# REFLECTIONS ON LAUGHING

The general theme of this reflection on laughing is that the place of laughter in everyday life has been reduced a great deal in Western societies since the beginning of the century and that this fact could have major consequences for the mental equilibrium of individuals and for the future of our civilizations. Moreover, philosophy and human sciences seem to have a certain responsibility for this disenchantment of our contemporaries with laughing.

I will not go into the first point in any detail here. It is sufficient to look around today's world—and who has not done so?—in order to note that the man in the street is much gayer and laughs more readily in the poorer countries than in the industrialized countries. We need only recall that general attitudes with regard to gaity and laughter were still, at the beginning of this century in Europe and North America, similar to what they had been in the 19th century and to what they probably have always been through the centuries and what they still are in Africa and Latin America.

This evolution must certainly pertain to a complex ensemble of factors—economic, political, social, cultural. Here is a vast subject for study that no one, to my knowledge, has yet undertaken. My objective here can only be to raise the problem

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and to outline, among all the others, two possible directions for research, one dealing with the "responsibility" of philosophy and human sciences (psychology in particular), and one dealing with the short term and long term social consequences of this "demise" of laughter.

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When he published his book on laughter, Henri Bergson seems to have set the bell tolling. Even though the "specialists" were hesitant, his thesis almost immediately became famous and, at the present time still, that is, eighty years after its publication, the book is by far, in every language of the world, the most read, the most famous and the most sold (again by far) of all books published on laughter. However, its thesis is false; moreover, its restrictive nature makes it profoundly destabilizing.

Readers of *Diogenes* know this certainly. According to Bergson, what is funny and what makes us laugh is any situation, representation or evocation, any event in which "something mechanical is overlaid on something living."

Two typical examples brought on Bergson's success: that of stumbling and the jack-in-the-box, a child's toy which still exists today in various forms. "A man was running down the street, tripped and fell. The passersby laughed"<sup>1</sup> "We have all played at one time or another with the jack-in-the-box. We push it back in and out it pops again. We push down even further, and it jumps even higher."<sup>2</sup> In both cases Bergson sees laughter resulting from the substitution of stiffness for suppleness, of the mechanical for the living. And in both cases he generalizes his explanation from particular cases to cover everything which is risible.<sup>3</sup>

So defined, demystified, shut up and cramped..., it is clear that the risible is hardly attractive. If we accept what Bergson says, and it has been largely accepted, there is nothing more

<sup>1</sup> Le Rire, 400th edition, p. 7.

<sup>2</sup> Op. cit., p. 53.

 $^3$  It should be noted, however, that he hardly speaks of *humor* at all, that he does not cite any of the great humorist works and seems not to know of them.

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to discover, nothing more to invent. Reduced to the state of a slight philosophical enigma, once and for all, and resolved forever, laughter and the risible can no longer touch anyone but the ignorant, children and simple people. Neither philosophers nor psychologists nor psychiatrists have anything further to say about it, nor do intellectuals in general have anything more to do about it.

In particular this explains perhaps why no basic book has been published on laughter since Bergson (except for Freud's *Le Mot d'esprit dans ses rapports avec l'inconscient*, written at the same time as Bergson's work and published two years later), the absolute lack of scientific research on the subject, the total void of bibliography, at least until a very recent date.

But above all Bergson does not say a word in his book about the *need* to laugh which all people have, of the place of the risible in the human psyche, of the role of laughter in daily life, in the elaboration and the transmission of the ideas that all of us have, in the contacts and "communications" of people with one another.

We can thus fear that the success of the straitened theory of Bergson has contributed to the neglect in the thinking of the governing classes of the Western world on this important procedure of the human psyche, the laugh and the risible.

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Here summarized in nine points, are the aspects of the unknown problem which are, it seems to me, the most important with regard to laughter and the risible.

1. The pleasant mode, the risible, is one of the most current modes for elaborating thought, expression and communication in the average person. It is adopted spontaneously by most people who actively participate as actors in the games of laughter, both for laughing and for causing laughter.

2. The slight place given to laughter in psychological treatises is thus deplorable. The very works which treat of laughter only do so as a phenomenon *sui generis*, with no relation to the essential of the psyche.

