

THE CANON IN THREE PARTS

The idea of a canon of measures lies like a germ within the Pythagorean tradition.¹ The Gurdjieff Work is a Pythagorean mystery school. Thus it would only stand to reason that Gurdjieff would have treated the *Canon* as vital to the teachings. The word *canon* has to do with “law.” Plato, in *Laws*, tells us that by the time of his writings, the Egyptian high civilization had already preserved the Canon from deterioration and misuse for at least 10,000 years. The canon was the absolute criterion that set the standard for all the arts and sciences, regulated every aspect of human society in accordance with cosmic cycles, and interconnected all and everything into a harmonious wholeness. One might say that it connected all the links in the chain.

Being the measure of the All, the Sacred Canon was God’s rule. When St. Bernard of Clairveaux said: “What is God? He is length, width, height, and depth,” he was expressing the ancient view that everything in the universe is under the sacred rule of the Canon; everything can be *measured*. According to Gurdjieff, “Everything in this universe can be weighed and measured. The Absolute is as material, as weighable and measurable, as the moon, or as man. If the Absolute is God it means that god can be weighed and measured, resolved into component elements, ‘calculated,’ and expressed in the form of a definite formula.”²

Some have said that the very history of a civilization is the history of their interpretation of the Canon; that when accurately and skillfully used by priesthood and royalty, it *sanctified* the peoples and made *whole* the civilization who possessed it; thus it was called the *Sacred Canon*. Today that connotation of sacredness is retained for example, in its meaning as “a provision of ecclesiastical law;” or as one who is a member of the clergy on the staff of a cathedral; or as the books of the Holy Scriptures accounted for by divine inspiration. A saint is “canonized” when officially exalted by church authorities; and the robes of the priest are called “canonical vestments.” There are seven “Canonical Hours,” called the Divine Office, which are “Obligatories”³ to be recited at specified times of the day. There are six “Obligatories” in the Movements, the *sacred dance*, brought by Gurdjieff; plus the seventh “Slow Obligatory.”

The word *canon*, defined as “a measuring line, or rule,” was a *linear* measure. According to metrologist Professor Livio Stecchini, “all the measures of length, volume, and weight of the ancient world, including those of China and India, constituted a rational and organic system, which can be reconstructed starting from a fundamental unit of length.” Units of volume were obtained by cubing units of length. Units of weight were obtained by filling the units of volume with rain water at ordinary temperature. He goes on to say that “all serious scholars of ancient and medieval measures have always known that all measures of volume and weight are derived from the units of

¹ Central to the idea of the canon is Euclid’s *Sectio canonis*. As the earliest complete treatise, probably dating from around 300 B.C., the quotations taken from it by both Porphyry and Boethius demonstrate the fundamental role it played in the transmission of Pythagorean ideas. Porphyry, Ptol. Comm. 99 – 103. Here he quotes the first sixteen propositions. Boethius, Musica iv.1-2 Boethius quotes the introduction and nine of the twenty propositions.

² Fragments, p. 86

length.”³ Ouspensky, hinting of such a *canon*, writes that “the results for all cosmoses should be obtained in lineal measurements.”⁴

The Canon might well be termed the “original String Theory” since it measured the straight and linear divisions of *one length of string* (*mono*, meaning “one”; *chord* meaning “string”). Claudius Ptolemy (c. second century C.E.), in his complex mathematical treatise, *The Harmonics*, assigns to the word (*kanon*) the direct meaning of the Pythagorean instrument called a *monochord*: “The instrument of this kind of method is called the harmonic *kanon*, a term adopted out of common usage, and from its straightening those things in sense perception that are inadequate to reveal the truth”.⁵ Ptolemais of Cyrene sets out the definition of a linear measure, and straightness, when she writes about the ancient *kanon* in a work titled *Pythagorean Elements of Music*: “From what do we derive the name *kanon*? Not, as some people think, by transference from the instrument called the *kanon*, but from straightness, on the grounds that it is through this science that Reason discovers what is correct.”⁶ Both Ptolemy and Ptolemais held that the Canon, created from mathematical calculations, from Reason, has truths embedded in it that our senses are unable to detect.

The etymology of the word *canon* shows that it also pertains to “something endlessly repeating.” For example, a musical *canon* is a composition based upon imitation, one voice leading, another following at an agreed upon interval of time and pitch. (A familiar one is “Row, Row, Row the Boat”). An “infinite canon” is one that can be performed an unlimited number of times without a break; while a “finite canon” comes to a rest at the “coda.” The melody itself can be changed by the devices of inversion, augmentation, diminution, and retrogression (or cancrizans). Some other examples of famous musical canons are Thomas Tallis’s hymn tune; Byrd’s “Grace, Non nobis, Domine;” Pachelbel’s “Canon in D,” and Mendelssohn’s double canon, “The Nightengale.”

In mathematical terms, a *canon of numbers* is one that repeats a cyclic arrangement of the same digits, each repetition called a “period.” A very good example of a mathematical canon is seen in a unit divided into seven parts: $1/7$, $2/7$, $3/7$, $4/7$, $5/7$, $6/7$. The fractioned sevenths result in the repeating numerical canon familiar to Gurdjieff’s pupils, shown below. Knowing the sequence of the first six digits, one can reconstruct the full period.ⁱⁱ The first six fractions, from $1/7$ to $6/7$, are an *infinite canon*:

.142857 .285714 .428571 .571428 .714285 .857142.

