

PART TWO

**Translation of *Sun Zi Suanjing*
(The Mathematical Classic of Sun Zi)**

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Preface

Master Sun says: Mathematics [governs]¹ the length and breadth of the heavens and the earth; [affects] the lives of all creatures; [forms] the alpha and omega of the five constant virtues, [i.e., benevolence, righteousness, propriety, knowledge and sincerity]; [acts as] the parents for *yin* 陰 and *yang* 陽; establishes the symbols for the stars and the constellations; [manifests] the dimensions of the three luminous bodies, [i.e., sun, moon and stars]; maintains the balance of the five phases, [i.e., metal, wood, water, fire and earth]; [regulates] the beginning and the end of the four seasons; [formulates] the origins of myriad things; and [determines] the principles of the six arts, [i.e., propriety, music, archery, charioteership, calligraphy and mathematics].

[The function of mathematics] is to investigate the assembling and dispersing of the various orders [in nature], to examine the rise and fall of the two *qi* 氣,² [i.e., *yin* 陰 and *yang* 陽], to compute the alternating

¹ Square brackets are used to indicate editorial additions by way of explanation, amplification, or adaptation to the grammar of the English language.

² The term *qi* 氣 is somewhat analogous to the *pneuma* of the ancient Greeks and the *prana* of the ancient Hindus. It can exist in two different states, namely, *yin* and *yang*, which are generally considered as fundamental forces of the universe. The *yin* and *yang* are both opposite and complementary to each other. They interact with and dominate over each other successively in a wavelike action.

movements of the seasons, to pace out the distances [of the celestial bodies], to observe the intricate signs of the way of the heavens, to perceive the physical features of the earth, to locate the positions of the celestial and terrestrial spirits, to verify the [causes] of success and failure, to exhaust the principles of morality, and to study the temperament of life. [The field of mathematics covers] the use of the compass and the carpenter's square to regulate squares and circles, the fixing of standard measures to estimate lengths, and the establishment of measures to determine weights. [These measures] are split [to the accuracies of] *hao* 豪 and *li* 釐 [for lengths], and *shu* 黍 and *lei* 釐 [for weights].³

[Mathematics] has prevailed for thousands of years and has been used extensively without limitations. If one neglects its study, one will not be able to achieve excellence and thoroughness. There is indeed a great deal to master when one views mathematics in perspective. When one becomes interested in mathematics, one will be fully enriched; on the other hand, when one keeps away from [the subject], one finds oneself lacking intellectually. When one studies [mathematics] readily like a youth with an open mind, one is instantly enlightened. However if one approaches [mathematics] like an old man with an obstinate attitude, one will not be skilful in it. Therefore if one wants to learn mathematics [fruitfully], one must discipline oneself and aim for perfect concentration; it is through this way that success in learning is assured.

³ For these measures, see p. 191.