems to be make our own expense - this is however not the case), or at least an ambiguous attitude against a consensus also pretends to join, while the contravention. Real generosity is

beneficent nature to everyone, starting with the one in whom it manifests itself and those to whom it is addressed. My ambiguous attitude, provoking or encouraging any ambiguity in others, and allowing me to ask the "Generosity" so that, logically, the other should appear as a little cheat on the edges (and that the fact we cheat either) - this attitude is a blessing neither for me nor for the other. It was enough to examine the thing for the evidence to appear, without having to refer to a former experience, an "Event lesson." Yet these are the events that eventually led me to this exam, making me finally discover evidence that I was also able to discover there are thirty

0
years, p. 241

even before a student is appeared on the horizon to teach me a trade, and soak in my contact with a certain spirit in the exercise of this profession. I had occasion to speak of the "rigor" in the work Also, I think I demonstrated (see "Discipline and rigor", n ° 26). But now I see Also, outside of "work" itself, a lack of rigor, speaking by ambiguity, by complacency that I said. It seems to me that this ambiguity in me I have not been mentioned by any my elders, who (I think) all had in me a similar requirement to the one they had vis-à screw themselves. Beyond the ambiguity of the particular attitude, I detect an ambiguity in my person Also, I had occasion to speak more than once during the first part of Crops and Seeds. This ambiguity began to be solved with the discovery of meditation in 1976, while some signs of this ambiguity, speaking in become habitual attitudes and behaviors (including in my relationship with my students) had to persist until today.

Obviously this ambiguity in me has found fertile ground in some of my students. What had made by tacit agreement has even become, it seems, a base note in the manners of the "big world" mathematical today, where fish in troubled water (with or without the agreement of "the person"), see looting in order (as that which allows part of the elite intangible), seem to have become so common more no one seems to be surprised, so that everyone is careful to talk about. The "boss" in me the mere fact of never having been examined and thereby resolved. I am still a prisoner, to the point of reproducing mechanically the same situations as soon as the opportunity arose. The knowledge of my "power" of meditation (which I mentioned in the Section "Desire and meditation", n ° 36) then served me anything, failing to pay attention daily to situations where I am involved, and the incessant game of perception and the "tri" perceptions, this game the child and the boss silencing. . . 35 (*) The expression "my protege," had used one of my former students to refer to one of my students from the moment had to make great things in mathematics, made me cringe. However, the situation of ambiguity that I am examining, on balance, establishes a false relationship in which one of the two protagonists did indeed figure "Protected" on the other.

303

14. B) STONE AND GROUNDS

would love to stand out, denouncing offended - yet doing so, I only perpetuate the same ambiguity in me that I can see the prolific harvest today.

14.2.7. the gossip

Note 63 "

(April 24) ³⁶ (*) Thumbing it two days ago reprints of Mebkhout that I had just received, I came across a reference to a work JL Verdier entitled "Derived Categories, State 0" appeared in APG 4 1

2

(Lecture Notes n ° 569, p. 262-311). I am excusable for not having seen earlier this publication, having never before had the honor today to hold this volume in his hands, which Verdier nor Deligne (who is the author)

0

have seen fit to send me a copy to its publication or later.

p. 242

I do not know whether C. and R. Chevalley Godement, which to me were the jury that awarded the JL Verdier title "Doctor of Science" on the basis of a 17-page introduction (still unpublished), were treated them ten years later to receive "State 0" (50 pages this time) this "thesis" like no other! I seem to remember having held hands one day work seriously foundations of several hundred pages, which could reasonably be a good doctoral thesis, which corresponded roughly to work foundations I proposed to Verdier 1960 - except that it had already become clear at this time that part of the "triangulated categories" developed by him (to express the internal structure of categories derived) was insufficient.

It is hardly necessary to say that my name does not appear anywhere in this "state 0" of a thesis. We are wondering although in fact it would do there. It is well known that the derived classes were introduced by Verdier, to enable it to develop the so-called duality "Poincaré-Verdier" topological spaces,

and the so-called "Greenhouse-Verdier" analytical areas until an unknown wave service 37 (*) develops its behalf a synthesis of the two, known as fair (the student could Unknown do less!) "Poincaré duality-Serre-Verdier." After all that, I just had to follow suit and make some adjustments that were needed to develop the Poincaré duality-Verdier and that Serre-Verdier in the very specific context of my faith étale or consistent patterns. . .

I just sometimes just to read (useful libraries!) SGA 4 1

2

38 (**), where

it made me even the honor of making me appear as co-author, or rather as a "collaborator" (sic) of Deligne (without judging myself useful to inform and consult me even less). This is obviously a precursor memorable "funeral volume" published five years later, I had the pleasure to acquaint just a few days (see notes n ° 50, 51 and following, inspired by the event). But I did not have to hold hands the pre-funeral volume, with this exhibit a ghost thesis that dare not speak its name, to understand from last year that the next state of this "thesis" will never be written by someone other than myself. So I set out to work with the **Continued**

0

Fields where

p. 243

it had pleased my former student shows to stop, there this seventeen.

36 (*) This note is from a footnote to page "The instinct and fashion - or the law of the strongest" (n ° 48) - note in which I stated that Verdier work on derived classes had never been published, without realizing that a "State 0" of his thesis was published in 1977. For an overview strange twirling Verdier view in relation to the theory that was supposed to be working thesis, see note "credit Thesis and comprehensive insurance © n ° 81.

37 (*) See note "The unknown service and the theorem of God" for some information on the dubious character (note ° 48 ©

38 (**) see on this volume, the note "The clean slate", n ° 67.

304

14.2. My friend Pierre V

14.2.8. The inauguration

Note 64 (April 25) I found yesterday in yet a copy in my office at the college. This is actually two reports which follow a year away, written in April (?) 1968 and April 1969. I reviewed, in seventeen pages, fifteen works, pursued for three years of scientific activity in IHES. Among them - this, there is the work on the conjecture Ramanuyam, one on the compactification modular sites and the extension of the theory of Hodge. All work reviewed in this report (even if that by the only work that I have mentioned) shows a prodigious creativity, unfolding with perfect ease, as if in play. Leaving aside the proof of the Weil conjectures, in stride yet this first launched into the unknown, it seems to me that the work later gives an pale image of that single flight of a young mind with exceptional means, and enjoying conditions exceptional also for its fulfillment. We must believe, however, that something in these "Terms Exceptional" had to give food to this other force, foreign to the knowledge drive, which ended by investing and supplant it and divert and absorb the initial momentum. And obviously, too, "some thing" was related to my person... 39 (*)

This short report commented (which I think included in the appendix to this volume) seems interesting in many respects, including the mathematical point of view (although some of the work reviewed remain unpublished to this day). In several places the report I foresee that such work which Deligne was content to sketch the outline and deal with crucial points would be developed by future students. These students have never appeared, saw the changes that have occurred subsequently in its relationship to ordinary 40 (**)

0

knowledge p. 244

which was developed by someone else (which would thus figure student Deligne) was the theory the cohomological descent, developed by Saint Donat in SGA 4 (thus still in the period of momentum original) theory has since become one of the most commonly used tools in the arsenal cohomological.

Amusing detail and characteristic, for three of the four works that have been the subject of articles Deligne 41 (*), I take care affecting felt, by the way, the relationship of this work to the ideas

I was introduced to the questions I had raised - as if to take the lead, it seems, on the

Silence the author was going to do about them in articles (each of which was published nor, I think, written, when I was doing the report).

14.2.9. The knot

Note 65 (April 26) It is also clear that to keep written before itself a "yoga" of large-scale (that of weight, and beyond, one of the reasons), which I had spoken well here and there to other than him, but he alone

39 (*) (May 26) On a certain complacency in me which gave food to "something", see note (later of two weeks in this note) "The Ascension" (n ° 63 ☺)

40 (**) For the time when I regularly hung around at IHES (in my seminar in particular)) Deligne's relations with other mathematicians, particularly young researchers (often beginners) who came to the seminar were marked kindness. I noticed the same openness to the thoughts of others, even if it awkward to speak confused to see that in our head to head math. He had the ability to follow the thoughts of others in the images and the language of the other, which I always lacked, and which (I think) the more predisposed me to the role of "master", able to stimulate the development a vocation, creativity in others.

41 (*) The only four works in question is not directly influenced by me is the work on the conjecture of Ramanujan, deducting the Weil conjectures. It is located in a search direction (the modular forms) that was one of the "holes" in my most serious mathematics. The other three works are those on dégénérescence of the Leray spectral sequence, on the theory of Hodge-Deligne, and the modular multiplicities (with Mumford), which was mentioned in the note "Eviction" (n ° 63) and the sub-grade n ° 63 1 .

305

14. B) STONE AND GROUNDS

have assimilated thoroughly and grasp its scope, gave him a "superiority" additional, as exclusive holder of an incomparable instrument of discovery for an understanding of the cohomology algebraic varieties. I do not think, however, that this temptation has played a key role at a time when I was still all there was to present and active in the mathematical world, and nothing left predict my departure sine die. She had to appear with or after I left, which was "an opportunity" unexpected to seize an inheritance (which, however, was his by right!), hiding and inheritance, and its source.

It is here that I see again be in an extreme case and particularly brilliant, note a profound contradiction, which far exceeds any case. I would bet of ignorance, disdain, doubt deeply buried around the creative force based in our own person - this legacy unique and a greater price than everything a person could ever convey. It is this ignorance, this insidious alienation

0

what is the most valuable, the rarest in us, which we can

p. 245

envy the perceived strength in others, and covet for ourselves fruits and external signs of this force in the other we have forgotten ourselves. Provided that this desire, this desire to **supplant** take root and finds occasion to proliferate, it channels the energy available for creative fulfillment, alienation in us is deeper, moved permanently. The more we approach the "goal" coveted supplant, oust, to dazzle, the more we move away and we cut this delicate strength in us, and coupons wings to our own creative impulse. In our relentless effort to raise us since we long forgotten to fly, and we are made to fly.

In his relationship to me, since the day we met, I felt my friend perfectly comfortable without any signs that could have made me suspect that he was the least impressed or amazed by my reputation or myself, or there is some doubt in him unexpressed, either about his gifts and faculties in the field of mathematics or any other subject. It is also true, I think, he had received by me in the middle and that was mine, including also in my family, a friendly welcome and affectionate, which was likely to put him at ease. But this simple natural and seemingly without problems attracted me to him as it drew others surely did not expect this meeting to occur and blossom. The impression exuded his person and that made her so endearing was that of a balance harmonious, where his penchant for mathematics did not include any figure of a devouring goddess. Next to him, I was a little "polard" unrepentant if not "gross thick" - and I remember discreet surprise at my lack of deep contact with nature around me and the pace of seasons, I crossed without seeing anything much to say. . .

Yet this "doubt" deeper than I would have been unable to perceive then (or perhaps even aujour-

to-day, placed in similar circumstances), had to be present in my friend long before we met.

