

9. Bachelard's footnote (amended): M. Emmanuel, *Histoire de la langue musicale* (published in two volumes, Paris, 1911), 1, p. 253. Maurice Emmanuel (1862–1938) was, like Bachelard, a native of Bar-sur-Aube; a distinguished musician—composer, performer, scholar, and writer—he was appointed to a Chair in the history of music created for him at the Collège de France in 1898 but which was soon suppressed due to a faction opposed to this discipline, Emmanuel then being obliged to earn his living teaching music in a girls' lycée.

10. In prosody, an anapaest is a foot consisting of two short syllables and one long one (» » -).

11. In *canon cancrizans*, which is sometimes referred to as both retrograde canon and 'crab canon', the melody is given out backwards; the etymology here is rather misleading, *cancrizans* being derived from the Latin *cancer*, the crab with its sideways movement.

12. Bachelard's footnote: a very succinct account of Jean Nogué's theory is found in his excellent article 'Ordre et durée', *Revue philosophique* (July 1932).

13. Bachelard's footnote: L. Dauriac, 'Sur l'origine commune du langage verbal et du langage musical', *Journal de psychologie* (1932), p. 834.

14. Bachelard's footnote (amended): this reference is taken from M. Emmanuel, *Histoire de la langue musicale*, 2, p. 378.

15. Bachelard's footnote: *Journal de psychologie* (1926), 206. He does not give the article's title or page references for his other quotations from it.

Chapter 8

Rhythmanalysis

The very complex and varied studies by Lucio Alberto Pinheiro dos Santos that we have been able to see are in the form of a sequence of essays described by the author himself as provisional and open to revision.¹ Our intention is neither to give an overall view of these nor to describe all the many lines of development here. We simply wish to decide on some of his general themes and to examine the resonance these themes may have for our own argument concerning the essentially dialectical durations that are constructed on waves and rhythms. Were it to be as fully expounded as it deserves, Pinheiro dos Santos's work would require a sizeable book on it. It suggests experiments in many fields which should tempt those looking for new ideas for their work.

I

Pinheiro dos Santos studies the phenomenology of rhythm from three points of view: material, biological, and psychological. We shall only outline what concerns the first two of these since in this short book, our main interest is the foundations for the psychology of duration.

It is now one of the most important principles of modern physics that matter is transformed into wave radiation and that conversely, wave radiation is transformed into matter. Such an easily reversible transformation must very naturally lead us to think that, in some respects,

matter and radiation are similar. This amounts to saying that like radiation, matter must have wave and rhythmic characteristics. Matter is not spread out in space and indifferent to time; it does not remain totally constant and totally inert in a uniform duration. Nor indeed does it live there like something that wears away and is dispersed. It is not just sensitive to rhythms but it exists, in the fullest sense of the term, on the level of rhythm. The time in which matter develops some of its fragile manifestations is a time that undulates like a wave that has but one uniform way of being: the regularity of its frequency. As soon as the different substantial powers of matter are studied in their detail, these powers present themselves as frequencies. In particular, as soon as we get down to the detail of exchanges of energy between different kinds of chemical matter, these exchanges are seen to take place in a rhythmic way, through the indispensable intermediary of radiations with specific frequencies. Energy that is looked at very generally may no doubt appear to lose its rhythms, letting go of what it has of undulating, wave time; it is thus seen as an overall result, as an overview in which time itself has lost its wave structure. We pay for electricity by the kilowatt-hour and for coal by the hundred-weight, yet we are nonetheless both lit and heated by vibrations. Forms of energy which are still more constant must not delude us. The kinetic theory of gases has taught us that a gas enclosed within a pump maintains the piston at an invariable level through a large number of irregular collisions. It would doubtless not be contradictory that a temporal accord between these collisions might come about, with the piston jumping simply as the effect of these synchronised collisions and without there being any macroscopic reason for it. Physicists have confidence though: the law of large numbers *preserves* its phenomena; the chances of there being a temporal accord between collisions have negligible probability. In a similar way, a kinetic theory of solids would show us that the most stable patterns owe their stability to rhythmic discord. They are the statistical patterns of a temporal disorder, and nothing more than this. Our houses are built with an anarchy of vibrations. We walk on an anarchy of vibrations. We sit down on an anarchy of vibrations. The pyramids of Egypt, whose function is to contemplate the unchanging centuries, are endless cacophonies. A magician who as the conductor of the orchestra of matter could bring material rhythms together, would make all these stones vanish into thin air. The fundamental nature of rhythm for matter is clearly shown by this possibility of there being a purely temporal

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explosion, due solely to an action that synchronises the superimposed times of the different elements.

