THE RUNE ALPHABET
AND THE EVOLUTION OF NUMBER SYMBOLISM

Gematria in the Germanic World

by
Traute Wollenberg

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ABSTRACT

In the ancient languages, number and language were closely related, and from this relationship, number symbolism has evolved. The roots from which number words were formed in the Semitic languages are the bases for the symbolic meanings which have been handed down through the ages and through the various languages. Originally these meanings were understood by all who spoke the language, but as new languages developed, the meanings underlying the number words became less evident, and gradually they had to be explained as being symbolic.

Not only in the spoken language but also in the written word can we trace a definite correlation between number and letter. In Hebrew and Greek, each letter of the alphabet represents not only a phonetic but also a numeric value. Every word therefore can be equated with a numeric, or gematric sum. Since these values are not obvious at first glance, they lend themselves to a secret code which lies hidden within the written word. The Bible employs a system of gematria as a means of giving a unified structure to the text.

In mystic cults, gematria was passed on to initiates as secret knowledge, and as such it was adopted into the Germanic rune alphabet. The gematric values of bracteate inscriptions, for example, show a preference for sums which are divisible by 13. The rune which bears the value 13 is named "yew" (German Eibe).

As this tree is associated with health, strength, and longevity, these qualities were transfered to the number 13, making it the most desired factor in amulet inscriptions.

With the advance of Christianity, shamanism all but died out in Europe and with it the gematria of the runes. Since the symbolic meanings of numbers and letters were never common knowledge, they were lost for centuries, and we are only now rediscovering them.

When the Latin alphabet came into use in Europe, there developed a greater emphasis on the meanings of number words, since the Romans had never established a system of gematria. During the Middle Ages, symbolic numbers were no longer employed to endow words with charms, but to lend harmony and design to the written message. Both the pagan gematria and the medieval numeric structure developed a complexity which cannot be understood from the meaning of the word, as had been the case in the Semitic languages, but has to be explained by a special symbolic code.

To K. W. Maurer

in whose inspiring classes the topic
of this dissertation was conceived.
Without his faithful encouragement
the work may never have been completed.

CONTENTS

ILLUSTRATIONS

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INTRODUCTION

> Number . . . is not so much a symbol as an essence.[1]

In early times, the concept of number was inseparable from the concept of language. The Greek word λογος exemplifies this unity, because it stands for meanings which, to our way of thinking, seem almost unrelated. Among them are:

— word, discourse, story, book;

— thought, reason, reckoning, computation.[2]

In most languages we recognize a limited correlation between number words and their symbolic meanings, but in the Semitic languages, the two are inseparably linked. In Hebrew, for example, the verb meaning "to unify, collect" has the same root as the number "one."[3] The verb meaning "to fold, duplicate, alter, disguise, pervert" has the same root as the number "two"[4], hence "two" received the symbolic meaning of "division or separation" and therefore "evil." Other

[1] Vincent Foster Hopper, Medieval Number Symbolism (1923; rpt. New York: Cooper Square Publ., 1969), p.68. This is a reference to Gnosticism as compared to Pythagoreanism.

[2] Langenscheidt's Pocket Greek Dictionary (n.d.), s.v. "logos."

[3] James Strong, Dictionary of the Hebrew Bible (n.d.), s.v. #258 "achad" and #259 "echad."

[4] Strong, s.v. #8138 "shanah" and #8147 "shenayim."

number words have corresponding meanings.[5]

As long as we remain with the Semitic languages, the association of word and number is easily understood. Even in English, the meaning of the number "one" is reflected in such words as "oneness, only, unify, unity." In German, the original meaning of the number "zwei" has given rise to such derivatives as "entzweien, Zwist, Zwietracht." Above two, however, we resort to symbolic explanations to clarify the deeper meanings of numbers, because in the Germanic languages the original bond between number and language has been lost.

This present study will trace the evolution of number symbolism by concentrating on the following stages in its development:

(a) The unity of number and language in the ancient languages (Chapter One).

(b) The system of number symbolism in the Germanic world (Chapter Two).

(c) The reliance on numeric structure in medieval times (Chapter Three).

Stages (a) and (c) have been extensively researched during the last hundred years, while stage (b) has been sorely neglected, probably because the extant primary sources are not always too well preserved and are therefore difficult to decipher. In an attempt to remedy this neglect, this thesis will focus its main effort on this period which presents a necessary link between the other two.

[5] For a discussion of the meaning of "seven" see pp. 13-14 below.

CHAPTER ONE

UNITY OF NUMBER AND LANGUAGE: THE BIBLE

I. The Significance of Number in Scripture

> He telleth the number of the stars,
> he calleth them all by their names.
> Ps. 147:4

> Lift up your eyes on high and behold
> who has created these things that
> bringeth out their host by number,
> he calleth them all by their names.
> Isa. 40: 26

Scripture assigns great significance to numbers and names, and when linking the two concepts, number is mentioned first. Whole pages are devoted to the enumeration of numbers as well as names, and in fact, the fourth book of the law of Moses bears the title " Numbers." Not only the Bible, but ancient writings in general show a preoccupation with the study and application of number.