Looking back, I see the first sign clearly from the year 1968 and other clearest signs yet all the years that followed 42 (*). These are "indirect" signs yet - none of those I could observe first hand was in the form of a doubt, a lack of insurance - rather, and growing over the years by what may appear to the opposite: a requisite, a

0

deliberate disdain,

p. 246

even contempt. But such an "opposite" reveals its vis-à-vis, with which it forms pair and which is the shade.

I also learned through intermediaries for such prestigious mathematician (and deemed inconvenient)

he had not had the chance to ever meet familiarly, he was in great tension

the expectation of a meeting, in a kind of irrational fear of not being considered by the great

man as equal to his own greatness. This testimony was so much the opposite of what I had myself have seen in my young friend, that I had to believe may then (this was in 1973). Looking back, it 42 (*) (May 10) In fact, another sign "very clear" goes back to 1966, see footnote on page (*) in footnote ° 82 (p. 329). 306

14.2. My friend Pierre V

Yet intersects division marks which are known by me elsewhere and that all point in the same direction. This division and the role I was playing as a kind of fixer of a conflict that left no doubt diffuse before we met, probably would have remained hidden under usual circumstances of changes a relationship with someone who was (in one direction or another) a "master", or at least someone which transmits or entrusts. So my departure has been the **revealing** of a conflict ignored by all, and I@ perhaps the only one to know.

And my "return" is now a second developer, most likely accidental. I would not be able imagine what he shows me, beyond what he taught me now on my own past and my present, and beings that I loved and which I still linked today. Or it prove to one who for a week has been the focus of this final stage of my reflection, I had called the month last (and I do not think so right...) "**weight of the past** ."

14.2.10. two rotating

Note 66 (April 25) This deliberate disdain and antagonism in the relationship of my friend Pierre to me limited itself exclusively to mathematics and professional level. The personal relationship remained up now a relationship of affection and friendly respect, occurring more than once by the attentions delicate that affected me, surely signs of true feelings and without a second thought.

In the intense years since I left the IHES, it ended up being forgotten, as long misunderstood the teaching that brought me this episode. Also, for more than ten years yet, my friend remained for me (as a matter of course) my interlocutor in mathematical ticks; or more precisely, it was between 1970 and 1981 the only interlocutor (an episode about) that I dream to speak during periods of my ac

0

sporadic mathematical tivity, when the need for p. 247 interlocutor was felt.

It is also, as the mathematician closest to me that I addressed equally spontaneously in the first opportunities (between 1975 and 1978) where I had to ask for help, support or bail for students working with me. The first of these occasions was the defense of the thesis of Ms. Sinh in 1975, she had prepared in Vietnam in exceptionally difficult conditions. It was the First I have contacted to serve on the thesis committee. He recused himself, suggesting he could be where a bogus argument, to which it was no question that he brings his bail. (I got the address Yet reaching circumvent good faith Cartan, Schwartz, Deny and Zisman to lend me a hand for this deception - and the defense took place in an atmosphere of interest and warm sympathy). It took three or four experiments of the same kind in the subsequent three years before I eventually understand that there was in my prestigious and influential friend a deliberate antagonism vis-a-vis my students "post-1970", as also with regard to work only bear the mark of my influence (At least those undertaken "after 1970"). I do not know if attitudes manifest contempt I have seen in many of these opportunities are also found more or less in its relation to other mathematicians that considers far below him. The very spirit of a certain elitism that excessive honors profess makes me assume so. Still, that since 1978 I have refrained from speaking to him for anything. That did not stop its power to deter has found occasion yet to manifest effectively.

It was around the same year as that appeared the first signs discreet of all, an attitude disdain vis-a-vis my own mathematical activity. The first occasion was my reflection on the cards cell after a discovery about them that had me flabbergasted (see on this: Sketch of a Program 307

14. B) STONE AND GROUNDS

by. 3 "Body numbers associated with a child@drawing"). This discovery (admittedly "trivial" and who had nothing to excite or even interest my friend prestigious) was the starting point and the first material this other **dream** mathematics, of dimensions comparable to that memorandum, which began to take shape just three years later (January to June 1981), with "The Long March through Galois theory". These notes and other of the same period (in the two thousand handwritten pages) are a first tour through this "new continent" a trivial remark on a child@drawing had made me see.

0

During this intense work, I est@rrivé two or three times to write to my friend, to inform him of
p. 248

some of my ideas, and submit questions on the occasion of a technical nature. When it pleased him to speak about my questions, his comments were always as clear and relevant, and showed the same "means" who had impressed me already in his young age. But sufficiency had blunted this eagerness to understand who had enchanted me then, and this right also to understand the great things through things "small", such as to understand or design great designs, listening to each others. This power that is not of the order of the intellect, a simple "efficiency" or a "control" of an already constituted discipline or known techniques. It reflects, at intellect, a thing other than gasoline -to him this **wonder gift** for the child. This gift in him seemed off, as if he had never been. So it was at least in his relationship to me, after he had been the first in his relationship with my students "after". He had become an important man, and his mathematical approach had become neither more nor less that this attitude "sporty" I examined for the first time there is a month or two ago, and which myself have not been abroad. . . Maybe I would have managed to make me a reason for the apparent lack of passion in this communion common, this deep bond that had connected us once. I@be satisfied, no doubt, to submit (When the opportunity arose) matters more or less technical or simple requests for information to the trick from my friend, and his vast knowledge of the world of mathematical things. But this year (1981) the signs of this disdain disease have suddenly made so brutal 43 (*), I lost everything interest in communicating with him again on mathematical issues, even occasionally. (⇒ 67)

14.2.11. Clean slate

Note 67 (April 26) This is by writing the above lines, yesterday I made the connection between this turning point in our relations and the publication in 1982 (thus practically at this turning draconien) of "remarkable volume" reading notes, devoting my mathematical funeral without flowers or crowns! While I was ordained as "dead" mathematically, it was a kind of grace in short my friend made me continue here and there still answer math questions, basically, had no place to be. . .

0

Trying to put myself listening to the meaning of events, I feel that this is not a happy.
p. 249

Sardinian if the first appearance of disdain, a mathematical disinterest (things overlooked, moreover, that its "Healthy instinct" mathematical had to tell her they were hot and juicy), in its relation to my own person at least, stands roughly around the time of the publication of the volume of pre-burial SGA

4 1

2

Five years before 44 (*). The circumstances already surrounding the publication of this volume attest to them 43 (*) (28 May) for a new lighting of the second turn, see the note "The Perversity" n ° 76.

44 (*) See note on the subject "The comrade" (n ° 63 ") of the days before it.

(June 5) The reflection of this note is included in this note and the following three ("The clean slate", "Being apart", "Fire green ", " Reversal "), which foresee the sense of" APG 4 operation 1

2 "and its link to the" dismantling "of mother-seminar

SGA 5. This thought is repeated again in the procession "My students" and in particular to as "My students (1) - (7)" or gradually reveals a picture of a massacre of the seminar where my cohomologistes students learned their craft.

308

14.2. My friend Pierre V

only a willfully disdain, discreet and ostentatif both. Merely introduce myself as "col-laborateur "Deligne, without deigning to consult me or even informing me, and taking care not to make me send a copy, seems itself an eloquent speech. Besides this book

Deligne was meant, in essence, make them more accessible to a wide audience the work I had developed over fifteen years ago, at a time when I had not heard even pronounce the name of my brilliant friend! Disdain, and subsequently arrogance, had to be fed, firstly by my absenteeism which meant that I was aware of nothing and me "encaissais" in fact without knowing but then also by a climate that made this kind of nonsense could "pass" without apparently arouse any comment Still, I have received no response from anyone (especially among the many friends I thought I still have in the world of mathematicians) on this volume, nor about the volume funeral-he has prepared.

0

In the introduction, the author there is indeed no punches to announce the color. The purpose p. 250 the volume is to avoid the non-expert "the use of exposed bushy SGA and SGA 4 5", "to prune unnecessary details, "" allow the user to forget SGA 5, we may consider a series of digressions, some very interesting "(how nice anyway for these" digressions "!). The existence of

"Soon will publish the SGA 5 as is" - mysterious assertion because one wonders What this publication (something we advise to forget) that had already dragged on for a dozen years, and presented a set of perfectly consistent results (and who did not Deligne expected to be released and proved) could be subject to the existence of SGA4 1

(*)).

By asking the question, I also foresee a simple answer, and a possible explanation of the vicissitudes this poor seminary SGA 5 (68) (which I had developed extensively in 1965/66, eleven years before the SGA publication of Volume 4 1

Deligne) 45 (*). Ear We already see the dawn when it is said (page 2) in the original version of SGA 5 "formula Lefschetz-Verdier was established only by conjecture" (that cow which is to Verdier, which is believed to have demonstrated a theorem, which is prior to SGA 5 46 (**)) and that "more local terms were not calculated." This may seem a regrettable gap for the non-expert reader (which is addressed first this volume). The somewhat in the game player knows, him that such local terms are still not "calculated" today, and the brilliant and compelling author himself would be hard if he asked him what he meant in this case (in general) by "search" 47 (***) (but apparently nobody has thought to ask this indiscreet question). An ambiguous phrase "seminar (?) Contains another dice

demonstration, complete it, if par- p. 251 ticular the Frobenius morphism "seems to suggest that SGA 5 does not give (it would have suspected, for Throughout this operation lasts a casual contempt, the "discreet disdain" (which I have seen the appearance around the same time), in the relationship of my friend to me, was just a pale reflection.

Another association came to me there a week or two, for now this "first turn" in relationship My friend of mine, end of 1977 or current 1978. It was in 1978 that my friend had "the medal" well-deserved (for demonstration the Weil conjecture). The way this new title (related to the demonstration of a conjecture "of proverbial difficulty") was internalized by my friend, appears strikingly in the Eulogy Funeral (about my deceased) and counter part (on his own), it is true published just five years later in a "great opportunity". On this subject the note "In Praise of Death (1) - or compliments," n ° 104.

45 (*) See note footer (April 28) in note "Green light" (n ° 68) for an elucidation of this "mystery".

46 (**) (June 10) See, for details about the sub-footnote ° (87) of the note "massacre" n ° 87.

47 (***) (Jun 10) In the general formula Lefschetz-Verdier, for a cohomology correspondence between a beam coefficients and himself, "local terms" (corresponding to the connected components of the set of fixed points) are defined unambiguously thereby to write the formula. The issue of "calculation" of these local terms only takes precise meaning in that case, one of the simplest is that of the Frobenius morphism, where they are given simply by ordinary traces induced endomorphisms on the fibers at these points. This formula was fully demonstrated in Oral seminar as a special case of another much more general.

14. B) STONE AND GROUNDS

volume digressions!) at the end of ends, a full demonstration of the "result" that main an-nuncio, a trace formula thus involving rational functions L Weil; Fortunately that "it seminar "comes to save, better late than never, a very compromised situation...