Were we to tackle the problem with regard to a particular particle, our conclusion would be the same. If a particle ceased to vibrate, it would cease to be. It is now impossible to conceive the existence of an element of matter without adding to that element a specific frequency. We can therefore say that vibratory energy is the energy of existence. Why then should we not have the right to place vibration at the heart of time in its original form? We do so without any hesitation. For us, this first form of time is time that vibrates. Matter exists in and only in a time that vibrates, and it is because it rests on this time that it has energy even in repose. We would therefore be forgetting a fundamental characteristic if we were to take time to be a principle of *uniformity*. We must ascribe fundamental duality to time since the duality inherent in vibration is its operative attribute. We now understand why Pinheiro dos Santos has no hesitation in writing that 'matter and radiation exist only in and through rhythm' (volume 2, section 1, p. 18). This is not, as is so often the case, a declaration inspired by a mystique of rhythm; it really is a new intuition, firmly based on the principles of modern wave physics.

This being so, the initial problem is not so much to ask how matter vibrates as to ask how vibration can take on material aspects. The theory of the relations between substance and time can therefore be seen in a completely new metaphysical light: it should not be said that substance develops and reveals itself in the form of rhythm, but rather that it is *regular* rhythm which appears in the form of a *specific* material attribute. The material aspect—with the pseudo-riches of its irrationality—is but a confused aspect. Strictly speaking, the material aspect is *realised confusion*. Since chemistry studies not *matter* but *pure substance*, it will sooner or later lead to the definition of the precise qualities of this pure substance as temporal qualities, that is to say as qualities that are wholly characterised by rhythms. In this connection, photochemistry already suggests really new substances which bear the mark of vibrating time. We can predict that chemists will soon produce substances with space-time that has been made symmetrical and rhythmic. In other words, the metaphysician wishing to establish intuitions that are in agreement with current scientific needs must put symmetry-rhythmy in the place of the doubly uniform space-time used in the era preceding de Broglie.²

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It is clear to us that realism does need a metaphysical inversion for it to correspond to the principles of wave materialism. This is a point to which we intend to return in another book in which we shall be able to take all the scientific proof into account. Nor shall we discuss here whether realism thus *inverted* is still strictly speaking realism. All we are doing for the moment is outlining how rhythmanalysis has a basis in physics and showing that this theory, which is really more biological and psychological in fact, stems from a general metaphysical view.

II

We shall be equally brief with regard to Pinheiro dos Santos's proposal of a wave biology. Referring to a large number of facts, drawn for the most part from homeopathy, the author suggests a 'wave' interpretation, that is to say the explanation of the action of substance by substituting for substance a particular kind of radiation. Dilution, which is always very great in homeopathy, in fact favours the vibrating temporalisation of medical substances. This interpretation is plausible, although it does not completely reject the traditional substantialist interpretation. It would doubtless be necessary to set up experiments in discrimination—for example, real medicinal interferences which are conceived in a vibratory way—in order to legitimise fully the wave form Pinheiro dos Santos suggests. Let us simply try to give a metaphysical description of the two opposite and complementary points of view of substance and rhythm.

The usual substantialist intuition is first of all contradicted in a way by the existence of homeopathy. Indeed, for substantialist intuition in its naive form, that is to say in its pure form, a substance acts in proportion to its mass, up to a certain limit at least. It accepts that there may be some very small doses, too much of which would produce disturbances. It does not find it easy to accept the effectiveness of the extreme dilutions used by homeopaths. As long as medical substances are considered to be quantitative realities, it will not be easy to understand the action of substance taking place in, so to speak, *inverse* ratio to its quantity. In the same way, in a rational approach to health-care, food substances are always held to be dependent on an assessment of their weight. The human body is like a food store in which no shelf must remain empty. We must take our daily dose of the different food-stuffs that, matter for

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matter, must come together again in the body's economy. Here again, quantitative intuition is placed firmly in the foreground.

A psychoanalysis of the feeling of having could be undertaken at this point. Jokes about homeopaths go down very well and this is doubtless because of the predominant pleasure of possession, of possession that is very clearly physical and material, that results from consciousness of digesting and growing. It is against this major and immediate sense of security given by the joy of swallowing that homeopathy and a wave conception of healthcare must react. These theories concerning small dosage do not just have the idea of substance against them but also the obvious feeling of strength we get from possessing a substance, from cherishing our reserves and our capital.

