

can are both contrasting and complementary, I have begun to understand something that I had only a rather vague idea of before—something about myself, about how I am and how I would like to be; about how I write and how I might be able to write. Vulcan's concentration and craftsmanship are needed to record Mercury's adventures and metamorphoses. Mercury's swiftness and mobility are needed to make Vulcan's endless labors become bearers of meaning. And from the formless mineral matrix, the gods' symbols of office acquire their forms: lyres or tridents, spears or diadems.

A writer's work has to take account of many rhythms: Vulcan's and Mercury's, a message of urgency obtained by dint of patient and meticulous adjustments and an intuition so instantaneous that, when formulated, it acquires the finality of something that could never have been otherwise. But it is also the rhythm of time that passes with no other aim than to let feelings and thoughts settle down, mature, and shed all impatience or ephemeral contingency.

I began this lecture by telling a story. Let me end it with another story, this time Chinese: Among Chuang-tzu's many skills, he was an expert draftsman. The king asked him to draw a crab. Chuang-tzu replied that he needed five years, a country house, and twelve servants. Five years later the drawing was still not begun. "I need another five years," said Chuang-tzu. The king granted them. At the end of these ten years, Chuang-tzu took up his brush and, in an instant, with a single stroke, he drew a crab, the most perfect crab ever seen.

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EXACTITUDE

For the ancient Egyptians, exactitude was symbolized by a feather that served as a weight on scales used for the weighing of souls. This light feather was called Maat, goddess of the scales. The hieroglyph for Maat also stood for a unit of length—the 33 centimeters of the standard brick—and for the fundamental note of the flute.

This information comes from a lecture by Giorgio de Santilana on the precision of the ancients in observing astronomical phenomena, a lecture I heard in Italy in 1963 which had a profound influence on me. These days I have often thought of Santilana, who acted as my guide in Massachusetts during my first visit to the United States in 1960. In memory of his friendship, I have started this talk on exactitude in literature with the name of Maat, goddess of the scales—all the more because Libra is my sign of the Zodiac.

First I shall try to define my subject. To my mind exactitude means three things above all:

- (1) a well-defined and well-calculated plan for the work in question;
- (2) an evocation of clear, incisive, memorable visual images; in Italian we have an adjective that doesn't exist in English, "icastico," from the Greek εἰκαστικός;

(3) a language as precise as possible both in choice of words and in expression of the subtleties of thought and imagination.

Why do I feel the need to defend values that many people might take to be perfectly obvious? I think that my first impulse arises from a hypersensitivity or allergy. It seems to me that language is always used in a random, approximate, careless manner, and this distresses me unbearably. Please don't think that my reaction is the result of intolerance toward my neighbor: the worst discomfort of all comes from hearing myself speak. That's why I try to talk as little as possible. If I prefer writing, it is because I can revise each sentence until I reach the point where—if not exactly satisfied with my words—I am able at least to eliminate those reasons for dissatisfaction that I can put a finger on. Literature—and I mean the literature that matches up to these requirements—is the Promised Land in which language becomes what it really ought to be.

It sometimes seems to me that a pestilence has struck the human race in its most distinctive faculty—that is, the use of words. It is a plague afflicting language, revealing itself as a loss of cognition and immediacy, an automatism that tends to level out all expression into the most generic, anonymous, and abstract formulas, to dilute meanings, to blunt the edge of expressiveness, extinguishing the spark that shoots out from the collision of words and new circumstances.

At this point, I don't wish to dwell on the possible sources of this epidemic, whether they are to be sought in politics, ideology, bureaucratic uniformity, the monotony of the mass media, or the way the schools dispense the culture of the mediocre. What interests me are the possibilities of health. Literature, and perhaps literature alone, can create the antibodies to fight this plague in language.

I would like to add that it is not just language that seems to have been struck by this pestilence. Consider visual images, for example. We live in an unending rainfall of images. The most powerful media transform the world into images and multiply it by means of the phantasmagoric play of mirrors. These are images stripped of the inner inevitability that ought to mark every image as form and as meaning, as a claim on the attention and as a source of possible meanings. Much of this cloud of visual images fades at once, like the dreams that leave no trace in the memory, but what does not fade is a feeling of alienation and discomfort.

But maybe this lack of substance is not to be found in images or in language alone, but in the world itself. This plague strikes also at the lives of people and the history of nations. It makes all histories formless, random, confused, with neither beginning nor end. My discomfort arises from the loss of form that I notice in life, which I try to oppose with the only weapon I can think of—an idea of literature.

Therefore I can even use negative terms to define the values I am setting out to defend. It remains to be seen whether by using equally convincing arguments one cannot defend the contrary thesis. For example, Giacomo Leopardi maintained that the more vague and imprecise language is, the more poetic it becomes. I might mention in passing that as far as I know Italian is the only language in which the word *vago* (vague) also means “lovely, attractive.” Starting out from the original meaning of “wandering,” the word *vago* still carries an idea of movement and mutability, which in Italian is associated both with uncertainty and indefiniteness and with gracefulness and pleasure.