On page 4, we learn that the purpose of the exposed "Arcata" was "to give the demonstrations fundamental theorems in étale, freed from gangue non-sense 48 (*) around them

SGA 4 in. "He@charity does not extend over this unfortunate nonsense plaguing SGA 4 (such topos and similar horrors - the reader can boast of having dodged the appearance providential

This brilliant volume, finally making a clean sweep of the unfortunate "matrix" that preceded it. . .) (67) (67 1).

Walking through the instant introduction to the volume and introductions to its various chapters, I re-product appraisals and statements of intent that seem most clearly announce the color, among two or three other (style digressions, certainly, but "interesting") which appear for me especially to "sweeten the pill" (which indeed happened without problem). Thus, the author has the honesty to say clearly at the beginning that "for complete results and detailed demonstrations, SGA 4 remains indispen-sand. "This volume, while it is ambiguous in his mind and in his motives, is not akin to a operation scam 49 (**). Its role seems that of a straw poll, apparently concluding, he there was no real place for so much trouble!

There is a kind of **escalating absurdity** (apparently unnoticed by all!) Of a volume as it

p. 252

prepared (SGA 4 1

2

And LN 900). In both, we see a man with impressive means, made to discover and browse and probing vast worlds, seek to "redo" the work of a predecessor, myself even first, an alumnus of me (Saavedra) Then, while doing so he had nothing essential to bring the work of these predecessors, which were made with care and going to the bottom of things. (This that brought the total could be exposed in some twenty or thirty pages I think.) In the first cases, the reason given was plausible: allow the non-expert user access without tears cohomology spread 50 (*), without having to support large seminars SGA SGA 4 and 5. (This is the first time yet seen from the author such a concern for the common man, here taking precedence over pleasure do math. . .) The second time the job was practically **copy** essentially the thesis Saavedra had made with me! This thesis was a perfect reference, and that the demonstration a statement there was false and another statement contained an unnecessary hypothesis was certainly not the reason to rewrite the whole article. Of course, no "reason" was given for such a strange thing.

48 (*) The accepted term in English "general non-sense" (in the sense generalities sometimes painful but often necessary) had not "my time" pejorative, rather a little good-natured and blagueuse It is no coincidence that surely qualifier dedicated "general" was here "forgotten" so to say "no sense", which means nothing less than nonsense in good French, and suggests the idea of bombinage of "bullshit".

49 (**) (May 26) However, see note two days later, "Reversal" (n ° 68 ☺) where I come back to this impression, which proves Early = In the following reflection, gradually reveals a major operation "SGA4 1

2 - SGA 5 "that is made,

for the "benefit" of Deligne mainly with the help or the tacit agreement of all my students "cohomologistes," "Honesty" I think I can see (on the basis of the statement, on line 7 of the introduction, which has been cited), plays the role of "line-control" designed to deceive, in the purest style "go!" My friend used this style in 1968 (see "Weight canned and twelve years of secrecy, "and" The eviction ", notes n ° 49 and 63). See also the notes "Go! "and" The dress of the Emperor

China ", n ° 77 and 77 ☺.

50 (*) (10 June) In writing this note I "disembarked" barely felt and not yet had the true meaning of "SGA operation 4 1 2 ☺and

its connection with the vicissitudes of SGA 5, which I had only to have a sudden prescience). I understood from the motley collection of texts published under the misleading name of SGA 4 1

2 (see note "Reversal", n ° 68 ☺is removed

not as a popular book ("without tears") seminar SGA SGA 4 and 5 (which is the heart of my mathematical published work) but it is a move to replace it (making a precursor a little mud on the banks) and to appear as the true masterpiece on the étale, which is due to Deligne. For a striking formulation (a pen remained anonymous) of such fraud, six years after the "kick probe "named SGA 4 1

2 , see "In Praise of Death (1) - or compliments" (note ° 104).

310

14.2. My friend Pierre V

I have not yet had to hold hands SGA 4 1

2

To feel the sense of this thing in appearance absurd Deligne "remaking" the thesis of Saavedra, ten years later! This is surely the same as the direction of this thing hardly less absurd that had prepared: Deligne making (twelve years later) a "digest" (a condescending at the edges), in a certain part of the published work Grothendieck. This is the part just that it can in no way pretend to happen, if indeed he continues to be interested ☺ cohomology of algebraic varieties (which he manages to come off). And the thesis is the work of Saavedra among all published and branded my influence, he can not in any case happen if he wants resume "own account" the No.

0

tion group of motivic Galois I had ☺eveloped, and finally exploit p. 253 (fifteen years later!) this concept obviously crucial. By writing SGA 4 1

2

First, and five years

later by Milne-Deligne-river section (aka Saavedra) in LN 900, my friend☺good pleasure to give a false sense of liberation from something he certainly felt as painful

obligation: having to constantly refer to the same one that comes to supplant and deny, or even just than another which refers to him.

In reaching this inner conviction on common sense to these two acts "absurd", points were

I need all traverses (fifty one) publications prolific my friend, which I have received (First) list there are ten days. To be honest, I have not even thought to go to new four reprints in my possession 51 (*), to seek confirmation that I understand. If in the future it still happen to see the work of my friend, it will be to find something other than what which to me is already sufficiently known elsewhere. Surely I will have fun while learning the beautiful things mathematics, than before I had the pleasure even greater learning oral and mouth!

Score 67 1

(1) (June 14) I noted two other micro scams (retail) in SGA 4 1

2

. One in the "Fil

Ariane 4 for SGA, SGA4 1

2

SGA 5 "(admire the suggestive away!), Where the author writes (p. 2) to establish étale in a "duality formalism similar to that of the coherent Grothendieck duality ... used the resolution of singularities and the conjecture of purity ", giving the impression that this formalism is ultimately established by it, Deligne, in case (sufficient for many applications) patterns of finite type over a regular pattern of size 0 or 1 (see the same paragraph). He knows that the formalism six variances (thus the overall duality theory) was established by me without any "guess" and that its restriction is based only on bidualité theorem (or "local duality") - which suddenly becomes elsewhere in SGA 5 (from the pen of Illusie) "theorem of Deligne!"

Moreover, on page 100 there is a section entitled "The method of Nielsen-Wecken", which is the method I introduced in algebraic geometry to prove a formula like Nielsen Wecken, proven by these authors (in the transcendental context) by a technique unusable in triangulations

0

the context p. 254

algebraic. Deligne has learned this method (and the names of Mr. Nielsen and Wecken, which he did not need to read the fine article in German!) by my mouth in SGA 5 seminar "technical digressions" that SGA 4 1

2

is intended to forget! In this section, there is neither hint GAS 5, or me and the reader has the choice, for the paternity of this method, between Nielsen Wecken (if poorly informed) and the brilliant Copyright modest volume.

Interestingly, throughout this volume, demonstrating "Woodshoie" Verdier, a formula of including traces if I needed (for Frobenius morphisms) is not mentioned. This demonstration (apparently been forgotten in favor of the more general method developed in SGA 5) was the missing link to fully justify my cohomological interpretation functions 51 (*) Besides the works that are in the Publications Mathematics IHES, the director, Nico Kuiper has kindly send me for almost fifteen years.

311

14. B) STONE AND GROUNDS

L. Obviously, there was agreement (perhaps tacit) between Deligne and Verdier - Verdier abandoning to the Deligne Credit trace formula for the Weil conjectures, in return for part of SGA 5 he had recovery on his own last year (in 1976). (See the note about "The good references" n ° 82.) Other compensation: The publication in SGA 4 1

2

of "State 0" derived and triangulated categories, which my name is missing as well. Four years later, moreover, written Deligne, duality spreads out algebraic geometry takes the name of "Verdier duality" - Verdier had not made a bad deal! (See end of Note ° 75 "The Iniquity - or the sense of a return.")

14.2.12. Being apart

Note 67

(May 27) 52 (*) The passages quoted, as all of the circumstances surrounding the publication of this remarkable volume named SGA 4 1

2

Testify to my friend about a deliberate déri- sion and vis-à-vis defiance of the central part of my work, represented by the set of two seminars intimately interdependent SGA SGA 4 and 5. These "circumstances" that proved during the reflection from 24 April (see the note "The gossip", n ° 63 ") to May 18 (see notes" The body... ", "... and body ", n ° 88, 89), the sacking of the original seminar SGA 5, materializing by publishing-massacre 1977 is not the slightest. (See especially note "massacre" n ° 87.)

This deliberate derision in my friend makes sense if we remember that oral seminar SGA

5 shows the first contact of young

0

Deligne man with diagrams, technical cohomological

p. 255

including the duality formalism, and the χ -adic cohomology, when he arrived in the IHES in 1965 at the age of 21, with the specific purpose of learning "algebraic geometry" with me. It is in this Oral seminar, and notes the seminar SGA 4 which took place two years before, he had the privilege to learn first hand the ideas and techniques that have dominated his work until today even ⁵³ (*).

This essential aspect of the context of "Operation SGA 4 1

2

- SGA 5 "and beyond it, the relationship

even my friend Pierre to myself, this was obviously not writing the previous note ("The

tabula rasa (1)", n° 67), nor in the part of the reflection on the Burial before it. The memory

This "young man Deligne", landing in the seminar SGA 5 where he still had everything to learn and where it does have (and very fast) learned a lot, has ended up in the last stages of reflection,

as my defending body. The deliberate in me since the year of the emergence of young

Deligne in my "microcosm" math, not to count the number of my students (as if it

I would have missed making a modest obligation vis-à-vis a person as brilliantly gifted) me

is also minimize, or rather, ignore completely until the last few weeks, a reality

however obvious and tangible, which is commonly expressed by this double designation (I *récusais*) of

"teacher-student" ⁵⁴ (**). It pleased me to forget, ignore that there had indeed been "transmission" of some thing from me to him, something that for me and it was a great **value**, in a sense

certainly very different for him and for me. What I transmitted in these four years of close contact

mathematical between him and me, was something I had put the best of myself, fed a thing

⁵² (*) This note is from a footnote page to the previous note "The clean slate", which it complements,

wrote one month to the day.

⁵³ (*) At almost exactly the same comment can be made also for each of my other students cohomologists Verdier

Illusie Berthelot Jouanolou - see the note about "Solidarity" and the four notes that follow (Notes n° 85 to 89).

⁵⁴ (**) (June 14) This is apparent deliberate in how I Resolve To finally talk about him (as if doing

I was breaking an obligation of discretion or modesty, vis-à-vis the man who liked to stand out of me. . .) there is Four months in the note "Jesus and the Twelve Apostles" n° 19.

312

14.2. My friend Pierre V

my strength and my love - something which (I think) I was bestowal and without measuring or even, perhaps really feel the price.

Surely it was I gave food to a passion to know him

0

attuned to that which ani- me p. 256

mait - and **something** also that I have felt much later and still without binding to the "transmission"

which had taken place and he liked to ignore. To put it differently, what I gave was received **also** at a

Another level that remained hidden from me, not as tools to probe a fascinating and inexhaustible unknown, but as **instruments** to supplant (first), and later to establish dominance, ruthless

"Superiority" over others.