Some numbers carried greater significance than others, and one way of establishing their order of preference is to simply check the frequency of their use. With the help of Strong's Exhaustive Concordance of the Bible, a rough count of numbers as ordinals and cardinals was made. In this particular

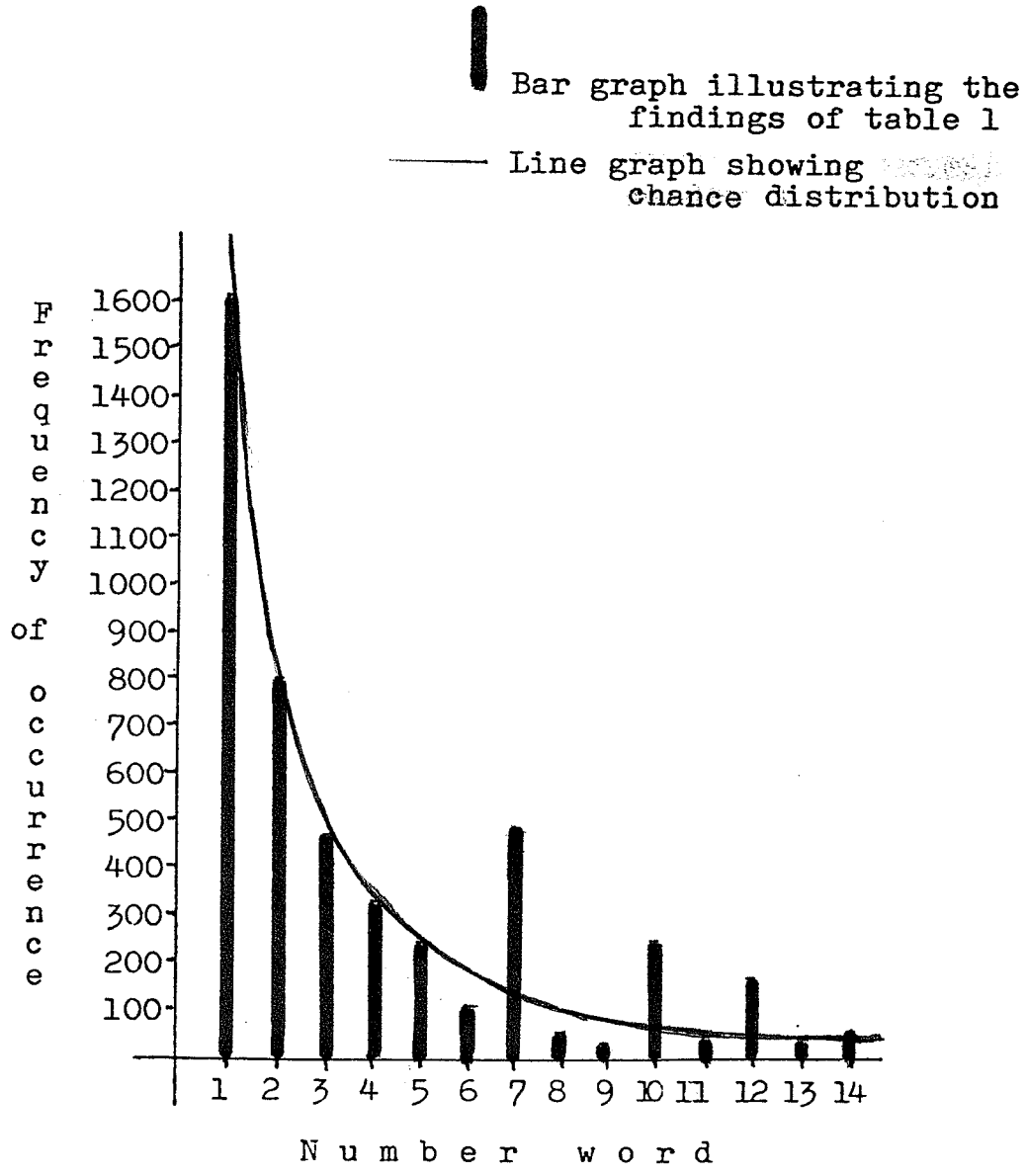
concordance, each listed item is identified by its Hebrew or Greek original, and it is probably the most accurate work of its kind. Table 1 shows the results of this investigation.

TABLE 1: Frequency of Occurrence of Number Words in the Bible

Number Word	Occurrences
1	roughly 1600
2	roughly 800
3	475
4	325
5	241
6	106
7	exactly 490
8	62
9	17
10	248
11	39
12	186
13	24
14	43
20	126
40	101
50	113
60	24
100	107
1000	140

When visualized in a graph, the significant numbers are more easily recognized. Graph 1 records the results shown in table 1 and compares them with distribution according to chance selection.

GRAPH 1: Occurrence of Number Words in the Bible



As might be expected, numbers show decreasing frequency with increasing magnitude. In the numbers from one to nine, a fairly regular curve would emerge, were it not for the abnormally high frequency of the number seven. It occurs about 4½ times as often as expected. "It is the number three (with its multiples) which is the outstanding number in ancient

religions and philosophies, seven having to take a lower place. In the Bible, however, seven stands supreme."[1] Three shows only normal frequency, and its multiples, six and nine, even fall below their expected norms. This fact is surprising, because traditional liturgies emphasize the role of three almost to the exclusion of all other numbers, and in ancient literature the same pattern prevails. In Homer's writings, for example, three occurs more than twice as often as its closest rival, twelve, which is then followed by nine, twenty, ten, and only then by seven in sixth place — disregarding one and two.[2]

TABLE 2: Predominant Numbers above 2 in Order of Frequency

In the Bible		In Homer's writings	
Number word	Frequency	Number word	Frequency
7	490	3	123
3	475	12	59
4	327	9	47
10	248	20	44
5	241	10	41
12	182	7	34
1000	140	6	25

[1] R. McCormack, The Heptadic Structure of Scripture (London: Marshall, 1923), p. 14.