To put my cult of exactitude to the proof, I will look back at those pages of the *Zibaldone* where Leopardi praises *il vago*. He says: “Le parole *lontano*, *antico* e simili sono poeticissime e piacevoli, perchè destano idee vaste, e indefinite . . . (25 Settembre

1821)" (The words *lontano*, *antico* [faraway, ancient], and similar words are highly poetic and pleasurable because they evoke vast, indefinite ideas). "Le parole *notte*, *notturno* ec., le descrizioni della notte ec., sono poeticissime, perchè la notte confondendo gli oggetti, l'animo non ne concepisce che un'immagine vaga, indistinta, incompleta, sì di essa che quanto ella contiene. Così *oscurità*, *profondo* ec. ec. (28 Settembre 1821)" (The words *notte*, *notturno* [night, nocturnal], etc., descriptions of the night, etc., are highly poetic because, as night makes objects blurred, the mind receives only a vague, indistinct, incomplete image, both of night itself and of what it contains. Thus also with *oscurità* [darkness], *profondo* [deep]).

Leopardi's reasoning is perfectly exemplified by his poems, which lend it the authority of what is proven by facts. Leafing again through the *Zibaldone* in search of other examples of this passion of his, I come across one entry longer than usual, a list of situations propitious to the "indefinite" state of mind:

la luce del sole o della luna, veduta in luogo dov'essi non si vedano e non si scopra la sorgente della luce; un luogo solamente in parte illuminato da essa luce; il riflesso di detta luce, e i vari effetti materiali che ne derivano; il penetrare di detta luce in luoghi dov'ella divenga incerta e impedita, e non bene si distingua, come attraverso un caneto, in una selva, per li balconi socchiusi ec. ec.; la detta luce veduta in luogo, oggetto ec. dov'ella non entri e non percota drittamente, ma vi sia ribattuta e diffusa da qualche altro luogo od oggetto ec. dov'ella venga a battere; in un andito veduto al di dentro o al di fuori, e in una loggia parimente ec. quei luoghi dove la luce si confonde ec. ec. colle ombre, come sotto un portico, in una loggia elevata e pensile, fra le rupi e i burroni, in una valle, sui colli veduti

dalla parte dell'ombra, in modo che ne sieno indorate le cime; il riflesso che produce, per esempio, un vetro colorato su quegli oggetti su cui si riflettono i raggi che passano per detto vetro; tutti quegli oggetti insomma che per diverse materiali e menome circostanze giungono alla nostra vista, *udito* ec. in modo incerto, mal distinto, imperfetto, incompleto, o fuor dell'ordinario ec.

the light of the sun or the moon, seen in a place from which they are invisible and one cannot discern the source of the light; a place only partly illuminated by such light; the reflection of such light, and the various material effects derived from it; the penetration of such light into places where it becomes uncertain and obstructed, and is not easily made out, as through a cane brake, in a wood, through half-closed shutters, etc., etc.; the same light in a place, object, etc., where it does not enter and strike directly, reflected and diffused by some other place or object, etc., where it does strike; in a passageway seen from inside or outside, and similarly in a loggia, etc., places where the light mingles, etc., etc., with the shadows, as under a portico, in a high, overhanging loggia, among rocks and gullies, in a valley, on hills seen from the shady side so that their crests are gilded; the reflection produced, for example, by a colored pane of glass on those objects on which the rays passing through that glass are reflected; all those objects, in a word, that by means of various materials and minimal circumstances come to our sight, *hearing*, etc., in a way that is uncertain, indistinct, imperfect, incomplete, or out of the ordinary.

So this is what Leopardi asks of us, that we may savor the beauty of the vague and indefinite! What he requires is a highly

exact and meticulous attention to the composition of each image, to the minute definition of details, to the choice of objects, to the lighting and the atmosphere, all in order to attain the desired degree of vagueness. Therefore Leopardi, whom I had chosen as the ideal opponent of my argument in favor of exactitude, turns out to be a decisive witness in its favor The poet of vagueness can only be the poet of exactitude, who is able to grasp the subtlest sensations with eyes and ears and quick, unerring hands. It is worthwhile to read this note in the *Zibaldone* right to the end, since the search for the indefinite becomes the observation of all that is multiple, teeming, composed of countless particles.

Per lo contrario la vista del sole o della luna in una campagna vasta ed aprica, e in un cielo aperto ec. è piacevole per la vastità della sensazione. Ed è pur piacevole per la ragione assegnata di sopra, la vista di un cielo diversamente sparso di nuvoletti, dove la luce del sole o della luna produca effetti *variati*, e indistinti, e non ordinari ec. È piacevolissima e sentimentissima la stessa luce veduta nelle città, dov'ella è frastagliata dalle ombre, dove lo scuro contrasta in molti luoghi col chiaro, dove la luce in molte parti degrada appoco appoco, come sui tetti, dove alcuni luoghi riposti nascondono la vista dell'astro luminoso ec. ec. A questo piacere contribuisce la varietà, l'incertezza, il non veder tutto, e il potersi perciò spaziare coll'immaginazione, riguardo a ciò che non si vede. Similmente dico dei simili effetti, che producono gli alberi, i filari, i colli, i pergolati, i casolari, i pagliai, le ineguaglianze del suolo ec. nelle campagne. Per lo contrario una vasta e tutta uguale pianura, dove la luce si spazi e diffonda senza diversità, nè ostacolo; dove l'occhio si perda ec. è pure piacevolissima, per l'idea indefinita in estensione, che deriva da tal veduta. Così un