Without even from what is returned to the "child" in my friend, eager to learn, and what income

the "boss" in him eager to supplant, to dominate (and, to crush), but the most superficial point of view

the part that take in implementing some ideas, techniques, tools - this was an unexpected discovery

during the last six weeks, at which point the work of my friend, who took off from the year

our meeting, would be fed up again today what I had sent him. I am silent

imagined, leaving mathematical scene there will be fifteen, that "little" I brought my

Non-student friend (a "bit" of which I could see yet the role in its impressive initial momentum) would be

a first stepping stone for a flight that would take him far beyond its starting point, that **the move away** from

my work and my person. It happened by cons is that my friend has remained until today

still attached to this starting point, **attached** to the same work that he acted at once to deny, to deliver

derision or neglect, and "use". This is the typical case of a conflicting relationship to the father or the mother,

indefinitely retained in the orbit of those it is intended to leave and go beyond, one who likes to cultivate

the conflict in him, rather than rush to meet the world. . .

I see today that by this deliberate treat my young friend "being apart" and not simply

as one of my students who had the good fortune to have more means than others - and also the deliberate

minimize or forget in my relationship to him the price of what I transmitted (and **power** as that of

Therefore I was putting in his young hands. . .) - these attitudes I alimentais without my knowledge a conceit and a

conflict in him, which remained hidden to me either. At the same time, I entered a game - or rather, there was a game for two in a perfect agreement, I would be hard to say who "had begun" (to assume that the question has meaning): myself with "modesty" claiming that my young friend was too brilliant student for anyone, and that the little that I could give him was not worth the trouble to talk about - and himself standing out (even before my departure) of myself and my work, denying (Under my eye com

0
pleasant) the soil that had well and truly fed.

p. 257

It was not until writing this note that I finally see clearly the game, including a diffuse perception de-Vait be present for a week or two. And I also see that this "modesty" and "humility" in me was false modesty, false humility: a lack of simplicity, to see things simply for what they are. There was in this game vis-à-vis complacency my young friend - sowing that proliferated hundredfold! - and, more subtly, a kindness to myself, making a kind of pedestal to a "special relationship" extraordinary and everything 55 (*). (Like any lack of simplicity perhaps, or nearly so, is basically a self complacency. . .)

55 (*) compare with the note of May 10 "Climbing" (n ° 63 ☺ where for the first time I see this complacency ingredient in what was my relationship to my friend Peter. This perception remained isolated and fragmentary to date, where she specified in the reflection that took place in this note "Being apart".

313

14. B) STONE AND GROUNDS

14.2.13. The green light

Note 68 (April 27) Actually, I never thought about the meaning behind the strange vicissitudes of the seminar SGA 5. His oral progress in 1965/66 had not given rise to particular problems, while Writing by successive and often fail volunteers dragged on **eleven** 56 (**)! It was in 1976 that Illusie finally took things in hand, taking care to write what remained plan and publish all. Today is the first time (after nearly twenty years that have passed since this seminar) that I realize that "there is something to understand." Perhaps I am the only one. . .

The first idea that comes to me is that among listeners more or less active of the seminar, and more or less familiar as previous seminars SGA SGA 1 to 4, it had to be a phenomenon of **saturation ration** with respect to the tide "grothendieckeries" breaking on them as a kind of tidal wave unanswerable 57 (***)). Obviously, faith has missed some editors, who have not been feeling very well where all this was going, and why on earth I had been so stubborn, for a whole year, and to want tossing and turning in every direction until completely control the formal properties are

0
the sensate

p. 258

étale, and the entire arsenal of new concepts related to it. Especially the fact that there is track or the exposed end of the seminar, setting open problems and conjectures (never published my knowledge), or the introductory reviewing the formulas of Euler-Poincare type and Lefschetz in various contexts, is a particularly eloquent sign of a general disaffection. I do not remember not have received this disaffection then (or even after, until today 58 (*)), I was in embroiled my tasks of the moment.

The fate of SGA 5, which originally had such a strong **unit** that none of my other seminars, which has seen **dismantle** gradually (68) during the eleven years of non-writing that followed could have been me show that large projects I pursued so stubbornly, and for which I had found during

few years arms to support me, were by no means become a joint venture, but me remained personal. My program aroused here and there occasional collaborations, without turning in key idea in any of my students then - into a force that would have incentive to work longer breath and a broader vision than he had continued with me in his thesis, whose main role in life has been to make him learn what mathematician profession he had chosen.

Only, it seems to have entered a whole (if endorsed) a certain overall vision, beyond the framework of a "collaboration" special on such type of questions or to the development of such special tools, was Deligne. That why probably I had to see him (not that the thing has ever be formulated) more a "heir" any designated a "pupil". The term "heir" here better identifies what I want to express that the term "follower" who introduced himself to me first, but that might suggest the idea a work that would be limited by a received inheritance. I felt rather this "legacy" as a simple

contribution I was able to

0

deployment for a personal vision, which would feed

p. 259

56 (**) The drafting of the entire seminar, based on my detailed notes for oral presentations, would have been to I few months barely work.

57 (***) This joins the impression of students who would have remained "a little stunned," expressed in the letter cited in note "Failed to education (2) - or create and conceit" (n ° 44 ☺)

58 (*) (May 26) This is after I returned a little more "in the bath" seminar SGA 5, I was reminded of an impression discomfort I had had when I looked through (it was to be in 1977, the year of its publication) copy of the seminar published I had just received. This impression of "mutilation" (which then remained as diffuse unformulated) was due mainly, perhaps even entirely (I have not had to spend much time to look closer, then it would have earned from shot ...), lack of introductory and final presentations, and especially (I think) the ease with which this absence was announced, as almost anything for granted - why would we take the trouble to include them! I had a certain level "feel something," I have taken the trouble to let up and consider that this month (nearly seven years later!), in the note "massacre" and the two notes "The body...", "... and body" which follow it.

314

14.2. My friend Pierre V

many other contributions (as was the case in fact already from before my departure), and was called to effortlessly exceed anything that had preceded and nourished.

To return to the plight of SGA 5, thought that had touched me yesterday was that this spell was perhaps not not unconnected with the ambiguity of the relationship Deligne to myself and to my work, especially given the as-Cendant its strong mathematical personality could not fail to exercise on all of my students 59 (*).

Surely he had to find his account in his heart in the vicissitudes that have hit the notes that seminars, stripped of what made the unity and momentum of oral seminar. On reflection, it is clear yet it ☺not in the provisions of one among the participants that is the root cause and es-sensate these vicissitudes. Without even discern clearly the cause, there is no doubt in any case that it primarily concerns my own person **and** those who had to take mine 65/66 supports writing seminar. Surely it is in their relation to my person or as may also, in their relationship to a certain way of doing mathematics (or a program, or some vision) that I incarnated for them. The fate of SGA 5 now appears to me as a **revealing** eloquent and tenacious something I never even bothered to look, for lack of I knew it only counts, and that at this moment I do still glimpse 60 (**). Perhaps these lines They encourage such protagonists of this collective misfortune to tell me about his own impressions on this subject.

0

Perhaps there he has a lesson yet (at least temporary) that I can draw now the episode p. 260 SGA 5, which was first foreshadowed, and then shown, this **stop** dramatically after I left, almost the line, the famous ☺program☺n which I was embedded. Contrary to what I had to believe more or less euphoric sixties (all happy that I have finally found good will to assist me!), it seems to me that today the implementation of a broad vision personal by a tenacious and meticulous work can not be in the nature of an adventure or business **collective** . Or rather, if "collective endeavor" there, it ☺not one that would come true in a work of ten or twenty (or thirty) around one person. Provided that the vision should become a legacy common to all, it will play here and there under the sole pressure of needs, through the work day to day like or another who may know only the name (and again!) the predecessor, whose vision was too wide for its arms alone are enough to make him body 61 (*)

59 (*) (April 28) An eloquent concrete sign of this influence is that the publication of SGA 5 has ended up doing that at the moment where Deligne has seen fit to sign Illusie to actively deal - that is to say, the **moment** where was itself need as a basic text for its "digest" SGA4 1

2 , intended to be substituted for it. (See this end of the introduction to SGA

5, written by Illusie.) It enlightens and gives meaning to this statement (which I still qualifiats of "mysterious" before yesterday in note "Clean Slate" (note ° 67)), that "the existence of SGA 4 1

2 will soon publish SGA 5 as is ". The

"Tel quel" is here a touch of humor that I was probably the only one to feel (even before yesterday), and to appreciate the value! (Seen the

"Rollback" that represents the published version compared to the original seminar.)

60 (**) (May 26) This is the "something" just referred to in the penultimate footnote page, and that eventually surfaced during the discussion the past few weeks, and especially from the time (May 12) where I finally bothered, for the first time since its release in 1977, to look a little closer what had become "a splendid seminar" in the hands of my cohomologistes students in publishing-massacre was made eleven years later.

61 (*) (April 28) Maybe "my arms alone" would have been sufficient to achieve the comprehensive work program that I was considering the late

sixties, but on condition that I do for twenty or thirty years to follow the exclusive servant of this program. I am happy today not to have followed that path, that could have been mine, and I see clearly

14. B) STONE AND GROUNDS

14.2.14. Reversal

Score ! 68

(April 28) As an example (among many other ⁶² (**)) of the dismantling, I thought back lots a presentations Key SGA 5, which ended up being written by none other than Deligne (which I was responsible think in 1965, for "keep" its commitment eleven years later. . .) In my oral presentation, to be incor-Pore without further ado in SGA 4 ₁

2
! This is the formalism of the cohomology class associated with an algebraic cycle on a regular pattern that develops fluently passing cohomology "to SUP ports "in support of the proposed cycle. Like almost all buildings in étale (helpful also in many other contexts, they became common practice), I developed it late fifties as part of coherent cohomology (here cohomologies Hodge and De Rham, who, as part of algebraic geometry "abstract", are studied for the first time in a of my first exposed Bourbaki). It is so natural

0
it obviously implies compatibility

p. 261

usual with the cup-product ⁶³ (*).

As I write this I realize that the conjuring trick (passing this crucial statement in APG 4 ₁

2
) Allowed to reach this brilliant result Deligne who did not participated in the seminar SGA 5 ^{65/66} ⁶⁴ (**), **not listed** on the cover the number of my "colleagues" (something that had me already hit yesterday, flipping the volume published Lecture Notes n ° 589) and that it is by me that is against right (eleven years after the seminar) to figure "collaborator Deligne". This is a **reversal** of pretty awesome situation, it must be said! At the time of publication SGA4 ₁

2
, Which I collaborated well without knowing it, it was seven years since I had stopped any public mathematical activity - to the same point I never took care of the publication of this poor SGA 5, which for me was part of a past I had left behind me. . .