[2] Details taken from Gabriel Germain, Homère et la mystique des nombres (Presses Universitaires de France, 1954), p. 8.

Even elementary school children learn to regard 7 with respect, because it is the lowest number which presents considerable difficulty in calculations. When reducing fractions, for example, we have available fairly simple tests of divisibility for every number up to 10, except for 7. There is only one way of finding out whether a number is divisible by 7, and that is to actually carry out the division. This is one reason why this number has so often been regarded with a kind of awe — an awe which is intensified by the reading of the Bible where this number seems to be endued with mystery. The Pythagoreans also revered the number 7, since it is the only member of the decad which is not generated geometrically by other numbers.[3] We shall therefore take a closer look at this number, which appears to have unique mathematical properties as well as mystical qualities.

II. Number as a Literary Device

Besides denoting arithmetic values, number serves several other purposes in the Bible, of which we may distinguish three main groups:

(a) Symbolic use of number words.

(b) Numeric structure in which the numbers retain their original symbolic meaning.

(c) Gematric structure.

[3] This is demonstrated in a most intriguing article by Grace Murray Hopper, "The Ungenerated Seven as an Index to Pythagorean Number Theory," American Mathematical Monthly, 43 (1936), 409-413.

Let us deal with these as they apply to the number seven. When visualizing seven, we either see it as an indivisible entity, or we intuitively divide it into two parts, namely three and four. Since this division is characteristic of Bible usage, these two components will be dealt with first.

i. Symbolic Use of Number Words

Since antiquity, three has been associated with the concept of divinity, and in Christian tradition, the very word "Trinity" represents God. Nevertheless, scripture presents a different view of divinity. The idea of divine trinity is certainly foreign to the monotheistic view of the Old Testament. The much abused phrase of traditional liturgy, "in the name of the Father and of the Son and of the Holy Ghost," occurs only once in the New Testament (Matt. 28:19). To the equivalent expression, "the Father, the Word, and the Holy Ghost," are added the words, "and these three are one" (1 John 5:7). Only once more does a similar phrase occur: "the grace of our Lord Jesus Christ, and the love of God, and the communion of the Holy Ghost" (2 Cor. 13:14). Here we are shown not three persons but three aspects of God's personality: grace, love, and communion.[4]

English-speaking theologians refer to the three persons of the Trinity without explaining the original

[4] This threefold divine nature is reflected in man who is shown to be comprised of "spirit and soul and body" (1 Thess. 5:23).

meaning of the word "person." Theological terminology was formulated at a time when Latin was the language of the church, and the Latin word "persona" does not translate "person," but "attribute, quality, personality trait." The biblical "Trinity" is therefore not three persons, but one God with a three-dimensional nature. For example:

— The oneness of God's eternal existence is expressed in temporal terminology thus: "which art and wert and shalt be" (Rev. 16:5 and 11:17).

— His power resides in the threefold name: "Lord God Almighty" (Rev. 4:8, 11:17, 15:3, 16:7, and 21:22).

— His holiness is exalted in the cries of the seraphim: "Holy, holy, holy" (Isa. 6:3).

In none of these examples is the numeral three mentioned expressly, but whenever God's divine power is demonstrated, an abundance of threes is in evidence. For example:

— After a three days' journey into the wilderness — which is mentioned three times (Exod. 3:18, 5:3, and 8:27) — the Red Sea opened for the Israelites but swallowed the Egyptian army.

— Three people were raised from death by the prophet Elisha (1 Kings 17:22, 2 Kings 4:34 and 13:21).

— Christ also raised three people (Luke 7:15 and 8:55, and John 11:44).

— Christ arose from the dead on the third day:

9 times (3x3) Christ talks about rising on the third day.

3 times other speakers mention it.

9 times Christ talks about the 3 days or 3 nights preceding the resurrection.

3 times other writers mention the same matter.

Adding the above numbers, we find this particular association of three and the resurrection exactly 27 times (3x3x3). In fact, all events surrounding the resurrection and all Old Testament types foreshadowing it are so literally interwoven with threes that an impartial Bible reader cannot help but associate three with resurrection.

Three then symbolizes divine attributes, particularly divine power as demonstrated in the resurrection.[5]

Four presents no problem. All writers agree that it symbolizes God's creation: the universe, all living creatures, and created life in general. "When applied to man, it represents the Flesh in an unsaved state."[6] For example:

[5] Almost all writers approach this subject with preconceived ideas. Without presenting scriptural evidence, they hold that three represents God. Bullinger and Kistler present a view identical with mine, however, and they are the only ones who quote sufficient supporting Bible references. See Ethelbert W. Bullinger, Number in Scripture (1894; rpt. Grand Rapids, Mich.: Kregel, 1967), pp. 107-122; and Don Kistler, The Arithmetic of God (King's Mountain, N.C.: n.p., 1967), pp. 22-30.

[6] Kistler, p.30.

— God's creatures are found in four distinct parts of this earth: "in heaven. and on the earth and under the earth and . . . in the sea" (Rev. 5:13).

— The best exemplification of four as the number of creation can probably be found in the vision of the four living creatures which was seen by Ezekiel and also by John in the Apocalypse:
"Every one had four faces and every one had four wings . . . and they had the hands of a man under their wings on their four sides . . . They four had the face of a man, . . .
the face of a lion, . . .
the face of an ox, . . .
and the face of an eagle"
(Ezek. 1:5-10). The number 4 is contained 8 times (2x4) in this passage.

