

IN REMEMBRANCE OF MARIE-LOUISE VON FRANZ
1915-1998

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On February 17 of this year, Marie-Louise von Franz, psychotherapist and classical scholar, completed her passage through life—an extraordinary life made all the more remarkable by her many years of close association with the Swiss psychologist, C.G. Jung. von Franz was born in Munich in 1915, the daughter of an Austrian baron. When she was three years old, her family relocated to Switzerland. She first met Jung when she was an 18-year-old student—shy, introverted, keenly intelligent, and struggling to understand her relationship with her parents and to determine which course of studies best suited her. She chose to study classical languages, and by 1940 she had received a Ph.D. from the University of Zurich, with a specialty in medieval Latin. With this expertise, she provided Jung with translations of the medieval alchemical texts which he needed to pursue his investigation of the psychological basis of alchemy, in exchange for psychoanalytic sessions and training. By 1949 she had become an analyst in her own right, and she soon emerged as one of Jung's closest collaborators in the development of analytical psychology. Within the Jungian community she is best known for her studies of the psychological significance of fairytales and of alchemy, but her deepest and most difficult work is concerned with the archetypal aspects of the natural numbers.

About two years before his death, Jung handed to von Franz a small slip of paper upon which he had begun to gather notes about the mathematical properties of the first four integers, saying, "I am too old to be able to write this now, so I hand it over to you." At the time she did not know whether he intended for her to pursue his study of number archetypes, or if he simply wanted her to hand it over to someone whom she might meet that would be suitable for such a project. After Jung's death she preferred to assume the latter because she felt incapable of doing it herself. However, as a long interval passed without the appearance of anyone to take up the task, she was 'bitten' by her conscience and subsequently entered into a long and intensive period of research and writing that culminated in the publication in 1970 of her treatise on number archetypes, *Zahl und Zeit (Number and Time, 1974)*.

As indicated by the subtitle of this work —“Reflections Leading toward a Unification of Depth Psychology and Physics”—von Franz’s intention with *Number and Time* was to continue to explore the ideas that had grown out of the collaboration of Jung with the Nobel laureate quantum physicist, Wolfgang Pauli. von Franz was, despite her reticence, well positioned to take on this work, for she had worked closely with both men during the decade of their collaboration—helping each by translating passages from alchemical texts and working with Pauli to explore the symbolism of his dreams and visions that were related to his intellectual quest. In the course of this collaboration, which in its most active phase spanned the years from 1946-54, Jung and Pauli arrived at a set of propositions about the nature of reality that mark a fundamental departure from the tenets of the worldview of modern science that has prevailed since Descartes. Jung and Pauli came to hold that the realm of mind, *psyche*, and the realm of matter, *physis*, are complementary aspects of the same transcendental reality, the *unus mundus*. They asserted that archetypes act as the fundamental dynamical patterns whose various representations characterize all processes, whether mental or physical. In the realm of *psyche*, archetypes organize images and ideas; in the realm of *physis*, they organize the structure and transformations of matter and energy and account for acausal orderedness, as well. Furthermore, archetypes acting simultaneously in both the realms of *psyche* and *physis* were held to account for instances of synchronistic phenomena.

Jung and Pauli’s collaboration came to an end in what were to be the later years of their lives, and neither man was able to pursue these propositions further. Pauli, however, expressed an interest in exploring the archetypal ideas that form the basis of mathematics, particularly the idea in arithmetic of an infinite series of integers and the idea in geometry of the continuum (Pauli, 1994), and Jung was drawn to the archetypal nature of natural numbers.

Starting from Jung’s initial hints, von Franz investigated number archetypes as dynamical ordering factors active both in psyche and in matter. In *Number and Time*, she examined aspects of number and numeration drawn from a wide variety of cultures both ancient and modern, primitive and technologically advanced. She discussed in particular detail the qualitative aspects of the structure of the number archetypes that give rise to the first four integers. As well, she investigated the dynamical aspects of the number archetypes and their relationship to physical and psychic energy, and she discussed historical and mathematical models of the *unus mundus* and the role of number archetypes in synchronistic phenomena.

From her investigation of number archetypes, von Franz concluded that the primarily collective, quantitative aspects of number that preoccupy Western number theory are complemented by individual, qualitative aspects. To illustrate these aspects of number, she cited examples of the treatment of numbers in ancient Chinese number systems, and concluded that the Chinese did not use numbers as quantitative sets but as emblems or symbols: “Numbers thus serve chiefly to make visible the circumstantial individual aspects of the cosmic unity or whole.”(p. 41) Chinese numbers also contained an essential relation with time: “In China, numbers signify organizations which vary in time, or transient ‘ensembles’ of inner and outer factors within the world-totality.”(p. 41-2)

Common to both Western and ancient Chinese approaches to number, however, is the use of number in establishing regularity and order. Jung had stated that “[number] may well be the most primitive element of order in the human mind...thus we define number psychologically as an archetype of order which has become conscious.” (p. 45) As with all

archetypes, the number archetypes have an inherent dynamical quality--that is, they represent abstract patterns of rhythmical behavior. von Franz held that:

The archetypes primarily represent dynamical units of psychic energy. In preconscious processes they assimilate representational material originating in the phenomenal world to specific images and models, so that they become introspectively perceptible as 'psychic' happenings (p. 155)

In *Number and Time*, the *quaternio* of archetypes that underlie the first four integers are discussed in particular detail. Summarizing their archetypal behavior, von Franz explained that, Numbers then become typical psychological patterns of motion about which we can make the following statements: One comprises wholeness, two divides, repeats and engenders symmetries, three centers the symmetries and initiates linear succession, four acts as a stabilizer by turning back to the one as well as bringing forth observables by creating boundaries, and so on.(p. 74) von Franz postulated that representations of this *quaternio* provide the dynamical patterns which underlie all processes of perception and symbol formation in the psyche and account for the structure and transformation of matter and energy in the physical world.