However, against this first reluctance to be convinced, let us accept homeopathy and see how Pinheiro dos Santos interprets it rhythmanalytically. He views assimilation as not so much an exchange of substances but an exchange of energy; since energy in the detail of its development cannot escape vibratory form, Pinheiro dos Santos proposes the systematic introduction of radiation between the substance that is swallowed and the substance that is assimilated. The phrase *assimilated substance* has little meaning, in fact. If this is simply a matter of storing something away, as in the case of adipose cells, then we are not dealing with the anagenetic action of life. It is at the very moment that substance is expended and destroyed that its action must be understood. (We are not saying this should be at the moment that substance is transformed, for wave materialism can postulate the destruction of matter.) Now according to wave biology, it is not possible for substance to act truly if it is not *temporalised* in a vibratory form, following its destruction. When it is stored away, it is shut into inert space. It only acts where it is, that is to say on itself. In order to go beyond itself, it has to be propagated and it can only be propagated in waves. External action is necessarily action that vibrates. Moreover, the intervention of a wave will always be necessary in order to awaken and activate a substance that has been stored away. We must therefore always return to the period of activation in order to understand the action of a food-stuff or a medicine.

Hence, therapeutic actions must be understood as going from rhythm to rhythm rather than from thing to thing. Which vibrations do we normally need? This question is vital, in the true sense of this word. Which vibrations die away or are aroused? Which are those to be revived or moderated? These are the therapeutic questions.

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How though will this general view help to explain homeopathy? It is because doses are ultra-diluted that medical substances can propagate rhythms. In a massive form in fact, substance would in a way absorb its own rhythms; it would start resonating with itself, without fulfilling its role as a stimulus external to itself. It would escape indispensable destruction and fail to play with nothingness. It would reappropriate itself. Indeed, radiation physics does show that substances act above all through what is on the surface and that radiations from what lies deep are absorbed by radiant matter itself. The dilution of homeopathic matter is thus a condition of its vibratory action.

In a similar way, we can understand that the more delicate and rare are the aromas and bouquets of food and wine, the more effectively they act on our digestion. Indeed, these complex, fragile substances are easily broken down or neutralised, and easily destroyed. Now, a substance that goes back to nothingness causes radiation. 'The destructive wave' will be especially penetrating and active here. The superficial epicureanism for which smells and flavours do no more than whet the appetite must therefore, in the light of the facts, be seen as very inadequate. Pleasure has an effectiveness that goes far deeper. The question can be raised as to whether an active rhythm-analytical theory of sensation might not complete the traditional theory, wholly passive and receptive as it is. Excitation would then be a resonance that would pair with specific vibrations produced by the destruction of particular substances. All digestive values would therefore have to be transmuted. For a deep Epicureanism, ambrosia and heavenly distillations are primary necessities. When they are carefully measured out, these marvellous 'tinctures' bring us the many rare and precious essences of the plant world. They are the sources of an exhilarating kind of homeopathy and they guide us towards a sense of enhanced life. This then is the principle we should make fundamental to rhythmanalytical health: small causes have great effects; small doses have great success. We might then see the beginning of the art of micro-nutrition, if we may be allowed to use such an ugly term which does however suggest a life so joyously dematerialised! Before all else, the temporal characteristics of this micro-nutrition must be revealed. With a micro-foodstuff, we take in duration and rhythms rather than substance. Substance is but an opportunity for becoming; pure essence is but time that truly vibrates. We take it to be a fundamental principle that it is necessary to uphold useful and normal rhythms, to help personal rhythms and those imposed by nature to

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harmonise, and to preserve the symphony of hormones. We must never lose sight of the fact that all exchanges take place through rhythms. Biological rhythmanalysis should undertake the task of codifying all these rhythms and of giving 'symphonic' meaning to the organic and substantial totality.

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If diluted substances have characteristic wave effects, then the direct effect of certain waves can be very easily explained. These particular radiations can be replacements for particular substances, and Pinheiro dos Santos in fact suggests a theory of the reversibility of vibrations and vitamins:

Some scientists, of whom Professor Centani is one . . . believe that electric charges exist in vitamins; they thus consider these to be like ions and explain their action by phenomena which would be in biology what radiations are in physics. Rosenkeim and Webster have shown that the action of ultraviolet radiation is similar to that of vitamin D. Ultraviolet radiation produces photons with the same frequency as those vitamin D can emit and which it has itself taken in from the sun (1, section 1, p. 26).