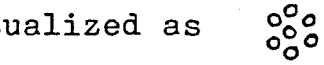
As three represents the eternal, dominant qualities of God, the creator, so four symbolizes the temporal, passive role of his creation. We can find a parallel view in Pythagorean number theory. Since this theory is geometrically oriented, three and four are considered the first real numbers. Three is the first masculine or odd number, the "absolute principle of generation of begotten things."[7] Four is the first feminine or even number.

[7] G. M. Hopper, p.411, quoting Proclus who is quoting Philolaus.

When 3 and 4 are multiplied, the product is 12, a number which symbolizes sonship and divine authority. In this union of the two numbers, three, the divine power, rules over four, the creation. By its very nature, 12 proves to be unstable: it falls apart into its components. In the diagram:

o o o o
o o o o
o o o o

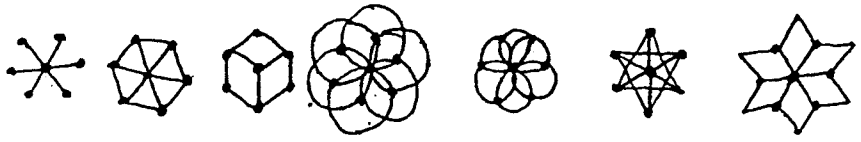
twelve cannot be visualized as an indivisible whole, but either as 4 threes or 3 fours. Either God rules over his creation with an iron rod, or else the creation rebels against his government. In a perfect relationship, we would expect a blending of characteristics of the two elements, a transferring of attributes, whereby the creation (4) takes on the nature of God (3). This relationship was first realized in the New Testament in the person of Jesus Christ, "for the full content of divine nature lives in Christ, in his humanity" (Col. 2:9).[8] In other words, the creature (4) is indwelled by divine nature (3). The relationship is perpetuated by a union of Christ and man: "This mystery . . . is Christ in you" and "every man perfect in Christ Jesus" (Col. 1:27-28). This is not a superimposition of two elements but a harmonious blending, so that through "his divine power . . . ye might be partakers of the divine nature" (2 Pet. 1:3-4).

This union of divine nature (3) and creation (4) is symbolized by the addition of 3 and 4. The prime number 7 is stable by nature. It can easily be visualized as a unity and was regarded as such by Pythagoreans.[9] It is most readily visualized as 

[8] Good News Bible, Today's English Version (1976).

[9] See G. M. Hopper, p. 409.

a constellation which gives rise to only stable, well-balanced, self-contained images, pleasing to the eye, no matter from which angle they are viewed. For example:



If we perceive 7 as the sum of 3 and 4, we regard the union of God and man as a conferring of divine nature on God's creation. There is, however, another explanation for the indwelling of man by God which is portrayed by the symbol:  Here man, whose number is 6, is indwelled by God, whose number is 1, presenting another view of the number 7. Either as the sum of 3+4 or 1+6, the number 7 represents the same perfect relationship, and therefore 7 symbolizes perfection.

In the Hebrew language, no other number could possibly represent the idea of perfection or completeness, for the very word for "seven" derives its meaning from the word for "fulness, completeness, perfection" — or is it the other way around? Johannes Hehn demonstrates "daß für den Hebräer 'Fülle' und 'sieben' eins sind."[10] The same root appears in sibah=seven and in sheba=fulness, the only distinction between them being the position of the diacritical point above the first letter, a distinction which did not even exist in the ancient Hebrew. Bible translators have experienced considerable difficulty in passages employing this root, because they have failed to realize that the Semitic way of thinking barely distinguishes

[10] Johannes Hehn, "Zur Bedeutung der Siebenzahl," Karl-Marti-Festschrift (Gießen: Tölpelmann, 1925), p. 136.

between the two. Seven contains the idea of fulness, and fulness contains the idea of seven. Thus seven is not merely a symbol for perfection;

seven = perfection.

For example:

— For complete cleansing from leprosy, a seven-fold, or complete, washing is required (Lev. 14:7).

— Silver is perfectly pure after being tried seven times, or a perfect number of times (Ps. 12:6).

— Perfect victory over the city of Jericho and her complete annihilation are achieved when seven priests with seven rams' horns circle the city for seven days and seven times on the seventh day (Josh. 6:4).

The perfect union of Christ and man is embodied in the Church, Christ being the head and his followers the body (Col. 1:18). Thus seven becomes the number of the church, and the Apocalypse, the prophecy regarding the church, abounds in sevens. It is the book which explains "the mystery of the seven stars . . . and the seven golden candlesticks. The seven stars are the angels of the seven churches, and the seven candlesticks . . . are the seven churches" (Rev. 1:20). In all, we meet the number seven 57 times in Revelation. Only Leviticus, the book which foreshadows the order of the church, mentions the number more often, namely 64 times. The total number of sevens in the Old as well as the New Testament reflects the idea of perfection in mathematical exactness. Both are multiples of the square of seven:

Number of sevens in the Old Testament: 392= 8x7x7
Number of sevens in the New Testament: 98= 2x7x7
Number of sevens in the entire Bible: 490=10x7x7

ii. Symbolic Numeric Structure

Paul states that "all scripture is given by inspiration of God" for the purpose "that the man of God may be perfect" (2 Tim. 3:16-17). If this is true, we should expect a pattern of perfection to run through the scriptures.

Looking at the overall structure of the Bible, we first of all observe that it falls into two main parts: the Old Testament, written in Hebrew, and the New Testament, written in Greek. In their traditional order, the Old Testament books were divided into three sections, namely:

1. the historical books commencing with the Pentateuch or Law of Moses,
2. the prophetic books commencing with Isaiah,
3. the Hagiographa or Writings commencing with the Psalms.