Natural numbers appear to represent the typical universally recurring, common motion patterns of both psychic and physical energy. Because these motion patterns (numbers) are identical for both forms of energy, the human mind can, on the whole, grasp the phenomena of the outer world. This means that the motion patterns engender "thought and structure models" in man's psyche, which can be applied to physical phenomena and achieve relative congruence. The existence of such numerical nature constants in the outer world, on the one hand, and in the preconscious psyche, on the other (e.g., in the quaternary structures of the "psychic center", the triadic structure of dynamic processes, the dualistic structure of threshold phenomena, and so forth) is probably what finally makes all conscious knowledge of nature possible (p. 166-7)

The dynamical behavior of the number archetypes, in particular the *quaternio*, is thus held to characterize all physical processes and all mental acts of perception and symbolic representation. Thus, the number archetypes are thought to be universal aspects of symbol formation. Consequently, as von Franz has pointed out, the number archetypes should provide the means to construct what Pauli had called a language which is 'neutral' with respect to psycho-physical distinction. Such a language, as yet undeveloped, would offer an archetypally-invariant basis upon which representations of all physical and mental processes could be established.

The cluster of propositions that grew out of the collaboration of Jung and Pauli constituted a hypothesis about the role of archetypes in the structuring of reality. Through her research into number archetypes, von Franz has significantly clarified and extended their archetypal hypothesis such that it may be restated as follows:

All mental and physical phenomena are complementary aspects of the same unitary, transcendental reality.

At the basis of all physical and mental phenomena there exist certain fundamental dynamical forms or patterns of behavior called number archetypes.

Any specific process, physical or mental, is a particular representation of certain of these archetypes. In particular, the number archetypes provide the basis for all possible symbolic expression.

Therefore, it is possible that a neutral language constructed from abstract symbolic representations of the number archetypes may provide highly unified, although not unique, descriptions of all mental or physical phenomena.

von Franz was not satisfied with *Number and Time*; she called it, “a rather unreadable book” and regretted that it had failed to communicate and provoke discussion of its central tenets. With it, she had tried to take Jung’s initial hints somewhat further and to show that a “real, absolute isomorphism is present,” between representations of the number archetypes as they appear in the psyche and in the physical world. She said, “I was able to take this up to the number four. Then it became too complicated, and at that point I also hit my head on the ceiling,” (von Franz, 1992, p. 37) just as Jung, too, had hit his head on the ceiling prior to turning the project over to her.

With *Number and Time*, von Franz unquestionably leads the reader through forbidding terrain--assuming extensive knowledge of Jungian psychology, as well as knowledge of major developments and issues in twentieth century physics and mathematics. She has attempted to create a discourse between the areas of depth psychology and physics, with the intent of working toward their ultimate unification—a task which can only be seen as Herculean. At present there are two factors which have helped to improve the accessibility of *Number and Time*. The first is the publication in 1992 of von Franz’s *Psyche and Matter*, a collection of twelve of her essays and lectures which clarify and amplify much of the content of *Number and Time*, and as such it comprises a suitable companion volume to it. The second factor is the emergence in the past decade of a growing interest in the collaboration of Jung and Pauli, including the publication of their correspondence and much valuable secondary source material.(for references see Card, 1991, 1992, 1998; Robertson, 1995)

From the vantage point offered by these works, it is now possible to reassess the importance of von Franz’s work on number archetypes: by developing and refining the central ideas of the Jung-Pauli collaboration, she has pointed, through her examination of the number archetypes, to the way by which Pauli’s psycho-physically neutral language might be obtained. If this should ever be achieved, it could become the means for the development of a post-Cartesian archetypal science in which a unified inquiry into the nature of mind and matter could take place. If this is so, then von Franz’s most obscure work would easily become her most important. It is hoped that the essay which follows will help to advance von Franz’s work and be seen as a fitting tribute to her.

Further reading

- Card C.R. (1991), *The Archetypal View of Jung and Pauli, Psychological Perspectives*, #24 and #25 (Los Angeles: C.G. Jung Institute)
- Card C.R. (1992), *The Archetypal Hypothesis of Wolfgang Pauli and C.G. Jung: Origins, Development and Implications*, in K.V.Laurikainen and C.Mononen, eds. *Symposia on the Foundations of Modern Physics*, Singapore: World Scientific Publishing Co., p.382.
- Card, C.R. (1998), *The Emergence of Archetypes in Present-Day Science and its Significance for a Contemporary Philosophy of Nature, Mind in Time*, (Hampton Press, forthcoming). The German version of this paper was published in T. Artz, et

al., *Philosophia Naturalis*, Wuerzburg, Koenigshausen & Neumann, 1996, and the English version is published in the e-journal, Dynamical Psychology (<http://goertzel.org/dynapsyc/>).

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Robertson R. (1995), *Jungian Archetypes: Jung, Goedel, and the History of Archetypes*, Nicolas-Hays, York Beach, Maine.