We shall say in passing that there is consequently a rhythmanalytical explanation for the medical action of certain insolated salts. Besides this, the highly reversible character of radiation and substance can be seen. It can therefore be maintained that certain chemical substances bring the organism not a collection of specific qualities but a group of rhythms or, as Pinheiro dos Santos has put it very well, a 'body of photons'.

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Moreover, there is nothing to prevent a homeopathic substance that has taken the form of pure vibration from then being reconstituted in the form of a substance. There is in fact complete reversibility from matter to waves and from waves to matter. The role of micro-substance is perhaps very simply to initiate natural biological vibrations. It can also be explained that ultra-diluted doses are more completely preserved than massive ones because they can be restored. We arrive at the paradox that the infinitely small that is well structured and has clear rhythms is less easily lost than crude, inert matter.

Indeed, Pinheiro dos Santos adds to this rhythmic theory of the activities of substance an inverse hypothesis regarding the *concretion* of

certain rhythms. Such for example is the curious hypothesis of the wave formation of toxins: do some cells come to receive rhythms with dangerous frequencies? There is then what he calls 'toxicnic retention' (1, section 1, p. 1). Were toxins not formed that concrefy³ and absorb harmful radiant energy, then a very minor occurrence of illness would lead to death. There follows a whole hypothesis regarding microbial relations which could form the basis of a wave bacteriology and clarify many problems. However, although Pinheiro dos Santos's explanation is coherent and rich, it cannot be seen to suggest specific experiments which would allow us to decide between the substantialist and the wave interpretation. Even so, it is in fact very important that a wave translation of classical bacteriology is possible.

Moreover, whatever laboratories decide, it will still be to Pinheiro dos Santos's credit that his thinking has shown the truly primordial character of the vibration that is fundamental to life. If inert matter has already come to terms with rhythms, then it is very certain that through its material basis, life must have profoundly rhythmic properties. It is however especially through emergence that the rhythmanalytical needs of life's process are introduced. Life is strictly contemporaneous with material transformations and impossible without their unceasing help, without the interplay of assimilation and disassimilation, and life must consequently pass through the medium of wave energy. It is only when it is dealt with statistically and globally that life seems to have temporal continuity and uniformity. From the standpoint of the elementary transformations that give rise to it, life is waves. In this respect, life is therefore directly dependent on rhythmanalysis.

Besides this, if we remember that the different kinds of matter formed by organic activity are especially complex and fragile, we shall come to consider living matter as richer in timbres, more sensitive to echoes, and more extravagant with resonance than inert matter is. Every threat of destruction, every partial death that wrecks it, the whole area of active nothingness tempting its being with a thousand intoxicating prospects are all of them opportunities for oscillations. The same is true where assimilation is concerned: every conquest of structure is accompanied by the harmonisation of many rhythms. When life is successful, it is made of well-ordered times; vertically, it is made of superimposed and richly orchestrated instants; horizon tally, it is linked to itself by the perfect cadence of successive instants that are unified in their role. We shall moreover have a better sense of the rhythmic movement of life if

we take it at its summits and if we study, as we shall now do, the rhythm analytical activity of the mind, that master of *arpeggio*!

III

All we have said about the wave form that the emergence of life necessarily takes could be repeated here, term for term. Indeed, conscious life is a new emergence taking place in the conditions of rarity, isolation, and unbinding that favour wave forms. In any process, the less large the amount of energy involved, the clearer the wave form of exchanges of energy. Of all the different energies of life, that of the mind⁴ must therefore be the closest to quantum and wave energy. It is a kind of energy in which continuity and uniformity are highly exceptional and artificial, the products of much work. The higher the psyche rises, the greater its wave movement. When we pass from the material to the mental, between matter and memory, it would be possible to set up a whole research programme allowing us to take note of the importance of the factor of repetition. Just as a heliotherapy that follows the principles of rhythmanalysis will suggest alternating periods of pigmentation and depigmentation, so a rhythmanalytical approach to teaching will establish the systematic dialectic of remembering and forgetting. We only know what we have forgotten and relearned seven times, according to indulgent teachers, the good ones in fact. However, despite these teachers' confidence in the natural reaction that prevents the mind from becoming overloaded with knowledge it cannot assimilate, they have not yet set about helping nature in this respect by contributing methods of forgetting, of 'depigmentation'. Holidays are not enough. They are too distant. They are not an integral part of the culture, of the school's temporal texture. The rhythm of school life is thus completely unbalanced; it runs counter to the elementary principles of a philosophy of repose. We must introduce oscillation into the time of work itself. Mathematics can be done to a metronome. This is a way of benefiting from the oscillations of the mind's emergence.

