

## Introduction

*As the elements of the cosmos correspond to those within man, so both the process of creation—and the process by which man, through the Art, reintegrates himself within himself—follow an identical path and have the same meaning.*

How is it that transformation comes about? In this book, we're going to look at two models of that process, both of which ostensibly look at outer transformation, while unknowingly also speaking about inner transformation. One is an ancient model - Western alchemy - which came into existence in the Western World during the 1st through the 3rd centuries, reached its peak in the 15th and 16th centuries, and still existed in some form during the 17th and 18th centuries. In the 19<sup>th</sup> century, two writers, Mary Anne Atwood and E. A. Hitchcock, wrote books arguing that alchemy really dealt with the real purpose of religion: to restore mankind to the connection with divinity which men and women had before the Fall. In a private letter, Atwood contrasted the hermetic vision of alchemy with that of common religion: "The common faith is mystery without a fulcrum in this life whereon to rest the lever of the will."<sup>1</sup> Hitchcock said directly: "*Man as the subject of Alchemy; and that the object of the Art was the perfection, or at least the improvement, of Man.*"<sup>2</sup> Both books are fascinating and often evidence deep wisdom (in Atwood's case, usually overly recondite wisdom, much like the literature of the alchemists themselves). What separates them, however, from the approach we will follow in this book is that they are essentially pre-psychological. Both assume, like many other occultists, that the alchemists consciously hid the ancient wisdom of the few in the difficult language and purportedly material experiments recorded in their literature.

It was only in 1917, with the publication of psychologist Herbert Silberer's *Problems of Mysticism and its Symbolism*,<sup>3</sup> that psychology turned its lens on alchemy (and other hermetic<sup>1</sup> areas of study) as a model for psychological transformation. Silberer does not appear to have been aware of Atwood's book, of which few copies were available, and probably none in Germany, as the author and her father had withdrawn it from publication and destroyed most copies within weeks of its original publication. He was, however, aware of Hitchcock's book and draws heavily on it in some of his own interpretations. Silberer was a member of Freud's Vienna circle of therapists. His work is a somewhat uneasy attempt to balance a Freudian interpretation of a Rosicrucian text with ideas from alchemy (similarly to those of Hitchcock), and a variety of other mystical traditions. Freud rejected Hitchcock's work unceremoniously. Finding himself excommunicated by Freud's other followers, sadly Silberer hung himself.<sup>4</sup>

The psychological approach to alchemy was developed much more extensively by C. G. Jung, who argued that the alchemists, in their search for the Philosopher's Stone, were actually seeking inner transformation. Jung called this process *individuation*. The alchemists' descriptions of their experiments could be reinterpreted as projections of the stages of the individuation process onto the physical world. In Jung's words, "everything unknown and empty is filled with psychological projection; it is as if the investigator's own psychic background were mirrored in the darkness. What he sees in matter, or thinks he can see, is chiefly the data of his own unconscious, which he is projecting into it. In other words, he encounters in matter, as apparently belonging to it, certain qualities and potential meanings of whose psychic nature he is entirely

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<sup>1</sup> *Hermetic* refers to philosophical and spiritual traditions that trace their origin to a figure called Hermes Trismegistus, whom we will meet in chapter 2.

unconscious. This is particularly true of classical alchemy, when empirical science and mystical philosophy were more or less undifferentiated."<sup>5</sup>

Religious historian and philosopher Mircea Eliade thought that Jung had made a major discovery, that "in the very depths of the unconscious, processes occur which bear an astonishing resemblance to the stages in a spiritual operation—gnosis, mysticism, alchemy—which does not occur in the world of profane experience."<sup>6</sup> In contrast with Jung, however, Eliade felt that the similarities between individual and the alchemical opus were because all deep mystical initiations necessarily repeat the same stages, down to the details which are buried deep in the psyche. You might say it was the alchemical opus which was found within individuation, rather than the other way around, or more properly a deeper process underlies both. As he says, "every symbolism is polyvalent."<sup>7</sup> That is largely the assumption we make in this book.