cielo senza nuvolo. Nel qual proposito osservo che il piacere della varietà e dell'incertezza prevale a quello dell'apparente infinità, e dell'immensa uniformità. E quindi un cielo variamente sparso di nuvoletti, è forse più piacevole di un cielo affatto puro; e la vista del cielo è forse meno piacevole di quella della terra, e delle campagne ec. perchè meno varia (ed anche meno simile a noi, meno propria di noi, meno appartenente alle cose nostre ec.). Infatti, ponetevi supino in modo che voi non vediate se non il cielo, separato dalla terra, voi proverete una sensazione molto meno piacevole che considerando una campagna, o considerando il cielo nella sua corrispondenza e relazione colla terra, ed unitamente ad essa in un medesimo punto di vista.

È piacevolissima ancora, per le sopradette cagioni, la vista di una moltitudine innumerabile, come delle stelle, o di persone ec. un moto multiplice, incerto, confuso, irregolare, disordinato, un ondeggiamento vago ec., che l'animo non possa determinare, nè concepire definitamente e distintamente ec., come quello di una folla, o di un gran numero di formiche o del mare agitato ec. Similmente una moltitudine di suoni irregolarmente mescolati, e non distinguibili l'uno dall'altro ec. ec. (20 Settembre 1821).*

By contrast, the sight of the sun or moon in a vast, airy landscape, and in a clear sky, etc., is pleasing for the vastness of the sensation. And also pleasing, for the reason mentioned above, is the sight of the sky dotted with little clouds, in which the light of the sun or the moon produces varied effects, indistinct, out of the ordinary, etc. Most pleasing and full of feeling is the light seen in cities, where

* *Zibaldone di pensieri*, 2 vols., ed. Francesco Flora (Milan: Mondadori, 1937), I.1145, 1150, 1123-25.

it is slashed by shadows, where darkness contrasts in many places with light, where in many parts the light little by little grows less, as on rooftops, where a few secluded places hide the luminous body from our sight, etc., etc. Contributing to this pleasure is the variety, the uncertainty, the not-seeing-everything, and therefore being able to walk abroad using the imagination in regard to what one does not see. I say similar things of similar effects produced by trees, rows of vines, hills, pergolas, outlying houses, haystacks, wrinkles in the soil, etc., of the landscape. On the contrary, a vast level plain, where the light sweeps and spreads without variety or obstacle, where the eye loses itself, etc., is also highly pleasurable, for the idea of infinite extension that results from such a sight. The same is true of a cloudless sky. In this regard I observe that the pleasure of variety and uncertainty is greater than that of apparent infinity and immense uniformity. And therefore a sky dotted with small clouds is perhaps more pleasurable than a totally clear sky; and to look at the sky is perhaps less pleasurable than to look at the earth and the landscape, etc., because it is less varied (and also less like us, less of our own, belonging less to things that are ours, etc.). In fact, if you lie down on your back so that you see nothing but the sky, separated from the earth, you will have a far less pleasing feeling than if you look at a landscape, or look at the sky in proportion and relation to the earth, integrating them from the same point of view.

Highly pleasing also, for the above-mentioned reasons, is the sight of an innumerable multitude, as of stars, people, etc., a multiple motion, uncertain, confused, irregular, disordered, a vague rising and falling, etc., which the mind cannot conceive definitely or distinctly, etc., like that of a

crowd, or a swarm of ants, or a rough sea, etc. Similarly a multitude of sounds, irregularly mingled together, not to be distinguished one from another.

Here we touch on one of the nerve centers of Leopardi's poetics, as embodied in his most famous and beautiful lyric, "L'infinito." Protected by a hedge, on the far side of which he sees only the sky, the poet imagines infinite space and feels pleasure and fear together. The poem dates from 1819. The notes I read from the *Zibaldone* date from two years later and show that Leopardi went on thinking about the problem aroused by the composition of "L'infinito." In his reflections, two terms are constantly compared: the "indefinite" and the "infinite." For Leopardi, unhappy hedonist that he was, what is unknown is always more attractive than what is known; hope and imagination are the only consolations for the disappointments and sorrows of experience. Man therefore projects his desire into infinity and feels pleasure only when he is able to imagine that this pleasure has no end. But since the human mind cannot conceive the infinite, and in fact falls back aghast at the very idea of it, it has to make do with what is indefinite, with sensations as they mingle together and create an impression of infinite space, illusory but pleasurable all the same: "E il naufragar m'è dolce in questo mare" (And sweet to me is foundering in this sea). It is not only in the famous ending of "L'infinito" that gentleness prevails over fear, for what the lines communicate by the music of the words is, throughout, a sense of gentleness, even when these words express anguish.