Jesus refers to this threefold division as: the Law of Moses, the Prophets, and the Psalms (Luke 24:44). According to early church tradition, the New Testament was divided into four sections, namely:

1. the Gospels,
2. the Acts of the Apostles and the Catholic Epistles,
3. the Pauline Epistles,
4. the book of Revelation, called the Apocalypse.

It seems more logical to class all the epistles to-

gether in section 3, but even then we are left with four divisions.

In all, then, we have seven sections which fall into two parts of 3 and 4 respectively. Three, the number of divine nature, characterizes the Old Testament which is the revelation of an invisible God who shows himself by his spirit and by his power. Four, the number of creation and of the flesh, characterizes the New Testament, which reveals God come in the flesh, in the form of a created being. Only by combining the Old and the New Testaments do we arrive at the perfect division into seven.

This same pattern of partition is evident on a smaller scale. For example:

— Of the seven petitions of the Lord's Prayer, the first three regard the benefits to God, while the following four regard man's welfare.

— The seven words which Jesus uttered from the cross, even though they are not recorded in one gospel, adhere to the same order: three words are addressed to God and four to men.

McCormack demonstrates how the structural skeleton of individual books of the Bible is usually based on the number seven and how even a single unified excerpt, such as the Twenty-third Psalm or the Magnificat, falls into two sections of seven sentences each.[11]

[11] Examples of heptadic structure of books of the Bible are found on p. 73, and examples of the pattern of 2 sevens on pp. 17-18 and 24.

For examples of the alternate structure of 1+6=7 see Isa. 11:2, Joel 2:28-29, Ps. 8:6-8; and Bullinger, Number in Scripture, pp. 165-166.

iii. Symbolic Gematric Structure

The use of the perfect seven in the structure of the Bible will become even more evident if we examine the text in the original languages. The Semitic alphabets as well as the Greek possess a peculiarity which is not found in other languages. Each letter has not only a phonetic but also a numeric value. Table 3 lists the letters of the Greek alphabet with their values. Three of the letters, although used in calculations, no longer designated phonetic values by the fifth century B.C. Possibly they were only invented for the purpose of calculation.[12]

TABLE 3: Greek Number-Letter Correspondence

Numeric Value	Letter	Phonetic Value	Numeric Value	Letter	Phonetic Value	Numeric Value	Letter	Phonetic Value
1	α	a	10	ι	i	100	ρ	r
2	β	b	20	κ	k	200	σ	s
3	γ	g	30	λ	l	300	τ	t
4	δ	d	40	μ	m	400	υ	y,ü
5	ε	e	50	ν	n	500	φ	ph
6	ϛ	-	60	ξ	x	600	χ	ch
7	ϛ	z	70	ο	o	700	ψ	ps
8	η	e:	80	π	p	800	ω	o:
9	ϑ	th	90	ϟ	-	900	↑,ϡ	-

12 See Karl Menninger, Number Words and Number Symbols, tr. Paul Broneer (Cambridge, Mass.: M.I.T. Press, 1969), p. 270.

The Hebrew system uses the twenty-two letters of its alphabet in order, followed by the variant final forms of five of its letters to make up the last five hundreds.[13]

Since each Hebrew and Greek letter is interchangeable with a figure, we can arrive at a numeric equivalent for each word, for each phrase, for each paragraph, and even for the entire Bible. To illustrate this equivalence, let us look at the name "David." In Greek, its numeric or gematric equivalent is 21, because

$$\Delta \quad \alpha \quad \beta \quad \iota \quad \delta$$
$$= 4 + 1 + 2 + 10 + 4 = 21 .$$

In Hebrew, its value is 14, because

$$ד \quad ו \quad ד$$
$$= 4 + 6 + 4 = 14 .$$

The name David demonstrates the pattern of perfection for which we are looking in the Bible texts. The numeric equivalent of the Greek as well as the Hebrew version of David is divisible by 7, because both 21 and 14 are multiples of 7.[14] According to the law of probability, the chance of this occurring in a name picked at random is 1 out of 49. Since every seventh number is a multiple of 7, 1 name out of 7 has a chance of being divisible by 7 in one of the

[13] Tables of the Hebrew and Greek number-letter equivalence are found in Menninger, fig. 95, p. 265; and in Jerry Lucas and Del Washburn, Theomatics (New York: Stein and Day, 1977), p. 31.

[14] The alternate spelling of "David", דויד, equals 24, a multiple of 12, which is related to 7. For a discussion of the relationship see p. 12 above.

two languages, and that name would have a 1 out of 7 chance of being divisible by 7 in the other language as well. If, for example, we chose 49 names at random, 7 of them would likely be divisible by 7 in Greek and 7 in Hebrew, but only 1 in both languages.

Since the time of the Gnostics, the study of gematria has occupied the minds of many scholars and led to the discovery of rather intricate mystical correlations between words and names which bear the same numeric value. Even in the sixteenth century, the renowned German mathematician Michael Stifel "valued his 'word calculations,' as he called them, above his work in mathematics."[15] And as late as the eighteenth century, Goethe seems to have been acquainted with cabalism.[16]

Even though in earlier times gematria was widely known and practiced, it seems to have been applied only to individual words and sentences of the Bible text, and then only for the purpose of comparing the numeric patterns. It was not until the turn of this century that the Bible was examined thoroughly for its numeric structure. The Russian-born literary critic, Dr. Ivan Panin, discovered gematric structures which underly the sixty-six books of the canon. The

[15] Menninger, p. 267.

