Dear All,

From their shock, two objects become deformed. Each of these imprints is a very primitive representation of the other object, a kind of memory as well. Developed objects use this representation and this memory to unfold tools contributing to their own stabilization.

Some people are more or less spontaneously involved in developing acute representations. Among them are some rather rare people called writers, artists, theoretical scientists, and finally, mathematicians. Although the subject matter of each of these people may not be the same, they do share the fundamental desire to produce representations of the best quality. In that sense, a mathematician is also an artist.

Such a famous man left us last year. He was a sensitive and deep mathematician, one of the best of the last century, also concerned with the evolution of mankind. His pen was precise and elegant. In his works he introduced «Children's Drawings», in French «Dessins d'Enfants». He passed away on November 14 - a date which has a special familial meaning for me. Thus our Society, devoted to Maths and Arts, should commemorate that date.

His children's drawings are not exactly the works which belong to the school of naive painters. They are basic mathematical objects. But the fact that he used that denomination is significant. To evoke his memory and to pay homage to him, I would quote a few lines of a now old book (1973) (translation in the Post-Scriptum). The last paragraphs are linked to some feelings and ideas Grothendieck expressed about the future of mankind :

«Quel a été dans son enfance, dans son adolescence l'environnement physique et affectif du mathématicien, quel est-il aujourd'hui ? Autant de questions à partir desquelles le psychologue pourrait tirer des renseignements intéressants sur l'art et la manière de

devenir, et de rester mathématicien.

Travaille-t-il couché, assis, dans un fauteuil ou debout, à la Montaigne en remuant sans arrêt les jambes, à la Hadamard en marchant constamment ? Fume-t-il, boit-il, travaille-t-il tard le soir comme Grothendieck, tôt le matin ? Quand et comment prend-il ses vacances ? Poursuit-il sa méditation "seul devant un poêle" à la Descartes, parmi les siens ? Quelles sont les réactions de ceux-ci aux humeurs et aux activités du mathématicien ? Que fait-il à part des mathématiques et quel genre de mathématiques ? Autant de questions qui sentent l'inquisition, mais auxquelles on aimerait avoir des réponses.

Je crois pour ma part à la nécessité d'un contact permanent du mathématicien, de l'homme, avec la Nature. Celle-ci offre à son regard le spectacle d'une telle diversité de formes, de couleurs, d'évènements qu'elle constitue un enrichissement constant inégalable pour l'esprit, d'autant plus profond qu'il se fait inconsciemment, et petit à petit.

La destruction de la Nature par notre civilisation est une de ses plus belles erreurs, sinon son échec. L'homme a besoin de toute sa sensibilité de perception pour saisir le mouvement de sa pensée, les résonances multiples entre formes mentales dont le niveau sonore est parfois très discret. Il lui faut toute son attention d'écoute au langage interne de sa pensée. Celle-ci doit être armée de résonateurs nombreux et sélectifs, aux formes très diverses de manière à multiplier le nombre de leurs combinaisons possibles, et à conduire des constructions originales.

Or, dans la mesure où l'environnement visuel de l'homme est insuffisant, où il vit dans une ville sans arbre, entouré de formes géométriques très élémentaires et en nombre très restreint, il s'appauvrit l'esprit. Son cerveau est mutilé par la reproduction interne de ces formes, segment, pointe acérée de l'extrémité du cube, qui l'agressent et se pénètrent mutuellement.

Il y a quelque barbarisme dans notre civilisation par la rudesse de son attaque, le simplisme de ses constructions qui se figent dans le ciel, comme mortes. La Nature est une floraison épanouie de formes penchées les unes vers les autres, leur langage subtil est celui des couleurs nuancées qui les habillent et se fondent en demi-teintes, les contours et les arrondis donnent à chacune son caractère. Détruisant cette vie, la civilisation a créé la cité cubique, suitant d'un brouillard sale, où l'on ne voit plus que des panneaux de lumière provoquants, où l'on ne perçoit plus que le ronflement mécanique des moteurs des voitures, monstres froids qui déchirent de temps en temps leurs tôles d'acier en rictus gris et coupants.»

When these lines were written, nobody could have admired the landing of Philae and

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the splashdown of Orion, the beautiful images created with computers, the delicate sculptures made with 3D printers, the large advances in the knowledge of the biological world, the striking progresses in medicine and in robotics, in other words the scientific and technical progress by which we enter a new kind of civilization.

But the fact is that, except for a very few remarkable exceptions, no real progress was made in the aesthetic of standard architecture. We are living in a kind of primitive cubical world which cannot be compared with the religious architecture of the 13th century, its elegant ogives, its streamlined naves.

Indeed, we can observe the absence of talks on architecture in the program of the numerous meetings devoted here and there to science and art. Of course, economic considerations lay behind this fact, for it is very costly to transform a curve into a material substance.
We could also add that even mathematics is generally absent in these meetings. Fortunately, our Russian colleagues have produced a nice counter-example to this.

We are indebted to Bourbaki for having pointed out the importance of architecture in mathematics. In the creation of the mathematical world, Alexandre Grothendieck will remain as one of its most profound architects.