I realize that I am interpreting Leopardi purely in terms of sensations, as if I accepted the image he wants to give of himself as a disciple of eighteenth-century Sensism. In fact the problem Leopardi is facing is speculative and metaphysical, a problem in

the history of philosophy from Parmenides to Descartes and Kant: the relationship between the idea of infinity as absolute space and absolute time, and our empirical knowledge of space and time. Leopardi therefore starts with the rigorous abstraction of a mathematical notion of space and time, and compares this to the vague, undefined flux of sensations.

So, too, exactitude and lack of definition are the poles between which the philosophical and ironic thoughts of the character Ulrich oscillate in the endless (and indeed unfinished) novel by Robert Musil, *Der Mann ohne Eigenschaften* (The Man without Qualities):

Ist nun das beobachtete Element die Exaktheit selbst, hebt man es heraus und lässt es sich entwickeln, betrachtet man es als Denkgewohnheit und Lebenshaltung und lässt es seine beispielgebende Kraft auf alles auswirken, was mit ihm in Berührung kommt, so wird man zu einem Menschen geführt, in dem eine paradoxe Verbindung von Genauigkeit und Unbestimmtheit stattfindet. Er besitzt jene unbestechliche gewollte Kaltblütigkeit, die das Temperament der Exaktheit darstellt; über diese Eigenschaft hinaus ist aber alles andere unbestimmt. (I, part 2, chap. 61; Rowolt edition, 1978, I.246–247)

If now the element under observation is exactitude itself, if one isolates it and allows it to develop, if one regards it as an intellectual habit and a way of living and lets it exert its exemplary influence on everything that comes into contact with it, the logical conclusion is a human being with the paradoxical combination of precision and indefiniteness. He possesses an incorruptible, deliberate cold-

bloodedness, the temperament that goes with exactitude; but apart from and beyond this quality, all is indefinite.

The point at which Musil comes closest to a possible solution is when he mentions the fact that mathematical problems do not admit of a general solution, but that particular solutions, taken all together, can lead to a general solution (chap. 83). He thinks that this method might be applied to human life. Many years later another writer, Roland Barthes, in whose mind the demon of exactitude lived side by side with the demon of sensitivity, asked himself if it would not be possible to conceive of a science of the unique and unrepeatable: "Pourquoi n'y aurait-il pas, en quelque sorte, une science nouvelle par objet? Une *Mathesis singularis* (et non plus *universalis*)?" [*La chambre claire*, 1980, p. 21] (Why couldn't there be, in some way, a new science for every object? A *mathesis singularis*, and no longer *universalis*?).

If Musil's Ulrich soon resigns himself to the defeats that the passion for exactitude is bound to suffer, Paul Valéry's Monsieur Teste, another great intellectual personage of this century, has no doubts about the fact that the human spirit can fulfill itself in the most exact and rigorous way. And if Leopardi, poet of life's sadness, shows the highest degree of exactitude in describing indefinite sensations that give pleasure, Valéry, poet of impassive rigor of mind, shows the highest degree of exactitude in putting his Monsieur Teste face to face with pain, and making him combat physical suffering by an exercise in abstract geometry.

"J'ai," dit-il . . . "pas grand'chose. J'ai . . . un dixième de seconde qui se montre . . . Attendez . . . Il y a des instants où mon corps s'illumine . . . C'est très curieux. J'y vois tout à coup en moi . . . je distingue les profondeurs des couches de ma chair; et je sens des zones de douleur, des anneaux, des pôles, des aigrettes de douleur. Voyez-vous ces figures

vives? cette géométrie de ma souffrance? Il y a de ces éclairs qui ressemblent tout à fait à des idées. Ils font comprendre—d'ici, jusque-là . . . Et pourtant ils me laissent *incertain*. Incertain n'est pas le mot . . . Quand *cela* va venir, je trouve en moi quelque chose de confus ou de diffus. Il se fait dans mon être des endroits . . . brumeux, il y a des étendues qui font leur apparition. Alors, je prends dans ma mémoire une question, un problème quelconque . . . Je m'y enfonce. Je compte des grains de sable . . . et, tant que je les vois . . . — Ma douleur grossissante me force à l'observer. J'y pense!—Je n'attends que mon cri . . . et dès que je l'ai entendu—l'*objet*, le terrible *objet*, devenant plus petit, et encore plus petit, se dérobe à ma vue intérieure." (Gallimard edition, 1946, pp. 32–33)

"It is nothing . . . much," he said. "Nothing but . . . a tenth of a second appearing . . . Wait . . . At certain moments my body is illuminated . . . It is very curious. Suddenly I see into myself . . . I can make out the depths of the layers of my flesh; and I feel zones of pain . . . rings, poles, plumes of pain. Do you see these living forms, this geometry of my suffering? Some of these flashes are exactly like ideas. They make me understand—from here, to there . . . And yet they leave me *uncertain*. Uncertain is not the word . . . When *it* is about to appear, I find in myself something confused or diffused. Areas that are . . . hazy occur inside me, wide spaces come into view. Then I choose a question from my memory, any problem at all . . . I plunge into it. I count grains of sand . . . and as long as I can see them . . . But increasing pain forces me to observe it. I think about it! I only await my cry . . . and as soon as I have heard it—the *object*, the terrible *object*, getting smaller, and still smaller, vanishes from my inner sight."