The process of individuation, assumed by the unconscious without the 'permission' of the conscious, and mostly against its will, and which leads man toward his own centre, the Self—this process must be regarded as a prefiguration of the *opus alchymicum*, or more accurately, an 'unconscious imitation,' for the use of all beings, of an extremely difficult initiation process reserved for a small spiritual elite.<sup>8</sup>

The other model - chaos theory - is much more recent.<sup>2</sup> Deterministic chaos was first recognized explicitly in the early 1960's, with meteorologist Edward Lorenz's early computer models of weather, which we will discuss in chapter 1. His work led to what has been termed "sensitive dependence on initial conditions." Or more popularly: *the butterfly effect*. This

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<sup>2</sup>Throughout this book, the term "chaos theory" will be used as a blanket term that includes all of non-linear dynamics, complexity theory, etc. Closely related areas such as cybernetics and autopoiesis will also be discussed, since together, they present a view of nature distinctly different from previous scientific views.

metaphor which has spread widely goes back to a question that Edward Lorenz asked in a paper delivered in 1979: "Does the flutter of a butterfly's wings in Brazil set off a tornado in Texas?"<sup>9</sup> This is because very tiny initial changes can have very large final effects, when the changes are fed-back into a system and amplified, over and over. In the words of philosophy of science professor Stephen H. Kellert: "Even in a simple system, chaos means that if you are off by one part in a million, the error will become tremendously magnified in a short time."<sup>10</sup>

For many people their first exposure to chaos theory was through Jeff Goldblum's character, Ian Malcom, in the movie "Jurassic Park" (which was developed out of Michael Crichton's book of the same name). Though Malcolm's actual description of the theory was somewhat muddled in the movie, the entire story was an example of sensitive dependence on initial conditions. Jurassic Park was to be the culmination of the vision of financier John Hammond (played by Sir Richard Attenborough in the film). Throughout, Hammond has an almost total confidence in the ability of science to plan out every outcome. In contrast, Ian Malcom keeps telling him that nature is more complex than science's models. And so it is! The movie's plot is in effect an unfolding of how very tiny initial differences can lead to enormously different, and unexpected, outcomes.

Alchemy and chaos theory may seem to have little in common with each other or with spiritual transformation. But in fact, the two offer strikingly similar descriptions of the core processes of transformation; and each has insights about these core processes which the other lacks. It is not the intention of this book to argue that alchemy and chaos theory together provide an alternative to the many paths of spiritual transformation. Rather, we argue that anyone who is called to the difficult inner journey, ineluctably awakens deep structures in the psyche that can be seen in both the alchemical opus and, properly translated, in chaos theory. These two parallel

models provide a template for transformation, a template that necessarily underlies all other paths of spiritual transformation. In the following chapters, we will discuss in depth five critical insights (as well as many smaller ones) which provide a framework for the stages anyone must go through on their path of individuation (to use Jung's term). No matter what particular spiritual path we have chosen (or which has chosen us), these insights can help enrich our understanding of the process of transformation, whether outside in the world, or within our own lives.

- **As Above, So Below**

In alchemy, the core belief in "as above, so below," was first presented in the fabled 'Emerald Tablet.' It is no less central in Chaos theory. For example, chaos theory reveals that the global (i.e., the "above"), and the local (the "below") are inextricably mixed. The chaos theory example which is equivalent in renown to the Emerald Tablet might, however, be Benoit Mandelbrot's mathematical concept of fractals.

- **Feedback.**

Here I'm using the more modern term. All of chaos theory is based on feeding back information from one stage of a process to the next stage of the process. This was what led to Lorenz's discovery of chaos theory. Until the computer, there was no practical way for scientists to model the way nature continually feeds back actions into themselves. But alchemy tried to model such behavior by building up-and-down movements into their alchemical operations such as *sublimatio* (sublimation, aeration, rising, spirituality), and *mortificatio* (mortifying, falling into matter), or the *circulatio* (continual cycles of rising and falling). But the most

ancient alchemical symbol of feedback is the image of the *uroboros*, the snake that swallows its own tail.

- **Take apart/Put together.**

In alchemy, there are a series of operations in which the stone-in-progress is taken apart then put back together again. This is accomplished through operations such as *solutio* (i.e., dissolve), and *separatio* (break into parts), followed by operations such as *coagulatio* (coagulate, come together) or *coniunctio* (conjunction, joining). This process is implicit in all of chaos theory, especially in 'strange attractors.' The most famous example is the *baker transformation*, in which a baker kneads dough over and over, separating parts of the dough that are close together, and bringing together other parts that were widely apart.