We shall not however prolong this discussion of the increasingly obvious wave character of the different kinds of emergence, but shall now pose a particular problem that will show the full importance of rhythmanalysis. This is the problem of the relations between psychoanalysis and rhythmanalysis. More systematically than psychoanalysis

does, rhythmanalysis seeks motives of duality for mental activity. It makes the same distinction between unconscious tendencies and strivings for consciousness, but it achieves a better balance than psychoanalysis does between these tendencies towards opposite poles, and of the psyche's two-directional movement.

Indeed, for Pinheiro dos Santos, people can suffer from being enslaved to unconscious, confused rhythms which show a real lack of vibratory structure. Above all though, they can suffer from consciousness of their infidelity to the higher rhythms of the mind: as he says, 'human beings know they can go beyond themselves' (2, section 1, p. 5), and they both need to go beyond themselves and have a taste for doing so. Sublimation is not some deep drive; it is a call. Art is not a poor substitute for sexuality. On the contrary, sexuality is already an aesthetic tendency; it is profoundly implicated in a set of aesthetic tendencies. Pinheiro dos Santos bases his rhythmanalysis on creationist philosophy, on an active sublimation of every tendency. It is the lack of active sublimation, of sublimation with the power to draw us on, emergent and positively creationist, that unbalances psychoanalytical ambivalence and disturbs the interplay of psychic values. Not being able to *realise* an ideal love is certainly a cause of pain. Not being able to *idealise* a love we have realised is another.

Here we reach the most difficult part of Pinheiro dos Santos's theory. Let us therefore try to see how exactly creationism imposes waves of affectivity on the psyche. Should living beings seek to leave their present state and follow their own impetus, placing part of their power and energy at risk, they will at once feel the need to turn back to their acquired knowledge, back to a *support* that will ensure their impetus, as has been well shown by Jean Nogué. If on the contrary they remain at the level of what they have already acquired, then straightaway the monotonous rhythms characteristic of this state, which is closer to matter, tend increasingly to die away and the creationist reaction appears as more necessary and at the same time easier. Without this reaction, the becoming of living beings would decline into torpor. All creative evolution which is understood not in the statistical summary that is the evolution of species but in individuals, in young individuals especially, must necessarily be in wave form. Evolution in individuals is a tissue of successes and errors. The evolution of the species gives us only the sum of successes which are more or less great, more or less special, in which error is recorded in only its teratological aspects. The function of

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the individual is on the contrary to make mistakes. If we all try out on ourselves the psychology of an attempt to create, an attempt to innovate, then however modest this attempt, or especially in fact if this attempt to create is modest, the accuracy of creationist wave psychology will be apparent. Error cannot be continued without causing harm. Success cannot be continued without risk and fragility. In its detail, the evolution of individuals takes a wave form.

From a more specifically moral standpoint, Pinheiro dos Santos is aware that repression is either liberated or corrected by cathartic method, as Freud has shown. Freud's method, though, does not go far enough: it forgets characteristics that rhythmanalysis will take great care to introduce into cathartic method. Indeed, once the repressed event has been brought to clear consciousness, it seems that for psychoanalytical theory the patient will automatically get better, that this enlightened consciousness will forgive the fault that long lay hidden, and that unconscious 'remorse' will be stilled by conscious avowal. Yet is it not to be feared that the painful process might start up again in the unconscious? Is not this painful process, as Freud himself admits, a dynamic disturbance, a disturbance of becoming rather than of a state? In order to be safe from a repetition of neurosis, for which interpretations are never in short supply, a clear system of inner forgiveness must be prepared in consciousness. We can then hope that the 'scruple' will no longer be renewed. This systematic, conscious forgiveness, set up in face of the automatic reflexes of a guilty conscience and in opposition to the dangerous slope of harmful becoming, must form the clear pole of the moral dialectic. As has often been said, psychoanalysis has underestimated the conscious, rational life of the mind. It has not seen the constant action of the mind that somehow or other always gives form to the formless and can always interpret obscure desires and instincts. Cathartic method will remain then a medical act, carried out by a skilful and knowledgeable practitioner. It is an 'operation' that may be necessary in the case of neuroses and also in the great misfortunes of criminal life. The morality that deals with detail needs a more frequent and more flexible cathartic method. It is dependent on a rhythmanalysis better suited than is psychoanalysis to following the temptations that come like waves. Moreover, when we have to attain a positive life, *inventing* good and not just doing it, only rhythmanalysis can guide us. Rhythmanalysis alone takes account of moral dualism, and Pinheiro dos Santos writes that 'the rhythmic balance of moral inflexibility and