3. In fact, because laughter is a phenomenon of joy and pleasure, the risible procedure brings on the participation of instinctive forces in conceptual thinking. It is proper that philosophy has for centuries placed laughter among the emotions; but it has hardly extracted any conclusions. Neglected or unknown are the consequences, the effects on man of the commitment to and the repetition of these emotions. In the short term, laughter has the important effect of transforming a cold listener into a warm partner.

4. Every risible "object" presents a "break-down in determinism," an incident, a failure, a mini-conflict of sense and non-sense which the one who laughs must resolve by himself if he wishes to laugh; this leads to a personal effort for which he is rewarded and encouraged by the joy of laughing.

The one who laughs, then, is in a situation of "creativity," and he places himself there spontaneously. The successes of this creativity are immediately and individually rewarded. Laughter thus stimulates intellectual activity instantly.

5. The break-down, the conflict, the interrogation which arise from an awareness of the risible object oblige the one who laughs, if he wants to laugh, to destroy the rigid framework of his habitual thinking, of his prior "unique idea" of the subject.

"New" ideas, new information, particularly realistic ones, *can* thus be introduced into the brain.

People who laugh habitually are less closed off in their thinking and more open to others.

6. Within a few hours, the "reserves of psychic energy," far from being exhausted by a "round of laughing," are heightened, because emotion creates more energy than that consumed by the effort of understanding risible objects. This is the source of good humor.

7. On a social scale, laughter is the most natural and the easiest of the means of contact between people. Within a group, the effect of good humor extends from the individual to

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the entire group. On the one hand, an exchange of ideas is facilitated, and on the other, mutual good feelings are encouraged. Coherence, creativity and efficiency are stimulated.

8. In the long term, daily repetition of laughing exercises develops "the creative faculties" of the brain, the powers of mobilization and use of cerebral energy (neuro-mediators).<sup>4</sup> Most frequently it is through laughter that the young child learns and the adult reinforces his faculties of rational and anticipatory reasoning.

9. In the still longer term, not only on the individual scale but on that of the species, laughter is a "procedure for educating" the neo-cortex to the needs of the paleocortex, and inversely of the paleocortex to the methods of the neocortex. This is a procedure of unification, collaboration, alliance of two elements very different one from the other, very foreign one to the other, and which are still associated and form by their association a single brain, generating a single psyche, a single consciousness in each person.

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Bergson's theory that the cause of laughter and of the risible is that "something mechanical is overlaid on something living" is only rarely in agreement with our everyday experiences. It is too narrow for answering the multiple questions which have just been asked.

Man laughs each time he overcomes a break-down, an incident, an interrogation in a determined process, seen before the breakdown as being without problem, normal and beneficent. This is the general principle which seemed at the beginning of my work to control if not all laughter at least the greatest part of it.

Laughter is born of a break-down in determinism. We expect one thing, and another thing occurs. We should be nonplussed, upset, hurt, often wounded and anguished. But if we are not,

<sup>4</sup> Obviously cerebral energy is not "created" out of nothing. In fact it is a matter of a transformation of energy procured by nourishment and oxygen into cerebral energy.

if we are able (or make ourselves be able) not to be so, we find that we are reassured, happy, even triumphant and glorious for not having been victims or dupes, for having been sufficiently strong, sufficiently capable, sufficiently intelligent to overcome the pitfall, the difficulty, the little mystery, the trap into which others have fallen; for having won the game, for having guessed (quicker than or at least as quickly as the others), for having understood (the first to do so) what was to be understood.

Obviously, if it is I who slip on the banana peel, it is not I who will laugh, especially if I feel I am clumsy and ridiculous and if I hurt myself in my fall. Nevertheless, it suffices that I trip while walking for my son Vincent (who is five years old) to laugh; what he sees, what makes him laugh is the break-down in the determinism of the step, a break-down which I overcame poorly because of clumsy and uncoordinated gestures. This is not "something mechanical overlaid on something living." It is rather the opposite of the living and the spontaneous, alas, badly adapted like many living reactions which, by a reflex which is instinctive to accident, replace the regularity, the automatism, the well-regulated mechanism of walking.<sup>5</sup>

Let us make clear here what we mean by "determinism" and "break-down in determinism." A statement or an event, a "determined" action, are those whose elements, words, images or phases and unfolding are, in a word, *predictable*, answer to a certain logic. In the preceding example, the determinism and logic are those of the step; the break-off is my tripping.