In our century Paul Valéry is the one who has best defined poetry as a straining toward exactitude. I am speaking chiefly of his work as a critic and essayist, in which the poetics of exactitude may be traced in a straight line through Mallarmé to Baudelaire and from Baudelaire to Edgar Allan Poe.

In Poe—the Poe of Baudelaire and Mallarmé—Valéry sees "le démon de la lucidité, le génie de l'analyse, et l'inventeur des combinaisons les plus neuves et les plus séduisantes de la logique avec l'imagination, de la mysticité avec le calcul, le psychologue de l'exception, l'ingénieur littéraire qui approfondit et utilise toutes les ressources de l'art" (the demon of lucidity, the genius of analysis, and the inventor of the newest, most seductive combinations of logic and imagination, of mysticism and calculation; the psychologist of the exceptional; the literary engineer who studied and utilized all the resources of art). Valéry writes this in his essay "Situation de Baudelaire," which for me has the value of a poetic manifesto, together with another essay of his on Poe and cosmogony, in which he deals with *Eureka*.

In the essay on Poe's *Eureka*, Valéry questions himself on cosmogony as a literary genre rather than as scientific speculation and achieves a brilliant refutation of the idea of "universe," which is also a reaffirmation of the mythic force that every image of "universe" carries with it. Here too, as in Leopardi, we find both attraction and repulsion with regard to the infinite. And here too we find cosmological conjectures as a literary genre, such as Leopardi amused himself with in certain "apocryphal" prose pieces: "Frammento apocrifo di Stratone da Lampsaco" (Apocryphal Fragment of Strato of Lampsacus), on the beginning and particularly the end of the terrestrial globe, which flattens and empties out like the rings of Saturn and is dispersed until it burns up in the sun; or his translation of an apocryphal Talmudic text, "Cantico del gallo silvestre" (Song of the Great Wild Rooster), where the entire universe is extinguished and disappears: "un silenzio

nudo, e una quiete altissima, empieranno lo spazio immenso. Così questo arcano mirabile e spaventoso dell'esistenza universale, innanzi di essere dichiarato nè inteso, si dileguerà e perdersi" (a naked silence and a most profound quiet will fill the immensity of space. So this marvelous and frightening mystery of universal existence, before being declared or understood, will fade away and be lost). Here we see that what is terrifying and inconceivable is not the infinite void, but existence.

This talk is refusing to be led in the direction I set myself. I began by speaking of exactitude, not of the infinite and the cosmos. I wanted to tell you of my fondness for geometrical forms, for symmetries, for numerical series, for all that is combinatory, for numerical proportions; I wanted to explain the things I had written in terms of my fidelity to the idea of limits, of measure But perhaps it is precisely this idea of forms that evokes the idea of the endless: the sequence of whole numbers, Euclid's straight lines Rather than speak to you of what I have written, perhaps it would be more interesting to tell you about the problems that I have *not* yet resolved, that I don't know how to resolve, and what these will cause me to write: Sometimes I try to concentrate on the story I would like to write, and I realize that what interests me is something else entirely or, rather, not anything precise but everything that does not fit in with what I ought to write—the relationship between a given argument and all its possible variants and alternatives, everything that can happen in time and space. This is a devouring and destructive obsession, which is enough to render writing impossible. In order to combat it, I try to limit the field of what I have to say, divide it into still more limited fields, then subdivide these again, and so on and on. Then another kind of vertigo seizes me, that of the detail of the detail

of the detail, and I am drawn into the infinitesimal, the infinitely small, just as I was previously lost in the infinitely vast.

"Le bon Dieu est dans le détail." This statement of Flaubert's I would explain in the light of the philosophy of Giordano Bruno, that great visionary cosmologist, who sees the universe as infinite and composed of innumerable worlds but who cannot call it "totally infinite" because each of these worlds is finite. God, on the other hand, is totally infinite: "tutto lui è in tutto il mondo, ed in ciascuna sua parte infinitamente e totalmente" (the whole of him is in the whole world, and in each of his parts infinitely and totally).

Among the Italian books in the last few years which I have most often read, reread, and thought about is Paolo Zellini's *Breve storia dell'infinito* (Short History of the Infinite, 1980). It opens with Borges' famous invective against the infinite from "Avatares de la tortuga" (Avatars of the Tortoise)—it is the one concept that corrupts and confuses all others—and then goes on to review all arguments on the subject, with the result that it dissolves and reverses the extension of the infinite into the density of the infinitesimal.

I think that this bond between the formal choices of literary composition and the need for a cosmological model (or else for a general mythological framework) is present even in those authors who do not explicitly declare it. This taste for geometrical composition, of which we could trace a history in world literature starting with Mallarmé, is based on the contrast of order and disorder fundamental to contemporary science. The universe disintegrates into a cloud of heat, it falls inevitably into a vortex of entropy, but within this irreversible process there may be areas of order, portions of the existent that tend toward a form, privileged points in which we seem to discern a design or perspective. A work of literature is one of these minimal portions in which

the existent crystallizes into a form, acquires a meaning—not fixed, not definitive, not hardened into a mineral immobility, but alive as an organism. Poetry is the great enemy of chance, in spite of also being a daughter of chance and knowing that, in the last resort, chance will win the battle. “Un coup de dés n’abolira jamais le hasard” (One throw of the dice will never annul chance).