(30 April) As for SGA 5, it now appears as a collection of somewhat disparate texts, tailless or head (they got lost on the way!), and who "stand up" by reference to the text SGA 4 ₁

2
Remarkably, and I noticed that in this moment, even the name SGA 4 ₁

2
suggests indeed this text **above SGA 5, which only exist in reference to him** ⁶⁵ (***) . If the author of this

0
text was

p. 262

in less ambiguous provisions ⁶⁶ (*), and see that for sentimental reasons to insert his "digest" ("Plus some new results") in the series of SGA where he had played his part, the name that was needed SGA course was 5 1/5.

I see a second pass-pocus, which makes me measure the share of Deligne in the fate of USG 5 is heavier than I thought he would have three more days. This also makes me reconsider the feeling ⁶² (**) (28 May) I decided myself to go around this "dismantling" in reflection of 12 May, in the note (for @ore appropriate) "The Massacre" (n ° 87).

⁶³ (*) (28 May) in the coherent framework, see my presentation Bourbaki n ° 49 (May 1957), § 40 In the note "The good references" (n ° 82) May 8, I discovered that these ideas, and those I had developed in the same seminar SSA 5 for classes homology related to the cycle (and many others) have been taken to their account by JL Verdier, without a word the existence of a seminar SGA 5 or my person. This operation is up in 1976, a year before the "operation SGA4 ₁ 2 "

(Which it seems to me closely bound) and the full knowledge of all former listeners and participants of the seminar mother SGA 5

1965-1966.

⁶⁴ (**) (28 May) And even there he heard about first things he exposes so brilliantly in the volume-

pirate SGA 4 1

2 ! On this subject the note "Being apart" of yesterday (n ° 67). Compared with the processes of his friend Verdier year before, and those that he practiced himself on other occasions, my friend here however remains below the limit obviousness looting, since present myself as the author of the presentation on cycles (it is true with the brilliant result of power introduce me as his assistant), and it does not mine simply ignore that I am for something in the theory of étale, trace formula, etc. For a breakthrough in that path, see

However, the note "In Praise of Death (1) - or compliments" (n ° 104).
65 (***) (May 28) for a deeper meaning of this "violent integration" of USG 4 1

2 between the two parts 4 and indissoluble SGA

SGA 5 from one end, forming the core of my written work, see note "The body..." (N ° 88).

66 (*) (May 28) The term "ambiguous provisions" here is definitely an understatement!

316

14.2. My friend Pierre V

expressed before, that SGA 4 1

2

is not akin to a scam operation. If person apparently (starting with Illusie, whose good faith is certainly not in question 67 (**)) did not notice the "operation" this is probably due to this "bottom" that I have seen, and so I think the charm of the person My friend, who either place him above suspicion!

14.2.15. Squaring the circle

Note 69 (April 27) Around the age of eleven or twelve, when I was interned in concentration camp Rieucros (near Mende), I discovered the plot sets the compass, especially enchanted by rosettes six branches obtained by sharing the circumference into six equal parts with the opening of the compass transferred onto the circumference six times, making it fall on the stack base. This Experimental observation convinced me that

0

the length of the circumference was exactly equal to **six** percent. 263 times the radius. When later (in high school Mende I think, where I ended up going), I saw in a book class that the relationship was meant to be much more complicated, which had $l = 2\pi R$ with $\pi = 3.14 \dots$ I was sure the book was wrong, that the authors of the book (and probably those who preceded them since ancient times!) had never had to do this very simple plot, which showed clearly that we had everything simply $\pi = 3$. Typical enough, I realized my mistake (which was to confuse the length an arc with that of the chord joining the ends) when I open myself to my astonishment on ignorance of my predecessors to someone else (a prisoner, Maria, who had given me a few lessons Specific volunteer math and French), just as I was about to show him why we must have $l = 6R$.

This trust a child may be in his own lights, trusting in his abilities rather than take for granted the things learned in school or read in books, is a precious thing. She is constantly discouraged by yet entourage. Many will see in the experience that I report Here the example of a child presumption, who had to bow to the received knowledge - the facts finally making a burst ridiculous. As I experienced this episode, there was not yet a sense of disappointment, ridiculous, but that of a new discovery (after that I had hastily interpreted by the wrong formula $\pi = 3$): this error, and at the same time that we had to have $\pi > 3$, because obviously the length of an arc is **greater** than the chord joining both ends.

This inequality was also good in the sense of the formula challenged $\pi = 3.14 \dots$ which, suddenly, was taking reasonable paces, at the same time I had a glimpse then there might be people not so silly it had to have that addressed the issue At this point, my curiosity was satisfied elsewhere, and I remember not wanting to know more then about the ins and outs of these, so important,

67 (**) It is also high time to take this opportunity to thank Luc Illusie the care and selflessness with which he took care of finalize a drafting some exposed in distress and a publication of the "package"; and this in Conditions certainly been encouraging, including my total absenteeism was certainly not the least! (May 26) In the light of further reflection, continued in notes ° 84-89 and especially in note "The Massacre," these acknowledgments provided to Illusie take a comical dimension huge and unexpected that I was far from sense while writing these lines! It is true that I wrote against a reluctance in me, which is expressed in particular by "forgetting" Thanks (already planned) in the "main" text of the note, so I had to "catch up" by Footnote. This reluctance was probably due to the discomfort I had felt ever since the first time I held hands this volume whose name SGA 5 (and I have not had occasion to hold hands, I think, before these recent weeks), malaise I mentioned in the footnote on page (dated today May 26) in the previous note "The signal". This inattention illustrates the importance, in meditation, with careful attention to what is happening in his own person in the same instant. Without such vigilance, reflection here fell short of meditation, at a level superficial - so that attention to this reluctance would have brought me to probe the origin and thus to take a closer look also

14. B) STONE AND GROUNDS

he had to believe, that destined him a letter on his own 68 (*)

0

This experience was probably one of the first who taught me caution when

p. 264

my own lights seem to contradict knowledge generally accepted: that this can deserved
ter careful consideration. Prudence, which is a result of experience, wife and complete (without altering) the
spontaneous confidence in his own ability to know and learn, and gives the assurance that knowl-
original ciency of this power within us.

14.2.16. The funeral

Note 70 (April 28) Resongeaunt last night in this cover story SGA 4 1

2

Where I figure unknowingly

as a "collaborator" of my former pupil illustrates the thing seemed so amazing to me is a doubt
come if I was not betrayed by my memory, and had not actually been consulted and have given my agreement
without much thought to anything. But this assumption is so much against the grain of the attitude that was mine
until last year again, that he was no question that I still publishes math (and higher
reason, not as "collaborator" of someone, and yet someone whose relationship to me seemed to me
then as already charged with a profound ambiguity) - it is more "amazing" though it
was supposed to "explain", and basically nothing mysterious or inexplicable to me! To salve
conscience, I still checked in the letters of my friend between 1976 and today (there are none
the masses and it was quickly made thing), without finding, of course, no reference to the publication of SGA 4 1

2

Still, I wrote a few lines to the individual himself, asking him if he could give me
explanation of this "hoax" I hardly appreciated. . . 69 (*)

When my reflection in it three days ago I raised the turn which took place three years ago in my
relationship to my friend Peter, when I lost interest

0

to continue to communicate with him on issues ma-

p. 265

themes (see "Two turns" notes (66)), I was reminded of a certain impression, which had been
so strongly present. To locate it first I would have to specify that during the ten years that had
passed, while my friend had played for me the role almost of single contact mathe-
matic, I expected (like something from equally obvious that the role I was playing him) that
would the **relay** mathematical thoughts and ideas that I expressed it, to communicate its
turn to mathematicians who might be interested. As I explained elsewhere (see section 50,
"The weight of the past"), is the feeling of having such a contact relay that gave my periods
sporadic mathematical activity a deeper meaning than the satisfaction of a craving in
connecting them to a collective adventure than my own person. It is this feeling also, no doubt, that
68 (*) (April 28) The mention above has brought up other memories, which show that this famous number π intrigued me
more than I first thought to remember. The approximate value $344/133$, found in a book (perhaps the same), I had
struck - she was so pretty that I had trouble believing that it is only approximate! Do so knowing that other numbers
mixed numbers, I was intrigued by the look that could have the numerator and denominator of the fraction
irreducible expressing π - it had to be very remarkable numbers! Needless to say I did not go far
in these childish thoughts on squaring the circle.

69 (*) (May 26) My friend has kindly honor me with a reply, which ended dispel the last trace of doubt. It made me include
as a "collaborator" indeed because of the presentation of SGA 5 he had written and included in SGA 4 1

2 - and he had not found

worth asking my agreement to the transfer, or to be included as a "collaborator" nor thought it necessary to send me a
copy of the volume at which I had worked so well, because "it made seven years that I was more math."

(June 5) I just got (better late than never!) A letter (dated May 30) Contou-Carrère, responding to a
letter of 14 April when I asked him (for conscience) he had never seen a copy of SGA 4 1

2 among my books.

It seems that there was indeed such a copy, that Contou-Carrere had kept in his possession (unless it has purchased the
and remembers more?). On the other hand the Deligne answer seems to confirm yet that he had not seen fit to
send a copy: "He could indeed have been a good idea to send you a copy of $4\frac{1}{2}$, I thought in
doubt that you would not have seen so interest "(letter of 15 May).

318

14.2. My friend Pierre V

that was for so long, I have not felt the shadow of a desire to publish what I found, and still under the shadow of a regret I had retired mathematical scene. (Such regret, however, is never appeared, and I "reappeared" on said "scene" without deliberation and before even realizing it!) I can not say besides how my friend responded to this expectation - can he play the role also waited a long time he kept to me this mathematical availability, driven by curiosity and affectionate sympathy at a time, which had made possible and natural the exceptional role it played in my relationship to the world of mathematicians (and also, to some extent, in my relationship the mathematics itself). When I asked the previous question, there is a day or two, I received (as in immediate partial answer!) a letter from Larry Breen, sending me copies of various correspondence from 1974 and 1975, including two lines of Deligne 1974, accompanying a copy of a letter (which I had to write to him about Picard fields of formalism), who asked his opinion about my letter. It refers to my person by "the master," I think I feel intonation Half joking, half-affectionate. I do not remember another occasion that I be returned echo by others of things I told my friend since I left in 1970. It is possible that there have been and I forgot, besides even during episodes of my mathematical activity, it was relatively I rarely feel the need to consult my friend, and until 1977 or 1978 reflections which I was him share the occasion were limited in scope. So there was not much to "relay" to pro

0
strictly speaking, p. 266

up to that moment ⁷⁰ (*).

Things changed in 1977, when for the first time since the sixties, I strongly "Hooked" on a substance of exceptional richness. It was the beginning of my thoughts on the cards, and wire as needle (about the same time), a new approach to the regular polyhedra (see Sketch of a Program by. 3 and 4). From this point also, it was clear to me that the facts on which I had to pinpoint opened unsuspected perspectives of a wide and deep comparable to those I had interviews (and glimpsed later) with the birth of the concept pattern.