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Freud tells of a mean remark by Heine about a disagreeable person whom he had met. "We had a *tête à bête* conversation," he said. The break-off in determinism results from the fact that as soon as the listener or the reader hears the words "*tête à...*", he expects the phrase "*tête à tête*". The cleverness

<sup>5</sup> In *The Cry of Archimedes*, Arthur Koestler has outlined a theory close to this one. I learned of it only just recently. There has been parallel research which has produced analogous results. What is important is that one theory reinforces the other. See my book, *Le rire, suite*, which will be published soon by Denoël, Paris.

comes from the change of the "t" to a "b". The laugh comes with the immediate understanding by the one who laughs of the break-down and of its meaning.

It is clear that the break-down in determinism can be either an event in a concrete action, or a simple play on words, a wilful or unwilful slip, an allusion, or an ambiguity. It can and often does go as far as absurdity, the contradictory, the incoherent. But then, in order to laugh, if one laughs, it is necessary to see (understand) an intention which restores logic to this absurdity. The borders of the joke, the paradox, cynicism, and perversion should be sought in this direction.

The "break-down in determinism" does not automatically lead to laughter. The hypothesis is the inverse, that most laughter is set off by such a break-down. And in order to test this hypothesis, I ask my readers to look for examples *which would contradict it*.

It is possible that, after having criticized Bergson for the "imperialism" of his theory, it is strange to propose, even as a hypothesis, another "theory" which would explain all laughter by a single procedure: the break-down in determinism.

But it is necessary to consider that the notion of a break-down in determinism is itself vague and subjective. One person will note a "break-down" in a statement or in an action, and another not. The same person, at just a few days' interval, can note it or not. And this with infinitely variable intensities and modalities, some leading to laughter and others not. One will find something absurd or dull, while others will find it hilarious.

Similarly, and even more so, with the notion of determinism, logic, signification. To laugh it is necessary first of all to note the conflict, the contrast, at the least the coexistence of two actions or of two ideas; and to resolve it, to overcome it, to dominate it. And all of this is profoundly subjective. All of this is expressed by types of laughter, modalities and intensities which are infinitely complex and varied. As complex and varied as are the thoughts of people. As complex and moving as the cerebral movement, conscious or unconscious, but apt to become conscious, which daily life engenders in each of us.

And so laughter and laughing, in no way regimented by the yoke of a theory, remain conceived as belonging to a profound, spontaneous and natural movement of thought.

It is no less probable that all types of laughter and all manner of laughing have an origin which distinguishes this form of thought from all other forms of thought in the human brain (the serious, complaints, rationality, the surreal, the marvelous, etc.). And this distinctive origin could be a break-down of the cerebral movement, or as is said today, following surgeons of the 19th century, a solution of continuity, *i.e.* a fracture. Fracture, or at least incident, inconvenient, which the one who laughs is proud to have repaired or avoided: overcome. But it is clear that the psychic coloration of the laughter phenomenon is quite strong. Laughter is a strange-truthed product of the brain-body complex, micro-physical and macro-physical circuits. Is laughter in man "gratuitous," superfluous, given as "an extra" to satisfaction and pleasure? Or does it correspond to a need, and even a necessity? Does it not play a profound role in our processes of imagination, invention, information, expression, communications, perception? The questions which we ask ourselves are countless; the answers which we are here offering are still quite incomplete.

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An incident which occurs, a problem which arises, an interruption, a trouble in a procedure until then presumed to be "normal," logic which ceases to reign, unease which is born: this is the "hitch" which incites laughter if it is avoided, overcome, resolved.

This interruption, this accident, this hitch... "objective," exterior to the brain, are (*sine qua non*) perceived by it, become surprise, interrogation, unease. A great commotion follows. Neurons and synapses interrupt and suspend their previous activities. The entire microphysical arsenal is mobilized for perception, analysis and processing of the new information which is arriving. The cerebral tension of microphysical forces is extended by a "hold" on the macrophysical body which is no longer capable of instinctive gestures.

When the solution is found immediately, the false alert concluded, the false danger past, when a "higher logic," a

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higher process has resolved the contradictions at first felt or perceived, when in a word our fundamental rationality is instantly restored, when the conception of the world in which we have confidence has shown (once more) its capacity to allow us to live in harmony with things and with men, then relaxation occurs. The brain resumes its normal activity; neurons, circuits and synapses resume their habitual behavior. Stimulated by the force of mobilization and the flush of victory, the microphysical movements are amplified into macrophysical movements. The body itself can, after its prior mobilization and expectations, spend a greater or lesser part of its muscular energy which it conceals and which is then shaken by movements which have as their only object the consumption of excess energy or at least of its rich abundance.