- **Chaos and Emergence**

The alchemical opus had three primary stages in which the varied operations took place: (1) an explicit stage of darkness and chaos: the *nigredo*; (2) a stage of whiteness and asceticism: the *albedo*; and (3) a stage where new life emerged: the reddening or *rubedo*. Since all possibilities are contained within chaos, eventually out of this chaos would emerge the philosopher's stone.

And, of course, as one can tell by the name *chaos theory*, chaos is an explicit part of the modern model. As we will see in more detail, order gradually *bifurcates*, splitting into first two possibilities, then four, and so on. It is impossible in advance to predict which fork will be taken. Then at some further point, the bifurcations change into chaos. But what is a new insight in chaos theory, is that even this chaos has structure at a global level, that out of it emerges a new order.

- **The Philosopher's Stone**

The true Philosopher's Stone that the alchemist seeks is not only outside him, but also within his own soul. There are innumerable references in alchemical texts to the idea that in order to fully carry out the *opus* (i.e., the term for the full process to produce the philosopher's stone), the alchemist must first work to purify himself and make himself worthy of the stone.

The eighteenth-century philosopher Immanuel Kant was the first to realize that we never experience *das ding in sich* (the thing in itself); rather we experience the physical world through filters built into our inner world. Or, as expressed by twentieth-century neurobiologist Walter J. Freeman, a pioneer in the application of chaos theory within neuroscience: "Instead of minds shaping themselves to their sensory inputs from the world, minds shape sense impressions according to their innate categories."<sup>11</sup> Freeman demonstrated this conclusively through his study of dynamic attractors in the brain for odor and other senses.

This last topic - the understanding that the *opus* is within us as much as it is without - is, of course, why this book can teach each of us something about our own process of self-transformation. The two models of outer transformation also directly reflect our processes of inner transformation. This conjoined relationship between the world and the psyche has been presented in Buddhist philosophy by the image of Indra's net: a vast necklace of shining jewels, all interconnected. Or in the words of Alain de Lille, a twelfth-century theologian: "God is an intelligible sphere whose centre is everywhere and whose circumference is nowhere."<sup>12</sup> Each of us through our own process of growth and transformation in turn affects everyone and everything.

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1. In a letter to C.C. Massey, quoted in the introduction to the 1920 edition of *A Suggestive Inquiry into the Hermetic Mystery* (Belfast: William Tait, 1920), p. 30. Originally published in 1850 in London, by Trelawney Saunders. The original edition was published anonymously by the then Mary Anne South, and withdrawn six weeks later by South and her father and intellectual companion, Thomas South, for fear that it revealed secrets that were intended to remain hidden.
2. Hitchcock, E. A. *Remarks on Alchemy and the Alchemists* (Boston: Crosby, Nichols, and Co., 1857), p. iv.
3. Silberer, Herbert. (Jelliffe, Smith Ely, trans.). *Problems of Mysticism and its Symbolism* (New York: Samuel Weiser, Inc., 1970). Reprint of edition of 1914.
4. some of this information was drawn from the Wikipedia article on Silberer, found on the World Wide Web, 09/01/07, at [http://en.wikipedia.org/wiki/Herbert\\_Silberer](http://en.wikipedia.org/wiki/Herbert_Silberer).
5. Jung, C. G. *Collected Works, Vol. 12: Psychology and Alchemy, 2<sup>nd</sup> ed.* (Princeton, Bollingen Series XX, Princeton University Press, 1968), par. 332.
6. Eliade, Mircea. (Stephen Corrin, trans.). *The Forge and the Crucible*, 2nd ed. (Chicago: University of Chicago Press, 1962), p. 223.
7. Eliade. *The Forge and the Crucible*, p. 224.
8. Eliade. *The Forge and the Crucible*, p. 224.
9. Gleick, James. *Chaos: Making a New Science* (New York: Viking Penguin, 1987), p. 322.
10. Kellert, Stephen H. *In the Wake of Chaos* (Chicago and London: University of Chicago Press, 1993), p. xi.
11. Walter J. Freeman. *Society of Brains*. Hillsdale, New Jersey: Erlbaum, 1995, p. 18).
12. This idea was thought to have originated in the *Corpus Hermeticum* of the 3rd Century. It later found many variant expressions in authors as famous as Pascal and Emerson.