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kind-heartedness is the law of love and its very expression' (2, section 2, p. 12). More precisely, rhythmanalysis under the name of the solidarity of couples has brought to light the fundamental motive of moral duality. Since human egoism always comes back in the end to the desire to appropriate *social* values, the seduction and conquest of others remains the egoist's aim. The personality thus lives according to the rhythm of conciliation and aggression 'that goes from one pole to the other in the two contrary attitudes of the rhythm *self-love*—love of others' (2, section 2, p. 6). The ambiguity of interpretations is perhaps nowhere more visible in the closeness of its terms than in morality: all our moral acts have a dual aim. Morality reacts on being. I respect in order to be respected. I love in order to be loved. I do good in order to be happy. Comparison of the self and others is the fundamental principle of all moral proof. Of all the emotions, the moral emotion is most wave-like. Rhythmanalytical morality sets out to regulate this wave-motion.

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IV

Pinheiro dos Santos's lengthy discussions in his work have thus furnished us with a number of examples of the essential polarity of mental life that is fundamental to rhythmanalysis. In limiting ourselves in this way, it is not possible to convey all the richness of his work. The important point though is that we should give readers the feeling that all life's endeavours are dialectised, that all mental activity is a passage from one level to a higher one, and that every emergence has to have something supporting it. Readers may find it quite easy to accept all these polarities which are not new in philosophy, but they will no doubt raise the following objection: how can a philosophy of time result from these psychological and moral oppositions? Does it not appear that duration has nothing at all to do with these problems and that all these oppositions can be summed up by the old saying that opposites attract?

We can answer these objections by referring to two kinds of cases in which either the opposites confront one another in incontrovertible hostility or else there is minimal disagreement between them. In the first case, the duration of a state will in fact determine the intensity of the opposite reaction. Politicians and teachers have often made this observation, but it would benefit from being extended to all aspects of life. It would then be recognised that any severe inhibition determines

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accumulations of energy which must sooner or later react. The duration of a reaction that follows a long-lasting coercion is itself lengthened, hence the setting up of a rhythm that is at one and the same time both powerful and slow.

Although it would be easy to develop this point, we shall not dwell on it but shall simply ask those who criticise us to consider examples in which the opposites are less distant from each other and less hostile than those Pinheiro dos Santos examines. It will then appear that between these two fairly close poles, hesitation—that indispensable form of progress—behaves like an increasingly regular oscillation, which synchronises more and more with precise temporal rhythms. Thus, is it a matter of emotional ambivalence? Let us no longer look at irrefutably passionate and dramatic emotions. Let us consider moods that are just a little melancholy and full of fickle desires; let us consider, so to speak, temptations that do not tempt, scorn that is indulgent, kind refusal, verbal joy . . . and we shall see time begin to oscillate, all its seconds slightly contradicting and colouring each other, either dull or brilliant. Opposites unite together and then part, only to unite again, as we see in Verlaine's famous line: 'Melancholy waltz and languorous vertigo'.

Such is the minor ambivalence in which we shall see rhythmanalysis come into being. In these superficially unstable states, it is really time that offers the appropriate analytical schema; when the dialectic of consciousness and will is completely separated from interests and usefulness, it tends to become temporal. There is so little reason for continuing a state that the taste for breaking things off makes itself clear. Time alone is in command in this sweet, free life: everything twinkles and sparks.

If physical pain is sufficiently slight, it too comes within the competence of rhythmanalysis. With a little practice, we can for example make toothache vibrate. All we need do is calmly and attentively put it into its proper perspective and avoid the general annoyance and agitation that would fill up the intervals of the particular pain. The throbbing of this local pain then acquires its regular rhythm. Once this regularity has been accepted, it comes as a relief. Pain is truly restored to its local aspect because its correct temporal aspect has been fully determined.