It is then necessary to re-establish confidence and security at once after a "harmless" alert or incident or misunderstanding (harmless for if the alert is heated or prolonged, finds a solution only after laborious efforts or, *a fortiori*, if the incident becomes an accident and causes pain and injury, then it is clear that there will be no laughter, even when the alert is ended).

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It is a matter ultimately of dominating at once a rather feeble problem in order not to jeopardize our logic and self-confidence, *i.e.*, our rules of living and our conception of the world. It is even a matter of voluntarily *proving ourselves* to ourselves, and of *proving to others that we are easily capable of overcoming such challenges*, of not becoming victims of such ignorance, misfortune or clumsiness. This is the source of research into the laugh as game, the spectacle of the circus and of comedy, the routines of "*chansonniers*," jokes, "*bons mots*," funny stories which we collect, drinking tales. These are all meetings of those who laugh where one laugh reinforces another, where imitation leads the weak to the level of the strong, even if this means that the strong must reduce their own level a little.

Common Sense or Nonsense...

In sum, if an intellectual is frequently required to make abstractions, deal with rationality and subtlety, the average person must deal with what has for centuries been called, and what we should continue to call, common sense.

This is a victory for common sense. Man is glad to note that his common sense allows him to overcome the snares which complex and designless reality places in his path. Does an incident risk upsetting our common sense? No, our common sense is stronger than these troubles, can overcome them and cancel them.

Common sense is the sense which we give to things and to people in order to live with them without too many problems; it is the sense which we give to reality in order to make of it a friend. The incident, the alert, the break-down which are at the origin of the laugh denote that things or people are not taken in the right sense. It is a matter of "putting back in the right direction" things which no longer are, which certain people do not know how to do and which at the moment either surprise or challenge us. It is a matter of proving that, instantly, spontaneously, we know how to, we are capable of it.

When we have finished putting things, people and ourselves back in the right direction, which is what allows us to live in a difficult world, then we laugh.

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Without here doing any more than simply drawing up a very sketchy summary of the subject, I can say that each of us has had a concrete experience of the important place that laughter has in our communications with *others*: parents, friends, fellow students, colleagues, working companions, social relations, traveling companions, neighbors—in school, at play, in sports—at electoral meetings, even in meetings of scholarly societies.

It is an absolute rule in the Anglo-Saxon scientific and intellectual community that every lecture should begin with a light-hearted remark which creates an atmosphere of good-will, giving each listener the impression that he is personally taking

part in the discussion (for laughter is a form of speech) and that he can follow without too much difficulty the learned analysis of the speaker. My wife always highly encourages me to follow this custom; but often I am so obsessed by the seriousness of the matter with which I have to deal, I can find nothing funny to say, so that I can only get a laugh by saying publicly that I am incapable of getting one.

But I would like to insist on the presence of laughter in places where people work together, whether it be intellectual or manual work (school, university, office, workshop, construction site...). One of the great catastrophes of the 19th century, still barely identified, is the disappearance of laughter in workshops and sites which have become too noisy due to machines and motors. In the country, until the appearance of harvesting machinery, the harvest times were the last refuge of those funny remarks which used to accompany every human work, even that of slaves and even that of soldiers. It is clear that the disappearance or the scarcity of laughter, which had for millennia accompanied work, has had painful consequences for the psychic balance and happiness of people.

As for the social condition, and as for the ardor even of work, they have also been gravely affected. The funny and laughter play an important role in the creation of physical and intellectual forces. It is, then, all the more astonishing that the fact and the problem have escaped the attention of our Taylors, Fayols and Stakhanovs. I do not yet know of any treatise on the organization of labor where laughter has in fact been assigned the place which, in my opinion, indisputably belongs to it.

Rather we have been accustomed to considering the risible as an autonomous compartment of psychic activity, unrelated to any other and with no consequences for any other. This is the source of the notion of "entertainment." As if the person who laughs was not changed by his laughter, as if the person who is entertained was not changed by his entertainment.