[16] In this context, Franz Dornseiff, Das Alphabet in Mystik und Magie (Leipzig: Teubner, rpt. 1925), p. 104, lists the following works: Louvier, Goethe als Kabbalist, 1892; Chiffre und Kabbala in Goethes Faust, 1897; and Ullrich, Goethes Testament, 1919. From here on, the term "gematria" will refer only to the one-to-one number-letter correspondence shown on pp. 17 and 18. This present usage differs from the classical definition of the term. Cf. Encyclopaedia Judaica (Jerusalem:Keter Publ., 1972), s. v. "gematria".

most amazing of these is the system based on the number 7, which he traces in every book.

His findings have not as yet been validated by independent testing, and it is not the purpose of this dissertation to do so; but his methods will be employed here to illustrate the occurrence of gematria in a Greek text. For the sake of objectivity, a Bible excerpt has been chosen which is not dealt with in any of the discourses on Dr. Panin's work,[17] namely a passage which is readily recognized as a unified section, because it is a poem, a psalm, surrounded by prose narrative. It is the "Magnificat" as found in Luke 1:46-55. All calculations are based on the authoritative critical edition of Westcott and Hort, which was also used by Panin. No alterations whatsoever were made in the given text.

McCormack also demonstrates heptadic structure with this passage,[18] and a number of his ideas have been adopted for this present study, but one basic objection must be voiced here. He starts out with the assumption that in any unified section the letter as well as the word count must be a multiple of 7. Where he is not satisfied with the results, he undertakes the necessary alterations. Such a practice must be rejected as unscholarly. Otherwise his dissertation offers many valuable insights.

Table 4 lists the items which were counted or calculated in the Magnificat.

[17] E.g. K. G. Sabiers, Astounding New Discoveries (Los Angeles: Robertson Publ. Co., 1948); and W. E. Filmer, God Counts (Croydon: Uplift Books, 1947).

[18] McCormack, pp. 17-23.

TABLE 4: Numeric Values of the Greek Magnificat

Item Counted	Value
1. Total gematric value	63 301
2. Number of letters	555
3. Number of consonants	252
4. Number of vowels	303
5. Number of syllables	238
6. Number of words	105
7. Number of sentences[19]	14
8. Number of nouns	35
9. Number of pronouns	14
10. Number of verbs	16
11. Number of participles	3
12. Number of articles	17
13. Number of conjunctions	12
14. Number of prepositions	8
15. Number of Old Testament references[20]	14

To determine which numbers play significant roles in this passage, let us examine the divisibility of these fifteen items. Table 5 gives all factors up to 14 for each value.

[19] See McCormack, pp. 17-18.

[20] According to Westcott and Hort's appendix to The New Testament in the Original Greek (New York: American Book Co., n.d.), pp. 591-592.

TABLE 5: Numeric Values of the Magnificat and Their Factors

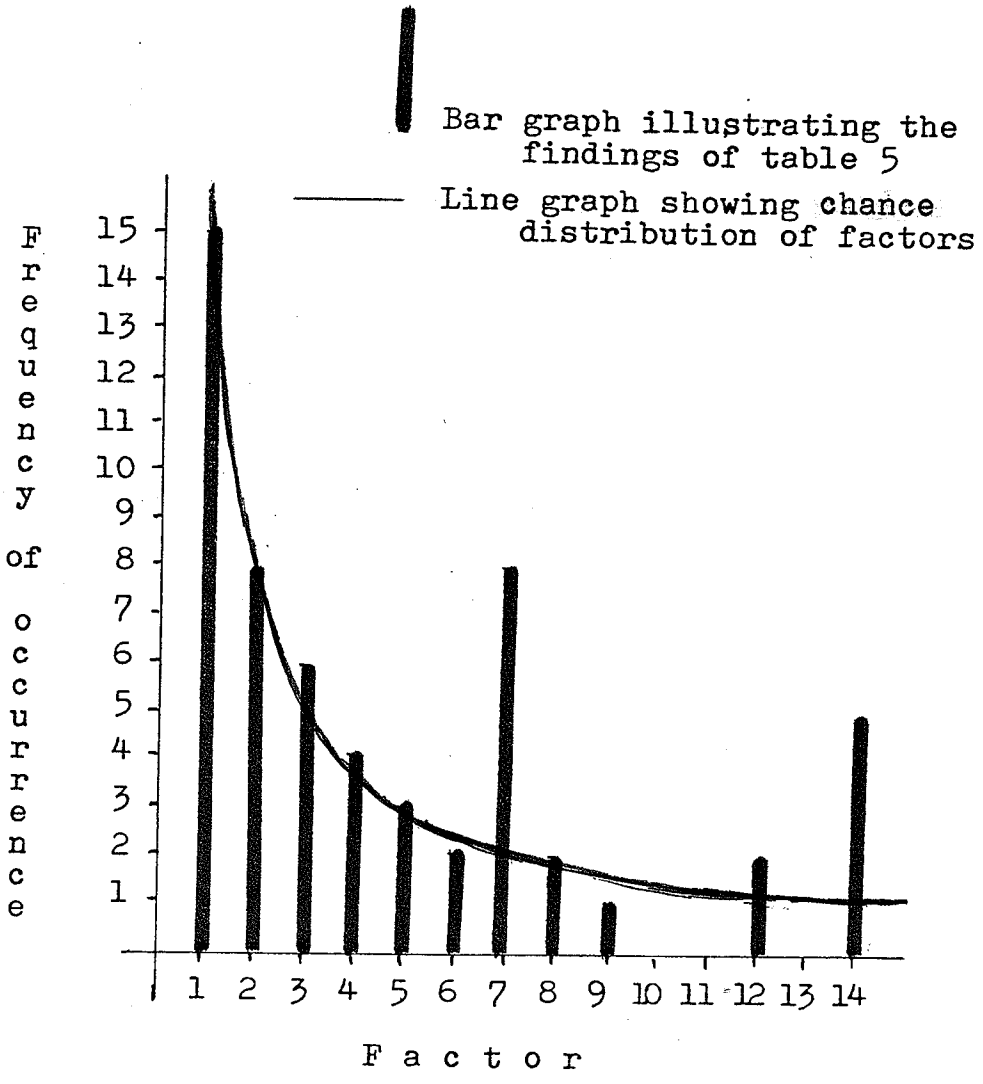
Item	Value	Factors													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	63 301	1						1							
2.	555	1		1		1									
3.	252	1	1	1	1		1	1		1			1		1
4.	303	1		1											
5.	238	1	1					1							1
6.	105	1		1		1		1							
7.	14	1	1					1							1
8.	35	1				1		1							
9.	14	1	1					1							1
10.	16	1	1		1				1						
11.	3	1		1											
12.	17	1													
13.	12	1	1	1	1		1						1		
14.	8	1	1		1				1						
15.	14	1	1					1							1
Occurrence of Factors		15	8	6	4	3	2	8	2	1	—	—	2	—	5