Although we ourselves have found these detailed applications to be effective, they do require quite considerable practice. They are really only possible if the great natural rhythms upholding life have been previously restored to their importance and regularised. Here, respiration

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takes precedence with its slow, regular cadence which, once completely freed of all organic worries, deeply marks our temporal confidence, the confidence we have in the near future, our harmony with rhythmical time.⁵

It is regularity of breathing that a philosophy of repose must endeavour to achieve before all else. Indeed, *rhythmanalysis* concurs with the teachings of Indian philosophy. Romain Rolland describes to us Vivekananda's first lesson as follows:

Learn to breathe rhythmically, in a regular way, through each nostril alternately, concentrating the mind on the nerve flow, on the centre. Add a few words to respiratory rhythm in order that it be more clearly emphasised, marked out, and directed. Let the whole body become rhythmic! Thus are learned true mastery and true repose, and calmness of both face and voice. Through rhythmic respiration everything in the organism is gradually coordinated. All the body's molecules take the same direction.⁶

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In other words, because of their resonance regular rhythms reinforce structural symmetries. We must also stress the advice that respiratory rhythm be preserved by linking it to a slower vocal cadence. The very great effectiveness of less frequent rhythms of this kind is from our point of view essential. It shows that a low-pitched rhythm, with slow beats, can uphold and determine one that is high-pitched and with much greater frequency. Should one of life's quick rhythms be disturbed, it can be set to rights by being placed within the framework of a slower rhythm that is easier both to monitor and impose. This explains why marching along to a very discontinuous tune, with a rallying beat every two or three steps, is so beneficial for restoring calm and regularity to respiration. Too rapidly realist a conclusion would instead see the very opposite as effective, imagining that it is a rhythm with many frequencies that carries the events of a slow rhythm, as though these were additional incidents. But experience is conclusive: the mind imposes its rule on life through very few but well-chosen actions, and this is why an art of repose can be established when there is certainty of well-distributed reference points.

We shall moreover find very many confirmations of this when we study, from the standpoint of *rhythmanalysis*, the great sweeping rhythms that mark human life. We scarcely need to remind readers of the importance for a good and thoughtful life of living in accordance

with the day's pattern, with the regular passing of the hours. Nor do we need to describe the very rhythmic duration of those who work in the fields, living in harmony with the seasons and shaping their land according to the rhythms of their labours. The importance for us, from a physical point of view, of adapting very strictly to plant rhythms has become increasingly evident since the specificity of vitamins was discovered: strawberries, peaches, and grapes have all of them their hour and are the occasion of physical renewal, in harmony with spring or autumn. The calendar of fruit follows the calendar of *rhythmanalysis*.

Rhythmanalysis will look anywhere and everywhere in order to discover new opportunities for creating rhythms. It firmly believes that there is a definite correspondence between natural rhythms, or alternatively that they can easily be superimposed, one rhythm imparting momentum to another. *Rhythmanalysis* forewarns us then of the dangers of living at odds with such rhythms, and of failing to understand our fundamental need for temporal dialectics.

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V

We believe however that if human life is indeed placed in the framework of these natural rhythms, what we are determining is happiness, not thought. The mind needs a much closer pattern of reference points. If, as we would argue, intellectual life is to become the dominant form of life, physically speaking, with thought time prevailing over lived time, then we must devote all our efforts to the quest for an active repose that finds no satisfaction in what is freely bestowed by the hour and the season. It would seem that for Pinheiro dos Santos this active, vibrating repose corresponds to the lyric state. The Brazilian philosopher has close knowledge of modern French literature, in particular of Valéry and Claudel, whom he greatly admires. He submits to each in turn, to the power and the rhetoric of Claudel's writing, and then to the subtle ambiguities of Paul Valéry's thought. In Valéry, he appreciates most of all the supreme art of the poet as, skilfully, he disturbs our calm and calms our disturbance and moves from our heart to our mind, only to return at once from mind to heart.

Yet Pinheiro dos Santos does not rest content with this rather coldly intellectual interpretation of the lyric life. He prefers that lyricism should continue to be regarded as a purely physical charm, a myth that