### THE LAUGH, CREATIVE GAME

It is enough to observe for a few hours people laughing in a group in order to note that once the initial gibes start flying, laughing becomes a game in which everyone is in turn spectator, listener and actor (in data-processing terms we would say sender and receiver). And each person is encouraged by imitation to become personally creative: creative in order to understand what is risible in what is being said; creative in order to judge and approve publicly the quality of the risible; creative in order to himself add to the risible thing which has been said or done, to answer back, to one-up, to bounce off or start the game up again with new objects and subjects. The reader will find in his own mind that the role of laughter is even more real and more profound than at first glance it might have seemed. We find that laughter is an "exercise" in thinking which encourages and develops cerebral energy and the effective use of this energy.

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The average person enjoys and feels better at play than in the real world. For, on the one hand, play is chosen by the player in accordance with the level of his aptitudes and his knowledge, and, on the other, the sanctions of a game are much less hard than those of life.

### THE MEDIUM TERM EFFECTS OF THE RISIBLE

That which we obtain only with a great deal of difficulty (*i.e.* with efforts which are difficult to make) by using processes of the pure neocephalus (observation and rationality) can be obtained much easier by the risible process.

The average person, by laughing, participates spontaneously in a discussion, in a debate, in communicating; he tires less easily. He is active and creative. His criticism is constructive (since, if he wishes to criticize, he must himself offer in opposition to the subject which has just made everyone laugh another subject critical of the preceding one which he must invent, formulate and which must also cause laughter). He must

be lying in wait for all movements of the conversation; he repects or adopts the conclusions by laughing or refusing to laugh. He is "in the game." And this is because this form of intellectual exchange gives him pleasure and emulation, the initiation of emotion *instinctively starts up a sensible production of cerebral energy which makes the effort possible.* 

The very technique of the risible, the break-down in determinism, asks a question of the prospective laughing person which he must answer himself in order to laugh; he is thus placed in a situation where he must "create," invent, guess, understand by himself. If he succeeds, he will be immediately rewarded by laughter. If he can only succeed by asking for an explanation, he knows that the pleasure of laughing will not follow the explanation. We only laugh if *we have discovered the reason by ourselves*. If we only pretend to laugh, it is not a pleasure but only a humiliating hypocrisy (even if the others do not notice).

And so laughter is the result of a series of cerebral exercises and successes which are easy, of course, but which are repeatable indefinitely (at least during the normal course of a "laugh session") and repeatable without disagreeable effort (because of the variety of "questions" asked), without fatigue (because of the emotion which multiplies the neuro-media-motors), with joy.

By being so led to resolve by itself a great number of mini-conflicts between different determinisms, between different thoughts, between different "data," the brain is able to perceive, to receive and to accept new ideas which would be very difficult and even impossible to discern by other processes.

In the long run the brain thus becomes unadapted to the reception of new ideas and new data. It can more easily, or less inconveniently, combat against the subjection of the uniqueness of clear thinking.

The risible and the search for laughter provoke a commotion which allows the brain to perform less badly the inventory and "processing" (in an electronics sense) of data which it contains.

The repeated action of the emotion of games, the pleasure of success and the search for pleasure, not only stimulate *in the short run* the production of cerebral energy (neuro-mediators) and the lowering of the resistance of cerebral circuits, but in the

long run make the brain more apt for this production or this reduction.

long run make the brain more apt for this production or this analogous to those which sports render to the body. But *here it is a matter of exercises which produce energy at the same time as they consume it.* So that man finds himself much less tired after a round of laughing than after a game of tennis or even a game of cards. On the contrary, he has heightened his psychic forces, which is what makes a "good humored" situation.

## LONG TERM EFFECTS

We can consequently understand the importance of the functions of laughter; they are so evident that it is astonishing that they are so unknown.

The first, the most evident and the one which is seen by all (except, no doubt, by those who write on laughter) is to encourage good relations and harmony between men. Good humor is obviously not limited to such and such an individual; it extends to the entire group who laughs. The laugh establishes and maintains the good humor within the group, whether it be a familial one, at school, a professional group or one of leisure, long-term or passing. By using a term in vogue today, I would say that laughter is the major factor in and an extremely important element of conviviality. And that is no mean attribute.

Within the group it can be observed that the need and the function of laughter are recognized by the particular and oftenencouraged situation created by group leaders and "live-wires" who know how to set off laughter and to keep an atmosphere pleasant. It can be easily noted that these people enjoy special warmth and indulgence. Ultimately it can be said that the group recognizes their "social function" as laughers and for this reason exonerates them from other obligations.