In a set of numbers chosen at random, half of them would be divisible by 2, one third by 3, one quarter by 4, etc. If the numbers in table 5 were chosen in haphazard manner, then approximately:

7 or 8 (i.e. 15÷2) would be divisible by 2,
5 (i.e. 15÷3) would be divisible by 3,
4 (i.e. 15÷4) would be divisible by 4,
3 (i.e. 15÷5) would be divisible by 5, etc.

Graph 2 illustrates the relationship between the actual occurrence of factors in table 5 and the probability of their occurrence.

GRAPH 2: Factor Occurrence in the Greek Magnificat



Graph 2 reveals that only 7 and its multiple 14 show appreciable divergence from the norm. While 7 occurs almost 4 times as often as expected, 14 occurs

closer to 5 times as often.[21] If we examine the text more closely, other countable items suggest themselves. Of those which occur frequently enough to warrant enumeration, the majority again add up to a heptadic number. For example:

— Of the 35 nouns
  (a) masculine singular forms . . 7
  (b) masculine plural forms . . 7
  (c) neuter singular forms . . 7

— Of the 16 verbs
  (a) in the indicative mood . . . 14
  (b) in the aorist tense 14
  (c) ending in -σεν 7

— Of the 17 articles
  (a) in the singular 14
  (b) starting with τ 14

— Of the 303 vowels
  (a) not counting η, which originally was not a vowel 287 = 41x7
  (b) the three letters with the highest counts: — α: 70 =10x7
  — ε: 56 = 8x7
  — ι: 56 = 8x7

— Ironically, the consonant which is equivalent to 7, namely ϛ, is the only letter which is not used at all in this passage.

Dr. Panin found in his studies that the selection of heptadic items varies from book to book and especially from author to author. Only one item seems to

[21] For 14: . . . 5x14÷15=4.7
and for 7: . . . 4x 7÷15=3.7

recur constantly, namely the numeric equivalence of a unified passage which is always divisible by 7. This is probably the most astonishing discovery of his almost lifelong study.

How can we explain such an intricate design? — The chances of arriving at a heptadic numeric equivalent by accident are as follows:

— in 1 passage 1 out of 7,
— in 2 consecutive passages 1 out of 49 (i.e. 7^2),
— in 3 consecutive passages 1 out of 343 (i.e. 7^3),
— in n consecutive passages 1 out of 7^n.

When n represents the thousands of passages contained in the entire Bible, then 7^n would yield an astronomically high figure, and 1 chance out of 7^n (i.e. $1 \div 7^n$) is such an infinitely small number that we have to equate it to nil. The structural gematria can therefore not be explained as a chance occurrence.

This design may be easy enough to verify — to imitate it may not be such a simple task.

> Dr. Daniel B. Turney . . . stated, "I tested the matter for myself thus: I gave numeric values to the English alphabet and tried to prepare a letter which would adhere to the numerics and make every section a multiple of seven and present all the other features of Biblical arithmography without descending to nonsense . . . But after working thereon for days, I could get no satisfaction. Yet this fact is accomplished in every one of thousands of Bible paragraphs without the slightest visible effort.[22]

[22] Filmer, pp. 62-63, quoting from Herald of Gospel Liberty.

One might ask the question whether the ancient writers possessed a skill which we are unable to acquire. If they did, we should be able to find similar designs in other ancient literature, yet studies have shown that no other literature bears this unique trademark, not even the Apocrypha. Some simple structures are displayed in various writings, but in those the result is achieved through artificial means, such as the distortion of the spelling.[23] In the case of the Bible, there seems to be nothing to fall back on by way of explanation but St. Paul's assertion that "all scripture is given by inspiration of God" (2 Tim. 3:16).

In order to preserve the arithmetic design, it is imperative that not a single letter of the text be altered, added, or omitted. We can therefore appreciate why Hebrew scribes have zealously guarded the exactness of biblical transmission. "Eine Thorarolle, in der aus Versehen nur ein Buchstabe zu viel oder zu wenig steht, ist rituell ungültig."[24] Thus Jesus declared that not one jot would pass from the law until it be fulfilled (Matt. 5:18).[25]

Much searching as well as speculating has been done in attempts to trace the number-letter correspondence. Dornseiff believes that "ohne Zweifel" the system is of Greek origin and spread from Miletus to the Semitic world in the eighth century B.C. Yet on

[23] Sigurd Agrell, among others, has studied some of the gematric structures in Greek literature. They are, however, based on a different numeric system which will be discussed in chapter three.