It is strange that on this occasion, I am still sent me to my friend with the expectation that he would echoed these things that had amazed me and what they were doing me a glimpse - while total silence who for seven or eight years already surrounded the same name of "reason" was eloquent enough to teach me my expectation was illusory! This lack of discernment wonder illustrates the deliberate that was in me (even after the discovery of meditation one or two years earlier) to give no attention to my relationship to mathematics or mathematicians supposed to be part of a distant past ⁷⁰ (*) I could do except my initial thoughts on unscrewing theory laminate structures, which I had a word with Deligne to the early 70s he hosted my expectations about it with sympathy indulgent, somewhat that which grants a big kid who doubts nothing. (These are provisions that often had in his relationship with me, and that surely were often based!) skepticism of my friend motivated by his knowledge of some wildness phenomena I did not know, yet does not convince me - rather, the facts that pointed me made me suspect from that moment that the context of "topological spaces" widely adopted "to make the topology" was inadequate to express some flexibility topological intuitions that I felt essential, such as "neighborhood tubular ". Over the next ten years I have hardly had the opportunity to return to these thoughts and I had to forget my little "suspicions" that are current again become (and then became a firm conviction) by my reflections December 81 - January 82, driven by the needs of a theory of "loosening" of the "Teichmüller tower". (Compare this to Sketch a program through. 5, 6.)

(June 5) As another exception, I could count my reflections on virtual and virtual diagrams related reasons (at over a general database schema), I seem to recall having expressed a Deligne. As these were related things close to a yoga he had decided to bury (until the exhumation in 1982), it is not surprising that he did not mine cling to the ideas I explained to him and, of course, enchanted me for some information about them, see Note n ° 46 9 .

319

14. B) STONE AND GROUNDS

and well beyond! My first thought up yet in this

0

meaning ⁷¹ (*) is placed precisely in 1981, p. 267

the second "turning point" in relation to my friend, whom I had occasion to speak. But even in this meditation that lasted for several months, the relationship with other mathematicians had barely

touched, and the relationship to the one among them who was probably closest of all (at least at our level of passion) was not even touched, as far as I remember. That would have been nevertheless very useful!

Still, hindsight and my present reflection, it becomes clear that what happened at that time and which had so surprised me and rough (the sudden appearance of a discreet disdain, where I expected to share Joy still fresh of a discovery that made me a deep impression) was well what was arrive. This is the **scope** precisely what I had to communicate, which had motivated my expectation of an interest in tune with mine, which was to arouse my friend, for the first time in his relationship with me, the reflex **discourage**. This reflex was to be even stronger, I was already "pre-buried" from this moment by the release of APG 4 1

2

. When I returned to the charge three years later, when my friend (armed his beautiful theorem on absolute Hodge cycles) was going to take care of the funeral well standing, with the "memorable volume" published a year later ^{72 (**)}, the same reflex played, but with any brutality. (This episode ended when a communication to the mathematical level, but without me "Discourage" either. . .)

In either case, disinterest obviously was sincere, as he had also been in other cases, when it was expressed vis-à-vis other than myself. It was not the first time that I saw in it (or other) foreign forces to neutralize thirst to know it, and replace the flair mathematician.

It is in these two occasions, in 1978 and in 1981, I glimpsed for the first time, as a Flash, the "**price**" of this contradiction by my friend who had known me for many years, but the scope, and as such hinders limitation in his work and in his understanding of things mathematical ticks, was never clear to me before. But it is only during meditation I pursue month, on the meaning of a **funeral** held insidiously since I left, that this

0

eventually reach gradually appear in full light.

p. 268

At the manifest level, the funeral that I discovered over the past few days and weeks, tipped for a few years but I think of it given a special role to anyone, was primarily the funeral of **my mathematical work**, and through it, and above all, of **my person**. Best placed While all to get their hands on this funeral (as many others in their hearts called to vows), and to preside over the funeral anonymous, was the friend who had once for all to fact Figure legitimate heir. If presided, surely it was not only to participate in the funeral! But more deeply, the one my friend and buried discreetly throughout these twelve long years, was other than **himself**; this thing in him, not that impressive person, a tricky thing and elusive as the scent of a flower or fruit, and that is priceless. (⇒ 71)

14.2.17. The tomb

Note 71 However, following the thread of associations, I got away from my purpose, which was to evoke a some "strong impression", the memory comes back to me insistently for three days. this impression is placed at the "turning point" in relation to my friend, when I saw myself confronted with signs 71 (*) On this thinking, see "The killjoy boss - or the pot Pressure" (s. 43).

72 (**) This is the volume Lecture Notes 900, see note "Memories of a dream - or birth reasons" (n ° 51). 320

14.2. My friend Pierre V

(Both felted and brutal evidence) of a kind of deliberate contempt - these signs that have me is to end our relationship mathematically. I realized then that the time had come when I had nothing left to wait for the continuation of such a relationship, and the "decision" was made itself without division or regret, as the first fruit of this late (and very incomplete) understanding.

There was no anger in me, much less bitterness. (I do not remember in our relationship have felt angry gesture towards my friend, or bitterness except when Episode I left the IHES, where he was not the only fact to be included in it.) But there was a sadness, turning that page in the relationship to a being who continued to be dear to me, so the strongest bond that had me attached to it had withered and perished. And as a spur which is still remained in the following years, he also remained not resolved this frustration, this joy that I brought to share with him, to the one that seemed the closest and best placed to share and who had met with closed doors of sufficiency. This frustration was finally resolved, it seems to me, by meditation I am pursuing at the moment. Even today, it still comes back to show me that what happened to me was what had to happen,

0

and the first responsible for this frustration is no other p. 269

I myself, who had seen fit to indulge myself in an illusory image of a certain reality, rather than to make use of my faculties and healthy look this reality with eyes awake
It on the bottom of this sadness, and that as of this frustration of expectation, what emerged this strange feeling, which then was not like the result or outcome of a reflection (which has not been place then), but as an immediate and undeniable intuition. It was all I could tell my Friend the mathematical level, and all that I had said for years, it was a **grave** I the confided or entrusted. While I have never spoken of this impression to anyone, and I did not recorded in black and white in some further reflection, I recall that it was this image of a **tomb** who was present, and the same word that expresses it (in French), and I just to describe. This "impression" or picture had to arise at that time, as the visual expression (so to speak) some understanding that, at some level, had to be formed and this long, as the fruit of a whole set of perceptions that had to take place over months and years, without that attention or that retain the memory only registers; of simple perceptions and all probably obvious, but I had not "chosen" because they appeared undesirable to someone in me often able to sort at will. . . Either then or subsequently, this compelling image has partnered with some precise memory, tangible, an "event" along the lines of the image, and could have aroused in me the memory of that sudden picture has been touching me rarely thereafter and today is the first time I stopped a little.

If no memory or association is then presented, surely I did not have the minimum availability to welcome him. Strangely, I was then engaged (if I is well now 73 (*)) in a meditation on my relationship to mathematics without this episode that spoke to me quite strongly after all, some passed through a present, make me think of interrupting the "thread" of my thinking, to include a reflection on the ins and outs of what had happened and then that was not without Therefore in my life.

0
The first (and to be honest, the only) association presented itself even now (from evoke p. 270 this image and say that immediately she appeared disjoint from all memory or association. . .) is the fate that had been reserved for my "dream" reasons - the mathematical vision of all that was dear to me, 73 (*) (11 June) intersections confirm that he is indeed the case. This "second turning point" is in the second half 1981.

321

14. B) STONE AND GROUNDS

in my past mathematician. If that happened perhaps still even have some secret hold on me, it was by this dream - and that secret way (I think glimpse at time of writing lines) had itself the strength, beyond words, dreams. If, on the legacy of a past investment, a Investment passionate in mathematics, unexpressed and deep frustration could appear Over the past decade, it was that of seeing a dead silence surrounding these things for me were alive, and that I had entrusted my friend as living things and vigorous, ready to jump in daylight! I left, it was he and no other who had power and aims to ensure that hatching to make available all that he was alone (with me) to feel intimately. And without me nor say in these terms or in others - without ever stop (as far as I remember) does serait- that the space of a thought to the fate of what I had left - somewhere in me I had to include at Over the years, this dream was always dear to me, that is a "tomb" I had said.

And suddenly, with this evocation and with this first association it evokes in me, I see a surge other associations occurring in the wake of it, revealing to me that I have indeed touch a focal point - the point of all, perhaps, is exercised where the weight (long ignored) my past mathematician.

But this is not the place, it seems, follow these associations, while this step "ultimate" my thinking already beginning to be long, I seem to have said enough in this reflection about My friend Peter as to the grounds - and probably even too much taste! And I think it is time, in terms of these notes to close them by a kind of **balance sheet** that teaches me immediately, this reflection on a double funeral.

14.3. VI Return of things - or Unanimous Agreement

14.3.1. One foot in the ring

Note 72 (April

29).....
.....

0
It seems to me that most of the job description and settling was to be done on the subject that I oc- p. 271

cupe is completed, regarding the "partial images" about a certain situation. (It is obvious moreover, that these notes for publication, provide only a shortcut actual work, then it is out of the question here to explain in detail all the elements that contribute to the formation of such or such "image" partial. . .) Surely also, for the same work some overall picture could man-quer to form, blurred again, and waiting to be formulated to take shape and life and tell me what she has to say. Since my reflection yesterday, I feel ready to hatch and pushes me to lend her voice. Actually, what I was taught mainly the reflection of yesterday (which I just read at once) **do none other except myself** . It is with some relief that I see the reflection back to the farm field of a reflection on myself, then for a week she gave me the feeling often to involve the person of another more than mine. The reflection of yesterday I finally found something surely very obvious: that the strength of my attachment to a past, my "past mathematician" and the particular role that played the famous "dream" reasons. Once the thing is said finally, his evidence is obvious - the latest and clearest sign perhaps being the emotion triggered by the discovery (two years) of some "event", this 74 (*) I thought I here to spare the reader a good page considerations on meditation in general, which have been a way to beat around the bush - a sign of resistance to get into the thick of it.

322

14.3. VI Return of things - or Unanimous Agreement

"Stealth return" (and late) patterns into mathematical menagerie, under the leadership of my former "student" and friend! This emotion is reflected immediately by resuming a reflection that seemed finished - recovery materializing as dry by a flood of fifty pages of retrospective reflections! So (and recognition has already presented to me several times during this untimely release) it seems I am not "out of the arena" as much as I thought there was a month or two in exultation one end of the stage and the release of feeling (not illusory) that this stage had brought me -

0

with p. 272

teaching that "I was not better than others" and that "I did not have to surprise me if the student exceeded the master " 75 (*) This teaching has not yet prevented me wonder -. it was enough that the " student " beyond me in a direction I had not planned! But if education did not stop that "I am astonished," he was nevertheless valuable more than once during the past thought to myself preserve usual pitfalls (or at least **some** of these traps).