It is in this context that we should view the reevaluation of logical, geometrical, and metaphysical procedures that prevailed in the figurative arts during the first decades of this century and thereafter in literature. The emblem of the crystal might be used to distinguish a whole constellation of poets and writers, very different from one another, such as Paul Valéry in France, Wallace Stevens in the United States, Gottfried Benn in Germany, Fernando Pessoa in Portugal, Ramon Gómez de la Serna in Spain, Massimo Bontempelli in Italy, and Jorge Luis Borges in Argentina.

The crystal, with its precise faceting and its ability to refract light, is the model of perfection that I have always cherished as an emblem, and this predilection has become even more meaningful since we have learned that certain properties of the birth and growth of crystals resemble those of the most rudimentary biological creatures, forming a kind of bridge between the mineral world and living matter.

Among the scientific books into which I poke my nose in search of stimulus for the imagination, I recently happened to read that the models for the process of formation of living beings “are best visualized by the *crystal* on one side (invariance of specific structures) and the *flame* on the other (constancy of external forms in spite of relentless internal agitation).” I am quoting from Massimo Piattelli-Palmarini’s introduction to the volume devoted to the debate between Jean Piaget and Noam Chomsky in

1975 at the Centre Royaumont (*Language and Learning*, 1980, p. 6). The contrasting images of flame and crystal are used to make visible the alternatives offered to biology, and from this pass on to theories of language and the ability to learn. For the moment I will leave aside the implications for the philosophy of science embodied in the positions stated by Piaget, who is for the principle of “order out of noise”—the flame—and Chomsky, who is for the “self-organizing system,” the crystal.

What interests me here is the juxtaposition of these two symbols, as in one of those sixteenth-century emblems I mentioned in my last lecture. Crystal and flame: two forms of perfect beauty that we cannot tear our eyes away from, two modes of growth in time, of expenditure of the matter surrounding them, two moral symbols, two absolutes, two categories for classifying facts and ideas, styles and feelings. A short while ago I suggested a “Party of the Crystal” in twentieth-century literature, and I think one could draw up a similar list for a “Party of the Flame.” I have always considered myself a partisan of the crystal, but the passage just quoted teaches me not to forget the value of the flame as a way of being, as a mode of existence. In the same way, I would like those who think of themselves as disciples of the flame not to lose sight of the tranquil, arduous lesson of the crystal.

A more complex symbol, which has given me greater possibilities of expressing the tension between geometric rationality and the entanglements of human lives, is that of the city. The book in which I think I managed to say most remains *Invisible Cities*, because I was able to concentrate all my reflections, experiments, and conjectures on a single symbol; and also because I built up a many-faceted structure in which each brief text is close to the others in a series that does not imply logical sequence or a hierarchy, but a network in which one can follow multiple routes and draw multiple, ramified conclusions.

In my *Invisible Cities* every concept and value turns out to be double—even exactitude. At a certain point Kublai Khan personifies the intellectual tendency toward rationalization, geometry, and algebra, reducing knowledge of his empire to the combination of pieces on a chessboard. The cities that Marco Polo describes to him with a wealth of detail Kublai represents with various arrangements of castles, bishops, knights, kings, queens, and pawns on black and white squares. The final conclusion to which this operation leads him is that the object of his conquest is nothing other than the block of wood on which each piece rests: an emblem of nothingness. But just at this moment comes a *coup de scène*, for Marco Polo requests Kublai to look more closely at what he sees as nothingness:

Il Gran Kan cercava d'immedesimarsi nel gioco: ma adesso era il perché del gioco a sfuggirgli. Il fine d'ogni partita è una vincita o una perdita: ma di cosa? Qual era la vera posta? Allo scacco matto, sotto il piede del re sbalzato via dalla mano del vincitore, resta il nulla: un quadrato nero o bianco. A forza di scorporare le sue conquiste per ridurle all'essenza, Kublai era arrivato all'operazione estrema: la conquista definitiva, di cui i multiformi tesori dell'impero non erano che involucri illusori, si riduceva a un tassello di legno piallato.