By favoring warmth, tolerance and indulgence within the human group, laughter, when used in this way at least (and it easily is), responds to a profound need of social life.<sup>6</sup>

<sup>6</sup> Let us repeat that with laughter it is possible to say and do and have

A baby is taken to a fireworks display by his mother. At the first explosion, he bursts into tears. The succeeding and irregular bombs and firecrackers heighten his fear which soon degenerates into terror. Despite the soothing which those around him offer, his cries become furious screams, and his mother has no other choice than to find him a shelter from the din.

But now look at a young child who was previously frightened by the fireworks. Now he is of an age when he can better feel these maternal reassurances and can also note that these noises, no matter how traumatic they might be for him, are not followed by any other form of aggression. He can then consider the calm of his parents and begin to "watch" the lights and the enchantment. He gets accustomed to it, that is, he learns to perceive as bearable, then as anticipatory to or an accompaniment of pleasure this noise which he had first taken for a brutal aggression. Becoming accustomed means to create in his brain a representative diagram of observed reality. Here it means becoming capable of "anticipating" that the bomb is not the sound of destruction and killings, but instead announces a show which gives pleasure to adults and which the child will be able gradually to anticipate as a brilliant celebration. And with a certain amount of time, which depends on the "intelligence" of the child, on the number and the modalities of his "experiences," on the behavior of his parents, etc., there is progressively written in the brain of the child the *determinism*, the *rationality* of the fireworks display which permits the description, the explanation and the prediction of its essential factors. Next year, even if he feels a certain anxiety at the first explosions, the child will quickly rediscover the *determined* diagram of the show, the reassuring and then hopeful anticipation.

This observation, which each of us can confirm, will serve first of all to distinguish the cases where the break-down in determinism can create laughter from those in which it can only create fear, unease, the expectation of confusion. The breakdown in determinism goes together with the break-down of predictability. It can only lead to laughter if it can be resolved

accepted a great number of "things" which cannot be so otherwise without risking violent clashes and long-lasting enmities. However, when left unsaid these "things" fester into "complexes," misunderstandigs, latent hostilities.

almost instantaneously by a new reassuring prediction, by a restoring of material and moral security.

This analysis of the role of prediction in the risible event permits us to deal with the problem of the jack-in-the-box which we brought up at the beginning of this article. The reader knows that Bergson and most of his millions of readers believe to see therein proof of the fact that laughter is created by "something mechanical overlaid on something living." Are the fireworks bombs, which never provoke laughter, any less "mechanical" than a jack-in-the-box? Is it necessary to distinguish between chemical determinism and physical determinism? Is the explosion of a bomb or of a firecracker any less "human" (in the Bergsonian sense) than the release of a spring? In fact, observation shows, and I think that the analysis of the "fireworks" event makes clear to all my readers that the jack-in-the-box at first frightens a child,<sup>7</sup> like the fireworks; but the child gradually acquires the "determinism of the jack-in-the-box" just like that of the fireworks. Laughter is then, but only then, the manifestation of the satisfaction which he feels first of all in predicting, then in mastering and setting off at will a process which was once unknown and consequently extremely alarming.

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A few books on laughter and humor:

- BAIN, Alexander, Les Emotions et la volonté, 1859.
- BERGSON, Henri, Le Rire, 1899.
- CAZAMIAN, The Development of English Humor, 1930.
- ESCARPIT, Robert, L'Humour, 2nd edition, 1981.
- FREUD, Sigmund, Le Mot d'esprit dans ses rapports avec l'inconscient, first published in German 1905; 1st French edition by Marie Bonaparte, 1933.
- JANKELEVITCH, Vladimir, L'ironie, 1936. JEANSON, Henri, Signification humaine du rire, 1948.
- KOESTLER, Arthur, The Cry of Archimedes, 1st ed. (in English), 1964.
- SAUVY, Alfred, Humour et politique, 1979.
- SPENCER, Herbert, Essays, vol. 1. Physiology of laughing, 1891.
- To appear shortly:
- FOURASTIE, Jean, Le Rire, suite, Denoël, Paris.

<sup>7</sup> Bergson seems not to have been aware of this fact. In any case he does not mention it.