To return to the force of this "influence" the strength of my attachment to that dream of reasons, it is already appeared in many other parts of this volume in both Crops and Seeds (which speaks of reasons several times and well enough eloquent terms) than in the Outline of a program (or "Objectively" the reasons had nothing to do), or in the Sketch Theme (where the patterns are a little figure of Non-incubated eggs in a cloud of vigorous chicks). In the latter text, which dates back to twelve years and is visibly posted in remote provisions, that last paragraph on the grounds is the only, I think, where we feel a sudden move heat. . .

The remarkable thing is that this attachment is never occurred to me during these fourteen years since my departure until yesterday when I finally glimpse of the obvious, to finally formulate me today. the During the meditation there nearly three years (July to December 1981), I finally found a first Obviously, namely permanence in me a passion for mathematics, which had expressed years gone well eloquently. But my attachment to the past, as far as I recalls went unnoticed at the time, and remained so until today.

I had yet to begin with reflection glimpse "The weight of the past", came as salve consciousness while meditating on my past mathematician seemed already completed (except I have not yet been able to perceive the **weight** of the past!). I felt also by writing it I was left on the surface of things, without really penetrating. The notes I have been led to add later (first (46) (47)) then led me into a direction for quite a while away from my person, in focusing my attention on mathematical work (and the aspects of it that seemed the more "important") and on the vicissitudes of this work and the role of others in them, rather than myself.

0

I just reread this reflection "The weight of the past" (s. 50). Towards the end of it, I begin to p. 273 glimpse into effect as "tilting force" (a mathematical investment to other episodic) could be the fact of a "commitment ftu past" (mathematician), but rather to "past the last ten years past "after 1970" Therefore, not the past already written things in black and white things done, those before 1970. "A few lines later I remember yet, but only" in passing ", in the "vast program I had then before his eyes... only a small part found itself realized." As I write this, I had to think especially the parts of the "broad agenda" that were immediately feasible, the motivating force (!) was nevertheless far short of that which represented the Dream

reasons. "(His justification (but not its formulation) then appeared as a major task "on the horizon". . .)

75 (*) See "Finish the ride!", N ° 41.

323

14. B) STONE AND GROUNDS

It is clear that my attachment to "dream of reasons" is (as probably all attachment) primarily (if not exclusively) of ego kind. It is the desire not only to **contribute** to a collective work, but also to see that contribution **recognized**. Assuming that the "vast array of reasons" has indeed been brushed across the scale I was seeing him since the late sixties, but the part that had mine was in the blossoming of this vision is killing my displeasure would probably not least (and maybe more?) than I have experienced by reading the "memorable volume" (which I see many times certain concepts and ideas I had identified and brought to light, but (so the least I felt) deprived of breath and intense life that had so fascinated me in them) 76 (*).

As will be consumed this egoistic desire to see "recognized" such things from my past mathematical distant or later, it is probably premature to claim me "out of the arena." The "carousel" mathematical not tick me **contains** more as he once content and as such it contains my friends. But surely I still keep a foot, and I suspect that the foot will remain there as long as I meddle making math!

14.3.2. Return of things (or one foot in the flat)

Note 73 (April 30) I thought back sometimes draw the seminar SGA 5, and how this spell has been linked to publishing SGA 4 1

2

. This situation was confused, and I have discussed in these days and glances

0

by the way, seems to me to this very clearly. I just add a note

p. 274

Footnote 77 (*) about this at my reflection in it three days ago (see "The signal" notes (68)), and it seems with the comments that I made the day before yesterday (in footnotes page also) and the thinking of the day before ("Clean Slate" notes (67)), I expressed myself clearly enough to make it unnecessary to make even a summary overall picture of a situation that now appears in sufficient eloquent 78 (**).

At this point, it is important that I note that the first and primary responsibility for the "plight" that hit SGA 5, and the use that was made of a situation of abandonment, is none other than myself. If the various "volunteers" (who are responsible for essays they did not really want to do) were apparently not clear with themselves, I was not more, who am stubborn me not to listen the lesson yet eloquent situation and rest on "collaborators" without conviction, instead to take things in hand and make myself the editorial work that therefore my responsibility After all three full years elapsed between the end of the oral seminar, and the time of my departure mathematical world (which is translated immediately by an almost total lack of interest in me for my published work, during the fourteen years that followed). It is true that during these three years I was fully busy with my other work, including the continuation of the seminar SGA (with SGA and SGA 6 7) writing EGA, reflection on the often juicy issues arising daily, and among celles- one, the progressive maturation of a overview of the reasons ... Taken by these tasks, I made the choice blind eye to the plight of a past seminar, which was (together with SGA 4 of the previous year) the deepest mathematical contribution I could make, at the fully accomplished work I hear, and that also has probably the most extensive.

76 (*) (14 June) This "displeasure" is due primarily, it seems, this impudence printing, willful disregard of a link that affect to ignore, keep negligible. The situation is quite different when ideas or findings we uncovered are rediscovered by others, something that commonly happens.

77 (*) This footnote prohibitive page length became a separate note "Reversal" (n ° 68 ©)

78 (**) I nevertheless returned 9 May and the following days, see notes n ° s 84-89.

324

14.3. VI Return of things - or Unanimous Agreement

The situation could still deteriorate that after my departure without return, allowing the most prestigious among my former students that brilliant operation to insert his famous SGA 4 1

2

between the nonsense gangue and

superfluous details SGA SGA 4 and 5, making me the honor to promote me collaborator of what present as the central key-text, for (as he says with that candor is its charm) to "Forget" charitably the heavy gangue that surrounds it. . .

0

In short, the choices I made, even before my departure and I left, implied consequences p. 275 for the fate of my work published, or (for SGA 5) awaiting publication, as for the part My "work" was left in the dream state - dream **unpublished**, what is more. I do not regret my choice, and it is not for me to complain, when I see today some of the consequences of these choices not to my taste! It is up against me to consider these consequences (and especially as they I dislike!), to get a general picture of the facts 79 (*) (what is done), and draw the lessons they can bring me. This is what I have to do, and thinking today will may be, at least, a first step in this direction. Some comparisons were made in me from these recent days, I would first like to put black on white.

The main force, the "drive" was behind the investment I made in my students in general, the first period of the sixties, it was the desire to find " **arms** " to perform " **tasks** " that my instinct appointed me as urgent and important (at least from the perspective of mathematics of mine). This "importance" surely was not purely subjective, it was not a simple issue "of tastes and colors" and often (I think) the student who made his task so I proposed felt she "had the weight," and also, perhaps, what could be its place within broader designs.

Yet in terms of this "drive", this motivating force in me that drove me towards achieving tasks, it was not some "objective" importance was at stake - while the "importance" of the Fermat conjecture, the Riemann hypothesis or that of Poincaré completely left me cold, that I do not "felt" not really. What distinguished these tasks any other, in my relationship with them is they were **my** tasks; those I had felt, and made mine. I knew of them have felt was the culmination of a deep and delicate work, creative work, which had identified the concepts and key issues that were the subject of such a task or another. They were, without doubt (largely) they are still a part of my person. The tie that bound me (Or still binds me) to them, was not settled when I entrusted this task to a student - well however, this link was acquiring a life, a new force! This link was not to be told

0

(and I "say" here, p. 276

were it to myself, for the first time). This link was obvious both for the student who chose to work with me, and on such a task of his choice, for me, and also (I am sure) to any other.

This is the deep connection between one who designed one thing, and that thing - and that is not altered, but (it me seems) strengthened by those who, according to him, are "their" as this thing and give him the best of themselves

It is a bond that I never considered carefully. It seems deeply rooted in nature

the "me", and universal nature, It is a bond that sometimes affects to ignore, as if it was above such pettiness - it is even possible that I happened to enter such an assignment 80 (*). But the

sometimes, in recent years (or in recent days and weeks), where I happened to be confronted

an attitude that affects others ignore this link (which he is aware) that connects me to this task that

79 (*) (28 May) Read here, "the facts known to me." From the day after, entirely unexpected developments will revive thinking about the burial and take me to triple the volume of the notes related thereto.

80 (*) What is certain is that I followed the "good tone" of ignoring things like that, contrary to the image of rigor!

(30 May) See this link about the note "... And the body", n ° 89.

325

14. B) STONE AND GROUNDS

been achieved (by another, or by myself) or only designated, I touched a sensitive spot.

We can call this place "vanity" or "conceit" and dress up with other names - and I do not claim that these words are moved here, but whatever you call it, I have no shame to tell or

being as I am, and I know the thing which I speak is the most universal of the world! No doubt this attachment of a person to "his works" not he has the same power of a person to another. In my

life, or "Do" was from my childhood the constant focus of my great energy investments

this link has been strong and the rest today.

I can therefore say that the main force that drove my relationship with my students is that I saw in them

"Arm" welcome to the realization of "my" tasks. The formulation may sound cynical, as she does express an obvious reality, surely felt by my students as well as by myself. The fact that

it was "my" tasks did not prevent the they also make "them" - and it is this identification with them their task mobilized in them the energy required for their achievement; as identification

this same task mobilized in me the energy that had created and take shape, and still

mobilize energy as I continued to invest in the subject. This energy was essential for me to

same "function" as the "master", that is, as the elder who teaches a trade (which is also an art) and that can not happen without mobilizes considerable energy. Never in my teaching past I felt a contradiction

0

in the fact that the same task was deeply "hers" for students who worked

p. 277

with me, while remaining as deep "mine". I do not believe that this situation is the least world of a confrontational nature, or that it never gave the opportunity to conflicting impulses of it hook ⁸¹ (*). In this simultaneous investment situation in the same task and identification with it, both the student and find myself (I think) our account in a working relationship that was perfectly clear, and that by itself (it seems to me) contained no contentious element. the strictly personal level, against this relationship remained superficial - which did not prevent to be cordial, friendly look and even affectionate.

The investment in my work, and **through them** with my staff-students for these tasks was (I have said) of ego kind (like any investment, no doubt). Surely the realization of these tasks was mostly for the "me," a way to expand, by conducting a comprehensive work to vast proportions as "my only arm" would have been able to complete. From a certain point in my life mathematician, there was this constant ambiguity of a cohabitation of close interpenetration between "Child" and his thirst to know and discover its wonders in interviews and in those things closely examined, and also the **ego**, the "boss", rejoicing in his work, eager to enlarge and increase its glory by the proliferation of works, or the stubborn and relentless pursuit of a construction of all the grandiose dimensions! In this ambiguity, I see a division continues to weigh on my life and print him a deep mark - a division that may remain for as long as I live. Such a division certainly is not unique to my person, but maybe in my life filled the "best" as the "worst", this division then took more extreme forms than in others.

So I can say that for this "me" intrusive and eager to enlarge (which was not only in the place but it was indeed!) my students were above all "collaborators" welcome, not to say the "instruments" - "arms" welcome to building an imposing work that would say "my" glory! ⁸² (**)

⁸¹ (*) If, encouraged by a certain context, it happened to one of my students want to retract a role that was mine in work done with me, the thing was done at a time when long ago he was not in a position to student.

