Table 13. Comparison among city-block distances between Hamming patterns shown in Fig. 6 (Type I–IV) and in Fig. 13 (Type I′ and II′).

	TypeI	Type II	Type III	Type IV	Type I′	Type II′
Type I	0	110	104	127	58	127
Type II	110	0	98	123	108	59
Type III	104	98	0	67	124	125
Type IV	127	123	67	0	141	148
Type I′	58	108	124	141	0	127
Type II′	127	59	125	148	127	0

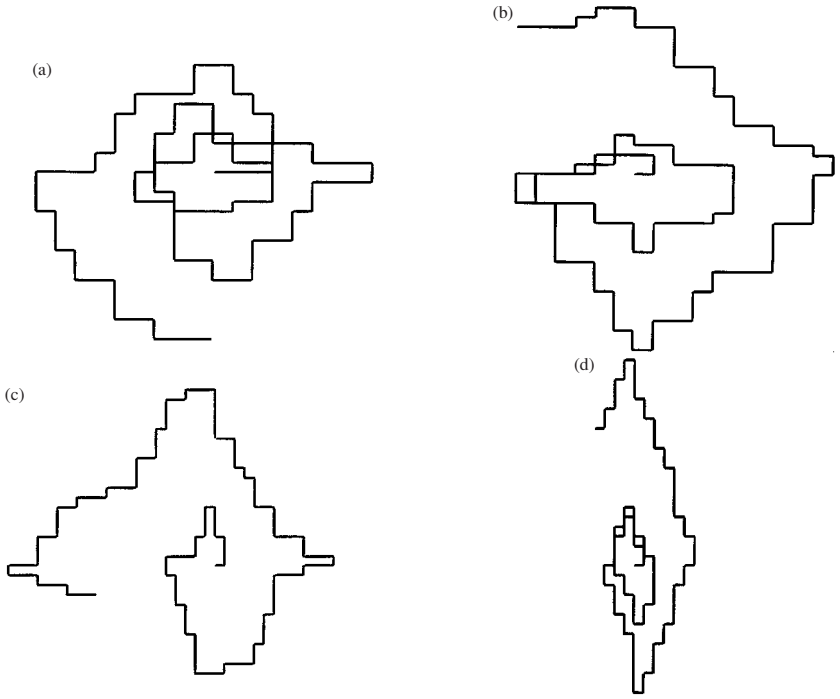

Fig. 17. Two-dimensional expression of a series of Hamming distances with a notched spiral that provides the basis for creating a mandala. (a) Type I order. (b) Type II order. (c) Type III order. (d) Type IV order.

i.e., the most orderly (Fig. 6(d)) and the most chaotic (Fig. 13(b)) variations. A pattern being shifted along the ordinate may possibly shorten the divergence. Actually, shifting Type III pattern upward by unity, we find that $D_1 = 87$ for (Type I, Type III) while $D_1 = 81$ for (Type II, Type III).

5. Creating *I Ching* Mandalas

Mandalas are highly symmetrical arrangements of either geometrical figures (Type A) or sacred symbols (Type B), both of which constellate around the center (Jung, 1968). Originally they were used as means of the religious achievement in the Hinduism as well as the Buddhism. The general interest in the mandalas is nowadays such that they have far exceeded the boundaries of Indology and Tibetology and that the mandalas have now come to be regarded as one of the universal problems directly related to the mysteries of the substructure of the human psyche, as something essential to, and inherent in human nature (Izutsu, 1976). In the course of constructing the system of his depth psychology, which nowadays is known as Jungian psychology, Carl Gustav Jung (1875–1961) appreciated the mandalas as a psychological expression of the totality of the self (Jung, 1968). In the mandalas with its symmetrical arrangement of a variety of archetypal images, one experiences his own inner world as an entirely new, organic, and integral whole. Subsequently, through the study on the *I Ching* and Confucian metaphysics, Toshihiko Izutsu (1914–1993) introduced this concept in his astonishingly comprehensive knowledge of symbolic systems, and aptly expressed it in the term '*I Ching* mandala' (Izutsu, 1976). The *I Ching* mandala signifies the mandalic representation of the sixty-four hexagrams, which are constellated around a center with its configuration preserving the four-fold symmetry. To date, several pictorial representations of the hexagrams, such as the Yellow River Diagram, the Lo River Writing, and illustrations in the form of a magic square, have been categorized into candidates for the *I Ching* mandala. In this section, with application of the spiral mapping technique (Hayata, 2004, 2007) we shall attempt to express in a mandalic form a series of the Hamming data that have been presented in Fig. 6. In this method, from a point on the outermost orbit to the center, a notched spiral with the clockwise rotation is drawn in accordance with the direction of the sequence. However, because of the uncertainty in the location of the