Claude

From the web : nowadays architecture
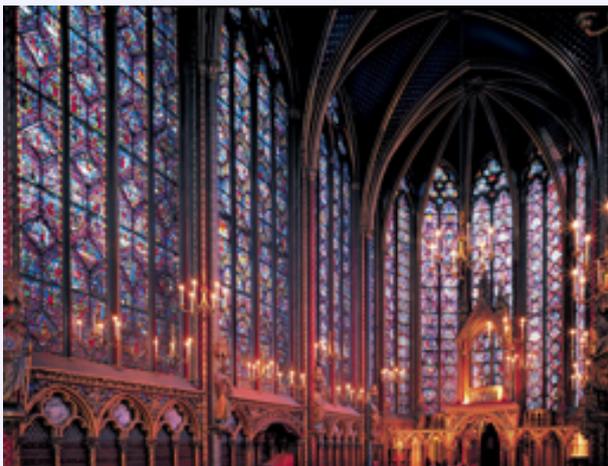
Sainte Chapelle (13th Cent.)
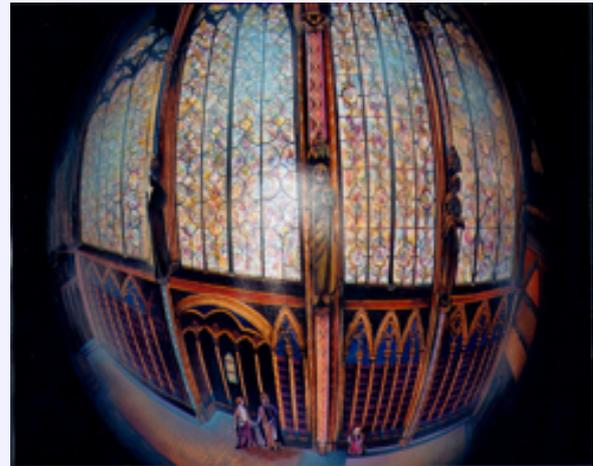
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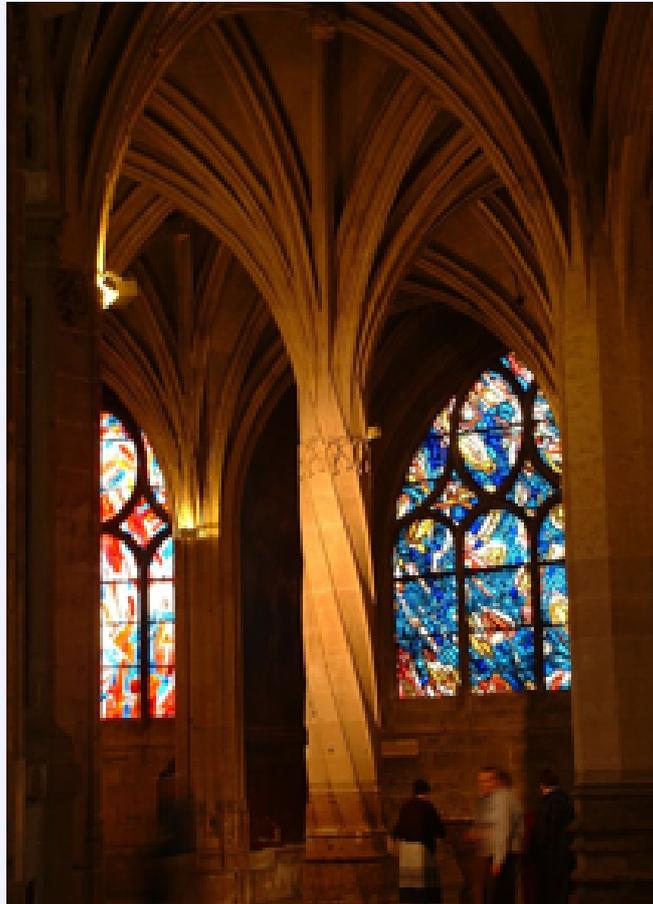
Saint-Séverin Church (15th Cent.)

Collegium Novum, Krakow (19th Cent.)

P.S.

1) It is never too late to pay the 2014 *and* 2015 *dues.*
The use of http://www.math-art.eu/Adhesion/pdfs/iban.pdf *is an aid to accomplish this essential task.*

2) Translation of the French quotation:

«What was the physical and emotional environment of the mathematician as a child or adolescent, and what is it today? These are questions on which the psychologist could draw interesting information about art and how to become and remain a mathematician. Does he work lying down, sitting in a chair or standing, like Montaigne, constantly moving his legs, or always walking like Hadamard? Does he smoke, drink, work late at night like Grothendieck, or early in the morning? When and how does he take his vacation? Does he continue his meditation "alone in front of a stove" like Descartes, or with his family? How do these affect the mathematicians's moods and activities? What does he do besides mathematics and what kind of math? These questions may seem to belong to the Inquisition, but we would like to have the answers.

I believe in the necessity for a permanent contact of the mathematician with Nature, offering an endless variety of shapes, colors, and events. It gives a constant matchless enrichment of the mind, all the more deeply as it occurs unconsciously and progressively.

The destruction of nature by our civilization is one of its finest errors, or its failure. Man needs his whole perceptive sensitivity to capture the movement of his thought, the multiple resonances between mental forms whose noise level is sometimes very discreet. He needs all of his faculties to be attentive to the internal language of his thought. It must be selective and armed with many resonators, in order to multiply the number of possible combinations, and to conceive original constructions.

However, to the extent that the human visual environment is insufficient, man lives in a city without trees, surrounded by very basic geometric shapes in very limited numbers, impoverishing his mind. His brain is crippled by the internal reproduction of these forms, segments, the sharp tip of the tip of a cube, which attack and penetrate each other.

There is some barbarism in our civilization by the harshness of its attack, the simplification of its buildings which are frozen in the sky, as if dead. Nature is blooming flowering forms leaning towards each other. Its subtle language is that of nuanced colors that adorn them and are based halftone, their contours and curves giving character to each. Destroying this life, civilisation created the cubic city, oozing with dirty fog, where we see only

provocatively lit panels, where we perceive only the mechanical hum of car engines, cold monsters cold occasionally transforming their steel into a gray and sharp rictus.»

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