³ See Appendix to secrets of the great Pyramid, Tompkins, Harper and Row. 1971.

⁴ Fragments, p. 336

⁵ The Harmonics, Bk. 1:2 Ptolemy. Trans. Barker, GMW II, p. 278

⁶ Ptolemais: Porph. Comm. 22.22. Translated in Greek Musical Writings II, Barker, p. 239

At the seventh seventh [7/7], there is a rest (arrest) at the “coda” (which means “tail” in the Italian language). Here, at .999999, the *finite canon* comes to a stop. In biblical terms, the stop refers to the seventh day, the Sabbath, the day that God rests from his labors. The “stop” exercise was used by Gurdjieff as a means of instructing his pupils.⁷

The finite and infinite canons relate to incommensurability: the Infinite never stops, but Nature does not continue forever. Since the finite and infinite are incommensurate, even to be able comprehend their great differences requires comparisons, or measures of difference. Ratio is the very measure of difference. Ratio comprehends the difference between the infinite part (variously called Heaven, Consciousness, Spirit, Mind), and the finite part (Nature, Unconsciousness, Matter, Body). The infinite spirit and physical body work according to different laws. In that sense, they are like the disparate systems of the physicists that find no unification. One is the great outer world of astronomy that uses the general theory of relativity; the other is the inner world of subatomic particles that deals with quantum laws. Physicists say that the connecting link between the two is String Theory – but so far they haven’t figured out why or how.

The Work shows how to connect the links in the chain. The first fundamental step on the way to initiation requires that man recognize these two disparate parts in himself. “So long as a man takes himself as one person he will never move from where he is. His work on himself starts from the moment when he begins to feel two men in himself.”⁸

The human being is two-natured: both animal and god. If the two parts in a man are ever to be brought together into a harmonious whole, so close that their discrepancies can be discounted, a retardation must be effected. For this, a mathematical rule, a canon, is necessary. As Gurdjieff said, to divine the principles of the divisions of the Canon (*sectio Canonis*) without understanding the laws upon which the division is based, is impossible. “In right knowledge the study of man must proceed on parallel lines with the study of the world, and the study of the world must run parallel with the study of man. Laws are everywhere the same, in the world as well as in man. . . . The number of fundamental laws which govern all processes both in the world and in man is very small. Different numerical combinations of a few elementary forces create all the seeming variety of phenomena. . . . In order to understand the mechanics of the universe it is necessary to resolve complex phenomena into these elementary forces. . . it is necessary to regard the universe as consisting of vibrations.”⁹ From a scientific standpoint, a fundamental tone, set vibrating, generating a series of partials must, of course, be referring to none other than the *harmonic series*. What scientist today, however, realizes that *the infinite canonic procession is actually a mathematical picture of the harmonic overtone series*? The reader is encouraged to get out a hand-held calculator, divide the fractions, and feel the astonishment as one realizes the vast implications of this real and true “String Theory.”

⁷ One of Gurdjieff’s 39 movements is named “Stop.”

⁸ Fragments, p. 147

⁹ Fragments, p. 22

Table 1: THE HARMONIC OVERTONE CANON, THE “REAL” STRING THEORY

The first series:

$.285714/.142857 = 2$	C to C	2/1
$.428571/.285714 = 1.5$	C to G	3/2
$.571428/.428571 = 1.3333333$	G to C	4/3
$.714285/.571428 = 1.25$	C to E	5/4
$.857142/.714285 = 1.2$	E to G	6/5
$.999999/.857142 = 1.1666667$	G to Bb	7/6
$1.142857/.999999 = 1.1428571$	Bb to C	8/7

The process continues through the second series:

$1.285714/1.142857 = 9:8$	C to D	9/8
$1.428571/1.285714 = 10:9$	D to E	10/9
$1.571428/1.428571 = 11/10$	E to F#	11/10
$1.714285/1.571428 = 12/11$	F# to G	12/11
$1.857142/1.714285 = 13/12$	G to A	13/12
$1.999999/1.857142 = 14/13$	A to Bb	14/13
$2.142857/1.999999 = 15/14$	Bb to B	15/14
$2.285714/2.142857 = 16/15$	B to C	16/15

If the canon is repeated a third time, at the close of the third series, at the 22nd seventh—22/7, the Fx (i.e., F-double-sharp)—we arrive at the irrational number known as pi //, one of the ancient values of which, in decimals, is 3.142857.

The third series:

$2.285714/2.142857 = 16/15$	C to C#
$2.428571/2.285714 = 17/16$	C# to D
$2.571428/2.428571 = 18/17$	D to D#
$2.714285/2.571428 = 19/18$	D# to E
$2.857142/2.714285 = 20/19$	E to F
$2.999999/2.857142 = 21/20$	F to F#
$3.142857/2.999999 = 22/21$	F# to FX

This Archimedean *pi* value, 22/7 (or 3 1/7), while it occurs at the completion of the third series of the canon, does not stop at the C. Rather, the *stop* happens at the “FX” and seems to suggest the “thrice-great Hermes” himself.

ⁱ There are “Obligatories” in the sacred Movements brought by Gurdjieff.

ⁱⁱ See *In Search of the Miraculous*, p. 289, for a discussion of this repeating decimal, and its relationship to the Law of Octaves and the Enneagram.