Allora Marco Polo parlò:—La tua scacchiera, sire, è un intarsio di due legni: ebano e acero. Il tassello sul quale si fissa il tuo sguardo illuminato fu tagliato in uno strato del tronco che crebbe in un anno di siccità: vedi come si dispongono le fibre? Qui si scorge un nodo appena accennato: una gemma tentò di spuntare in un giorno di primavera precoce, ma la brina della notte l'obbligò a desistere—. Il Gran Kan non s'era fin'allora reso conto che lo straniero

sapesse esprimersi fluentemente nella sua lingua, ma non era questo a stupirlo.—Ecco un poro più grosso: forse è stato il nido d'una larva; non d'un tarlo, perché appena nato avrebbe continuato a scavare, ma d'un bruco che rosicchiò le foglie e fu la causa per cui l'albero fu scelto per essere abbattuto Questo margine fu inciso dall'ebanista con la sgorbia perché aderisse al quadrato vicino, più spor-gente

La quantità di cose che si potevano leggere in un pezzo di legno liscio e vuoto sommergeva Kublai; già Polo era venuto a parlare dei boschi d'ebano, delle zattere di tronchi che discendono i fiumi, degli approdi, delle donne alle finestre

The Great Khan tried to concentrate on the game: but now it was the game's reason that eluded him. The end of every game is a gain or a loss: but of what? What were the real stakes? At checkmate, beneath the foot of the king, knocked aside by the winner's hand, nothingness remains: a black square, or a white one. By disembodiment his conquests to reduce them to the essential, Kublai had arrived at the extreme operation: the definitive conquest, of which the empire's multiform treasures were only illusory enclaves; it was reduced to a square of planed wood.

Then Marco Polo spoke: "Your chessboard, sire, is inlaid with two woods: ebony and maple. The square on which your enlightened gaze is fixed was cut from the ring of a trunk that grew in a year of drought: you see how its fibers are arranged? Here a barely hinted knot can be made out: a bud tried to burgeon on a premature spring day, but the night's frost forced it to desist."

Until then the Great Khan had not realized that the

foreigner knew how to express himself fluently in his language, but it was not this fluency that amazed him.

"Here is a thicker pore: perhaps it was a larvum's nest; not a woodworm, because, once born, it would have begun to dig, but a caterpillar that gnawed the leaves and was the cause of the tree's being chosen for chopping down . . . This edge was scored by the wood carver with his gouge so that it would adhere to the next square, more protruding. . . ."

The quantity of things that could be read in a little piece of smooth and empty wood overwhelmed Kublai; Polo was already talking about ebony forests, about rafts laden with logs that come down the rivers, of docks, of women at the windows . . .*

From the moment I wrote that page it became clear to me that my search for exactitude was branching out in two directions: on the one side, the reduction of secondary events to abstract patterns according to which one can carry out operations and demonstrate theorems; and on the other, the effort made by words to present the tangible aspect of things as precisely as possible.

The fact is, my writing has always found itself facing two divergent paths that correspond to two different types of knowledge. One path goes into the mental space of bodiless rationality, where one may trace lines that converge, projections, abstract forms, vectors of force. The other path goes through a space crammed with objects and attempts to create a verbal equivalent of that space by filling the page with words, involving a most careful, painstaking effort to adapt what is written to what is not written, to the sum of what is sayable and not sayable. These are two different drives toward exactitude that will never attain com-

**Invisible Cities*, translated by William Weaver (New York: Harcourt Brace Jovanovich, 1974), pp. 131-132.

plete fulfillment, one because "natural" languages always say something *more* than formalized languages can—natural languages always involve a certain amount of noise that impinges upon the essentiality of the information—and the other because, in representing the density and continuity of the world around us, language is revealed as defective and fragmentary, always saying something *less* with respect to the sum of what can be experienced.

I continually switch back and forth between these two paths, and when I feel I have fully explored the possibilities of one, I rush across to the other, and vice versa. Thus in the last few years I have alternated my exercises in the structure of the story with other exercises in description, today a very neglected art. Like a schoolboy whose homework is to "Describe a giraffe" or "Describe the starry sky," I applied myself to filling a notebook with such exercises and made a book out of the material. This is *Mr. Palomar*, which was recently published in English translation (1985). It is a kind of diary dealing with minimal problems of knowledge, ways of establishing relationships with the world, and gratifications and frustrations in the use of both silence and words.

In my quests of this sort I have always borne in mind the practice of poets. I think of William Carlos Williams, who describes the leaves of the cyclamen so minutely that we can visualize the flower poised above the leaves he has drawn for us, thereby giving the poem the delicacy of the plant. I think of Marianne Moore who, in depicting her scaly anteater and her nautilus and all the other animals in her bestiary, blends information from zoology books with symbolic and allegorical meanings that make each of her poems a moral fable. And I think also of Eugenio Montale, who may be said to sum up the achievement of both in his poem, "L'anguilla." This is a poem consisting of a

single very long sentence in the shape of an eel, following the entire life of the eel, and making the eel into a moral symbol.

But above all I think of Francis Ponge because, with his little prose poems, he created a genre unique in contemporary literature: that schoolboy's "exercise book" in which he has to start by practicing arranging his words as an extension of the appearances of the world, and going through a series of tryouts, *brouillons*, approximations. Ponge for me is a peerless master because the brief texts of *Le parti pris des choses* (The Purpose of Things) and his other books on similar lines, speaking of a shrimp or a pebble or a cake of soap, give us the best example of a battle to force language to become the language of *things*, starting from things and returning to us changed, with all the humanity that we have invested in things. Ponge's declared intention was, by means of his brief texts and their elaborate variants, to compose a new *De Rerum Natura*. I believe that he may be the Lucretius of our time, reconstructing the physical nature of the world by means of the impalpable, powder-fine dust of words.