⁸² (**) I wrote this sentence with some hesitation, and weighing my words knowing that we can seize it as a kind of cynical admission of the horrible Mandarin finally throwing the mask! But I know I will not one that shall prevent envi drown a troublesome fish to at ease. This does not prevent me from continuing my remarks to discover and tell the obvious things, including the humble truth written above, which will surprise only those who have never bothered to watch

326

14.3. VI Return of things - or Unanimous Agreement

This is something, it seems to me, that appeared quite clearly

0

already during my meditation there are three p. 278

years of my relationship to mathematical (and beyond, to "make it" in general), even if he happened to forget a little later. That@the thing that was present in my thoughts, these last days, to make the rapprochement with the other remarkable fact that it is precisely by one of my students (with quotes, never mind!) in that time, and one more that was between all the closer to me, and the only also "feel" without effort and in general these great designs in me that seemed to push me without respite to realize - that he is among all that after my departure (and in his heart, probably even before.

".) Has implemented over the years this **Burial** dimensions of the work (the capital letters are here not too much!), and finally "presided over the Funeral" (with a capital again, for good measure!).

What is striking in this situation is the **comic** grotesque, huge, irresistible, of the thing! I have felt this comic confused in recent days, but it just be me in its true nature

only in this moment, where I placed the latest capitalized on my solemn funeral - in a sudden and irresistible laugh! It is the **laughter** precisely who missed so far in this step called "ultimate" reflection, where the keynote was rather pained the "well sir" disappointed in his legitimate expectations (or even horribly wrong), when the air does pained gave way to comments sarcastic and many sent (it is customary to speak, or you do not!). I feel that I am decidedly back on track after this long digression (that word reminds me of something...) in sad tones.

And at the moment also comes the name that is needed for this "note" (we do not know too well what a note, but no matter.) it@time to close. It will be " **Return of things** ." (⇒ 74)

14.3.3. The agreement Unanimous

Note 74 I finally feel - phew! - I touch the end of the "final stage", which is stretched over twelve days which (as before) everyone was as "the last". Perhaps the last word has been said, there

just a few minutes. My funeral (symbolic) was a **turn of events**, a crop sowing made by my own hands. (And my burial

0

flesh, if I have the happiness to die leaving p. 279

behind me of living men and women who can bury me, will return as something

I left when I was born ... 83 (*).) Anything that can keep adding even, it seems, will not not only in terms of **epilogue**.

The famous "expensive among all student" was not the only one of my dear students to bury me with enthusiasm, and those who indeed had a hand in the dough are perhaps not alone among them, present at the funeral without displease them! But no matter myself at the bottom of who will and who it! (To learn more about this, if is just that, not teach me nothing more.) I finally understood this "return things" and having understood I collect the benefit.

Yet I have not yet removed all the stuff this benefit holds. I do not clearly discern yet **how much** exactly my person that some former students have found their account burial and funeral. Is it only the "greed" of which I spoke, that (I think) not me in himself.

83 (*) (May 28) This sudden association with my own death presented itself forcefully. I have been tempted to dismiss, then that delete this unexpected interlude, which seems to come out as the hair on the soup. I refrained, by a kind of respect. Strangely enough, the next day I learned that evening of April 30th where I continued my reflection in the town where I live, sister (seriously ill) a friend is dead. I saw Denise for the first time, and on his deathbed, the same day. The next day on May 2, I joined my friend and many other living men and women to wear in land, a beautiful spring day. . .

327

14. B) STONE AND GROUNDS

not distinguish so many other "bosses", and they were accommodated without difficulty (and probably without even out, at least not at the conscious level) when they made their debut with me?

Then "opportunity" (my departure etc.) which would "makes the thief", and which would have been **indicative of a general propensity** in them as in "student among all" bury his "master" or "father, when the circumstances are favorable? Perhaps I was more "master" (or "father" ...) that nature, that this fact played to trigger with a beautiful set that "burial syndrome"? ! For the now I can not see! Maybe the feedback I gather (I hope) they will allow me to view it clearer, and better assimilate the unexpected food before which seated me here.

There were no students to discreetly attend the funeral and the funeral, although no Non-former student was in position (as far as I know) to play a prominent role. Obviously many my old friends have found their account. The thing for once does not seem too mysterious.

0

As I had occasion to say in passing, more than once I saw the deep unease created

p. 280

my old friends by my untimely departure of mathematical scene. It is the unease everything how dimly it feels like a **provocation** to deep discounts in question, for renewal.

In this case, it was natural that this malaise among mathematicians is strongest among my friends, among those so who had known me, and could feel all the investment force that had been mine in the values which always remain theirs; besides each of these friends to himself made and continues to make an investment of comparable strength in these values, and substantial "Returns" that they offer him. I had already had ample opportunity to observe such a malaise among others scientists, from the beginning of the period survivrienne. But that did not stop it was every time a surprise when I found among some of my old friends, which still bind me the same sympathy, the unequivocal signs of a move away, and sometimes enmity. What was supposed to make my "abandonment" particularly intolerable to some, it is just that I was supposed to be a "best" of them, the latter surely they would have suspected that he would play them such a trick! (And I have indeed increased feeling sometimes a tone of **resentment** in some of my old friends in the mathematical world.) It is natural when they find their account in a fashion which decrees that all these "grothendieckeries" after all, it was a lot of paper to not much etc. etc. One Person, if prestigious it is, is not enough not to make a fashion - it is still necessary that the way we want to launch meets an expectation, a secret desire, among many others, before becoming a consensus and to law 84 (*).

I tended perhaps, throughout those fourteen years since my departure, to underestimate the discomfort that it has created in the "big world" - so for me it starting in June 1970 was done so so natural, that there was not even a "decision" to make: the new tasks had taken the day day replace old, who had suddenly fallen and had been absorbed as a past far! (It is also true that I have not been confronted with such uneasiness among my colleagues at the University of Montpellier, which form a completely different environment from the one I had left.) Perhaps I sub

estimates as much the role that could play such discomfort also among my former students "before 1970", including Many are part of the same medium, and "put the package" in their mathematical investment. he is possible that

0

This malaise has played an equally strong role in them than the other friends I thought I had p. 281

in this same medium. Anyway, every situation (between one of my old friends and pupils, and me) is a unique and different case of all others, and general speculation that I do not have a very limited and temporary.

Returning again to the more solid ground of the case, I am struck by the fact that the two ex-students 84 (*) (May 28) See in the same sense the note of May 14, "The Gravedigger - or the whole Congregation", n ° 97. 328

14.3. VI Return of things - or Unanimous Agreement

I have seen active participation in the funeral of the dear master, are also the same people who were first reported to my attention by attitudes of contempt, by a desire to discourage: with respect to younger mathematicians who were "students after 1970", where in which the influence of my ideas and my approach to mathematics was clearly visible. This coincidence certainly nothing to surprise (which has not prevented course that events on every shot surprised me!). Other interesting coincidence is that one and the other were those with whom the personal relationship was more friendly and even affectionate (and for one, this relationship has continued, and in this tone up today). This is in line with this general statement, that it is the closest relationships have especially under attract and fix the conflict of forces.

Another coincidence struck me yet. Of all the students I@ had for almost twenty-five years, there are two which for me are distinguished from all others by both "means" exceptional, by investing in mathematics to the extent of these. (An investment of a force comparable to what I was doing myself for twenty-five years of my life.) For both, however, I scruple to count the number of my students, while it is true they have one yet and the other taught my contact with things that were useful to them 85 (*). It was in the nature of things the both discover their own tasks, without my having to offer them to those I had (or have) in reserve - and the thesis of one or the other has accomplished independently of me 86 (**).

Here are many

0

common points ! As a point of dissimilarity, I will say that the youngest (I believe) of p. 282 two is now "the highest honors" (which I@ spare the reader, and known modesty of the person, the detailed list), and is one of the most influential mathematicians, that is also one of powerful; the other is currently delegated assistant, a position that the incumbent will resume soon next year. There are other points of dissimilarity, which explains to some extent the difference fortunes - as there are also other points of similarity on which it is unnecessary here to dwell.

If not yet it, that of all the students I@ had is with both the relationship Personal also was the closest and most friendly, while a common passion was immediately created a strong bond between each of them and me. The **coincidence** now I want to discuss is that provided as I know, these are the only students also (with quotes is a done thing!) that vis-a-vis the "great world" have done everything possible to minimize or erase, as far as possible, this link very simple and clear to my person.

This is a very striking coincidence, and whose meaning still escapes me at the time of writing lines. In either situation I could invoke reasons different from one to the other. And he is quite possible and even probable that at one and the other, at a certain level which is probably more than fully conscious intentions, such a result (of conceit in one of caution in the other) played.

Yet I doubt that any explanation found to provide an understanding of it, in one case nor in 85 (*) (May 28) This is an understatement, as I finally see later against my will! On this subject the note Yesterday "Being apart", n ° 67.

86 (**) (May 28) It@not quite accurate. The both have essential way used in their work tools that I had shaped and they made learning my contact. Beyond this role, the Hodge-Deligne theory in the work is his thesis (Hodge Theory II Publications Mathematics n ° 40, 1972, p. 5-57) comes directly from yoga reasons he was holding me - "mixed Hodge structures" being the "obvious" answer to the question (also "obvious" in view of the reasons) to "translate" in terms of "structures" Hodge "(" in a suitable sense ") the concept of pattern not necessarily semi-way on the body complex. Beyond a "translation exercise" brilliantly conducted, there course in this work original and profound ideas that are "independent of my person." But it is also clear that the theory Hodge-Deligne would not exist at present (or probably almost all of the work of Deligne or one of my other students) if they had been available ideas and tools I introduced mathematics and they had the scoop to my contact.

14. B) STONE AND GROUNDS

the other. Surely, even more deeply, other forces had to play, the true, behind the familiar appearances of complacency or timidity. Surely these acts that express have something important to say to one and the other. But surely also the appearance of the same acts in two as different, as if they were given the word (admittedly unthinkable, given the difference fortunes!), has also something important to tell me, and no one but myself. Would it yet either more nor less than the reproduction of eternal **rejection of the father** ? This one has yet

0
spoiled for choice

p. 283

among the open him ways to express yourself! Or is it because this instinct so sure of the unconscious, which the made touch "stack" the most sensitive or vulnerable places (when it comes to "touch") has that both have fallen in the **same** place? I would be inclined to actually think. But this is a deducted thing, not something seen, while lack of eyes with the gift of seeing clear and deep, I feel like a blind man who somehow groping in the dark, trying somehow to "see" with hands or ears or skin, that are not really made to see.

To not however conclude on this note of **puzzlement** (damaging to my reputation), but on a note pleasing for a caring, hypothetical reader, I will only say the name conclusive, appeared earlier, which seems to me to express the common content to various considerations of this **epilogue** (for reflection a funeral), namely:

The Unanimous Agreement!

330