lulls us to sleep, a complex binding us to our past, to our youth and its impetuosity. Indeed, he suggests a lyric myth for rhythmanalysis which could well be called the Orpheus complex. This complex would correspond to our first and fundamental need to give pleasure and to offer solace; it would be revealed in the caresses of tender sympathy, and characterised by the attitude in which our being gains pleasure through the giving of pleasure, by the attitude of making some kind of offering. The Orpheus complex would thus be the antithesis of the Oedipus complex. Poetic interpretations of this Orpheus complex may be seen in Rilke's orphic lyricism, as Félix Bertaux has called it,⁷ a lyricism which egotistically lives out an indeterminate love of others. How very sweet it is to love anyone or anything, indiscriminately! How delightful ever to live at the moment of falling in love, ever amidst love's first rapturous declarations! This then is the basis of a theory of formal pleasure which is the very opposite of the theory of that immediately objective material pleasure, which in the Oedipus complex binds the unfortunate child to the face that is first seen above the cradle. Rhythmanalysis is the complete antithesis of psychoanalysis in that it is a theory of childhood rediscovered, of childhood which remains a possibility for us always, always opening a limitless future to our dreams. It is interesting to note here that Pinheiro dos Santos has, in an essay in which he takes issue with Freud's work on Leonardo da Vinci, set out to explain this artist's creative genius in terms of an eternal childhood. Creationism is in fact nothing other than the process of growing perpetually younger, a method of systematic wonderment that rediscovers a pair of wondering eyes with which to look upon familiar sights. Every lyric state must originate in this truly enthusiastic knowledge. The child is our master, as Pope once said.⁸ Childhood is the source of all our rhythms and it is in childhood that these rhythms are creative and formative. Adults must be rhythmanalysed in order that they may be restored to the discipline of that rhythmic activity to which they owe their own youth and its development.

VI

We ourselves would prefer that the lyric state be subjected to some kind of mental elaboration, thus setting ourselves at some distance from the unconscious powers that imprison us in the Orpheus complex. We have,

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for this reason, turned our attention to the uppermost regions of superimposed time, to thought time, in our search for the most clear-cut and therefore most invigorating of dialectics. We have, for example, sought to experience all Valéry's poetry in our own way by applying to these poems the structures implicit in the dialectic of time. This may well be too abstract and too personal an approach, suggested all too readily by habits bred of dry and dusty philosophy. Yet we have discovered that as a result of using this method, which in effect impoverishes, we can hear rare and precious echoes; we have experienced in particular how the temporal structure found in ambiguity can help us to intellectualise rhythms produced by sound, and so enable us to *think* that poetry which will not reveal all its charms when we confine ourselves to speaking or feeling it. We have come to realise that it is the idea that sings its song, that the complex interplay of ideas has its own tonality, a tonality that can call forth deep within us all a faint, soft murmuring. If we speak soundlessly and allow image to follow image in quick succession, so that we are living at the meeting point, the point of superimposition, of all the different interpretations, we understand the nature of a truly mental, truly intellectual, lyric state. Reality is enfolded and adorned by the rich garment of conditionals. In place of the association of ideas there comes the ever possible dissociation of interpretations. The mind takes pleasure in its refusal of all that it once found unfailingly attractive: it discovers all the delights of poetry in its destruction of poetry, as it contradicts the sweet spring and resists all charming things. This, it must be said, is a highly epicurean asceticism, since in this conditional form pleasure seems more vibrant. Poetry is thus freed from the rules of habit, to become once again the model of rhythmic life and thought that it used to be, and so it offers us the best possible way of rhythmanalysing our mental life, in order that the mind may regain its mastery of all the dialectics of duration.

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NOTES

1. Bachelard's footnote: L. Pinheiro dos Santos teaches philosophy at the University of Porto in Brazil; the work referred to is *La Rythmanalyse*, Société de psychologie et de philosophie, Rio de Janeiro (1931). This work was not published commercially and has not been traceable, despite the efforts of many Bachelardian scholars over the years: it appears to have been sent privately to

Bachelard. All his quotations from Pinheiro dos Santos in this chapter are from this work.

2. Bachelard's reference is to Prince Louis de Broglie, the founder of wave mechanics.

3. The word '*concréfier*' used here appears to be one of Bachelard's neologisms, the sense of which should nevertheless be clear to the reader.

4. Bachelard's phrase 'l'énergie spirituelle' implicitly refers to Bergson's collection of studies entitled *L'Energie spirituelle* (Paris, 1919).

5. Bachelard's footnote: cf. Masson-Oursel, 'Les Doctrines indiennes de physiologie mystique', *Journal de Psychologie* (1922), 322.

6. Bachelard's footnote: R. Rolland, *La Vie de Ramakrishna*, p. 295.

7. Félix Bertaux was a Germanist and a contemporary of Bachelard's, who translated a number of German writers and produced French-German dictionaries. Bachelard probably refers here to Bertaux's book *Panorama de la littérature allemande contemporaine* (Paris: KRA, 1928).

8. This appears to be an imperfect recollection on Bachelard's part, this phrase being in fact reminiscent of Wordsworth's 'The Child is Father of the Man' in his poem 'My heart leaps up when I behold'.

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