It seems to me that Ponge's achievement is on the same level as Mallarmé's, though in a divergent and complementary direction. In Mallarmé the word attains the acme of exactitude by reaching the last degree of abstraction and by showing nothingness to be the ultimate substance of the world. In Ponge the world takes the form of the most humble, secondary, and asymmetrical things, and the word is what serves to make us aware of the infinite variety of these irregular, minutely complicated forms.

There are those who hold that the word is the way of attaining the substance of the world, the final, unique, and absolute substance. Rather than representing this substance, the word identifies itself with it (so that it is wrong to call the word merely a means to an end): there is the word that knows only itself, and

no other knowledge of the world is possible. There are others who regard the use of the word as an unceasing pursuit of things, an approach not to their substance but to their infinite variety, touching on their inexhaustibly multiform surface. As Hoffmannsthal said: "Depth is hidden. Where? On the surface." And Wittgenstein went even further than this: "For what is hidden . . . is of no interest to us."

I would not be so drastic. I think we are always searching for something hidden or merely potential or hypothetical, following its traces whenever they appear on the surface. I think our basic mental processes have come down to us through every period of history, ever since the times of our Paleolithic forefathers, who were hunters and gatherers. The word connects the visible trace with the invisible thing, the absent thing, the thing that is desired or feared, like a frail emergency bridge flung over an abyss.

For this reason, the proper use of language, for me personally, is one that enables us to approach things (present or absent) with discretion, attention, and caution, with respect for what things (present or absent) communicate without words.

Leonardo da Vinci offers a significant example of the battle with language to capture something that evaded his powers of expression. Leonardo's codices comprise an extraordinary documentation of struggle with language, a gnarled, spiky language, from which he seeks richer, more subtle, and more precise expression. The various phases in the treatment of an idea—like those of Francis Ponge, who ends by publishing them in sequence because the real work consists not in its definitive form, but in the series of approximations made to attain it—are, for Leonardo as writer, the proof of the effort he invested in writing as an instrument of knowledge; and also of the fact that, in the case of all the books

he thought of writing, he was more interested in the process of inquiry than in the completion of a text for publication. From time to time, even the subjects are similar to Ponge's as in the series of short fables that Leonardo wrote about objects or animals.

Let us take the fable about fire, for example. Leonardo gives us a rapid summary: the fire, offended because the water in the pan is above him, although he is the "higher" element, shoots his flames up and up until the water boils, overflows, and puts him out. Leonardo then elaborates this in three successive drafts, all of them incomplete, written in three parallel columns. Each time he adds some details, describing how, from a little piece of charcoal, a flame bursts through the gaps in the wood, crackling and swelling. But he soon breaks off, as if becoming aware that there is no limit to the minuteness of detail with which one can tell even the simplest story. Even a tale of wood catching fire in the kitchen fireplace can grow from within until it becomes infinite.

Leonardo, "omo senza lettere" (an unlettered man), as he described himself, had a difficult relationship with the written word. His knowledge was without equal in all the world, but his ignorance of Latin and grammar prevented him from communicating in writing with the learned men of his time. Certainly he thought he could set down much of his science more clearly in drawings than in words. "O scrittore, con quali lettere scriverai tu con tal perfezione la intera figurazione qual fa qui il disegno?" (O writer, with what letters can you convey the entire figuration with such perfection as drawing gives us here?), he wrote in his notebooks on anatomy. And not just in science but also in philosophy, he was confident he could communicate better by means of painting and drawing. Still he also felt an incessant need to write, to use writing to investigate the world in all its polymorphous manifestations and secrets, and also to give shape to his fantasies, emotions, and rancors—as when he inveighs against

men of letters, who were able only to repeat what they had read in the books of others, unlike those who were among the "inventori e interpreti tra la natura e li omini" (inventors and interpreters between nature and men). He therefore wrote more and more. With the passing of the years, he gave up painting and expressed himself through writing and drawing, as if following the thread of a single discourse in drawings and in words, filling his notebooks with his left-handed mirror writing.

On folio 265 of the Codex Atlanticus, Leonardo begins to jot down evidence to prove a theory of the growth of the earth. After giving examples of buried cities swallowed up by the soil, he goes on to the marine fossils found in the mountains and in particular to certain bones that he supposes must have belonged to an antediluvian sea monster. At this moment his imagination must have been caught by a vision of the immense animal as it was swimming among the waves. At any rate, he turns the page upside down and tries to capture the image of the animal, three times attempting a sentence that will convey all the wonder of that evocation.

O quante volte fusti tu veduto in fra l'onde del gonfiato e grande oceano, col setoluto e nero dosso, a guisa di montagna e con grave e superbo andamento!

O how many times were you seen among the waves of the great swollen ocean, with your black and bristly back, looming like a mountain, and with grave and stately bearing!

Then he tries to give more movement to the monster's progress by introducing the verb *volteggiare* (to whirl).

E spesse volte eri veduto in fra l'onde del gonfiato e grande oceano, e col superbo e grave moto gir volteggiando in fra