[24] Dornseiff, p. 134.

[25] The "yod" (י) is the smallest Hebrew letter and corresponds to the Greek iota.

the same page he refers to its apparently well accepted use in Assyria in that same century. When King Sargon II built the city of Khorsabad, he had the city walls measure 16 283 cubits to proclaim his name which has the numeric value of 16 283.[26]

Dornseiff's confident belief might have been somewhat shaken, had he known that even the book of Genesis, written a thousand years earlier, bears all the marks of the use of gematria — although its writer may not have been aware of it.

III. The Relationship Between the Three Literary Uses of Number

We have seen that the Bible employs number as a literary device in three distinct ways. These are:

(a) symbolic use of number words,
(b) symbolic numeric structure,
(c) symbolic gematric structure.

Using the number seven as an example, it has been shown that in all three ways the symbolic meaning of a number remains constant. Seven is always treated as the number of completeness or perfection, the number representing the union of creator and creation, the union of God and man. Thus the three uses are interrelated, and as they are all present in the same work, they support each other, giving rise to the highest form of number symbolism, a form which

[26] As researched by F. Peiser and F. Hommel. See Dornseiff, p. 91; and Maurice H. Farbridge, Studies in Biblical and Semitic Symbolism (1923; rpt. New York: KTAV Pub. House, 1970), p. 94.

surpasses symbolism as we now know it. It shows a harmonious interrelation of number and language, a unity which is based on the precept that language and number are simply variant means of expressing ideas and that both may serve to support each other.

CHAPTER TWO

NUMBER-LETTER CORRESPONDENCE: THE GERMANIC WORLD

I. The Milesian Number System

i. In the Eastern Empire

The Milesian number system gained wide acceptance in the eastern Mediterranean world which became the Eastern Roman Empire. No less renowned a mathematician than Archimedes (287-212 B.C.) had demonstrated that it could be a more useful tool than the abacus, because it lent itself to operations far more complex than just addition and subtraction. In the Western Empire, however, people were content to do their calculations on the abacus and to record the results in Roman numerals.

Only those Germanic tribes who came into contact with Hellenistic culture could possibly have been influenced by the Milesian system. These were mainly the Goths. The pursuit of science and philosphy, however, did not rank high on the Goths' list of priorities, and had it not been for the efforts of one man, the Hellenistic number system would not even have made an appearance in the Germanic world. This man was Ulfilas (c. 311-383). He was descended from the Goths

who had been settled in the lower Danube basin, studied in Constantinople, was ordained bishop in 341, and later returned to his own people as a missionary.

When he set out to translate the Bible into the Gothic language, he had no written tradition to fall back on other than the rune alphabet which was a tool of heathen religion and its magic cults. As we shall discuss later, each rune was endowed with potential magical power, and Ulfilas must have realized that a conversion from heathen practice also required a rejection of its magic script. He therefore adapted the Greek alphabet to suit the needs of the Gothic language, borrowing a few formations from the Latin. Along with the alphabet, he also took over the common Greek system of enumeration (See p.17above). He followed the Milesian model quite religiously and even utilized the identical non-phonetic symbols Ϙ and ↑ for 90 and 900. His number-letter correspondence is presented in table 6.[1]

TABLE 6: Gothic Number-Letter Correspondence

Numeric Value	Letter	Phonetic Value	Numeric Value	Letter	Phonetic Value	Numeric Value	Letter	Phonetic Value
1	𐌰	a	10	𐌹,𐌾	i	100	𐍂	r
2	𐌱	b	20	𐌺	k	200	𐍃	s
3	𐌲	g	30	𐌻	l	300	𐍄	t
4	𐌳	d	40	𐌼	m	400	𐍅	v
5	𐌴	e	50	𐌽	n	500	𐍆	f
6	𐌵	q	60	𐌶	j	600	𐍇	x
7	𐌶	z	70	𐌿	u	700	𐍈	hv
8	𐌷	h	80	𐍀	p	800	𐍉	o
9	𐌸	þ	90	Ϙ	-	900	↑	-

The Codex Argenteus, the main manuscript of Ulfilas' Bible translation, shows how the arithmetic figures were distinguished visually from the phonetic letters. When used within the text, a bar is drawn over them, and in addition, they are usually set apart by dots at either side. Thus M has the phonetic value "m", and $\bar{M}$ or $\cdot\bar{M}\cdot$ has the numeric value 40 as also in Greek. When set in the margin to enumerate chapters and verses, numerals are embellished by various ornaments, especially by bars above and below. For example[2]

·KHZ· represents 157, because K=100
H= 50
Z= 7.

Obviously, Ulfilas was well acquainted with the system underlying the biblical numeric structure, and we may ask ourselves whether he was aware of its use in the New Testament. If so, would he have tried to incorporate it in his translation, or would he simply have been content to render the text accurately? If he did use the system at all, we should at least find some evidence of numeric structure in his translation of poetic passages. Let us therefore re-examine the Magnificat in Luke 1:46-55, this time in Gothic translation. The items counted are the same as those counted in the original Greek except for two substitutions which were necessitated by the Germanic syntax.[3]

[1] Details taken from Menninger, figs. 91-93, pp. 260-262. Compare with table 3, p. 17 above.

[2] From Menninger, fig. 93, p.262.

Table 7 lists the fifteen items counted and their factors.[3]

TABLE 7: Numeric Values of the Gothic Magnificat

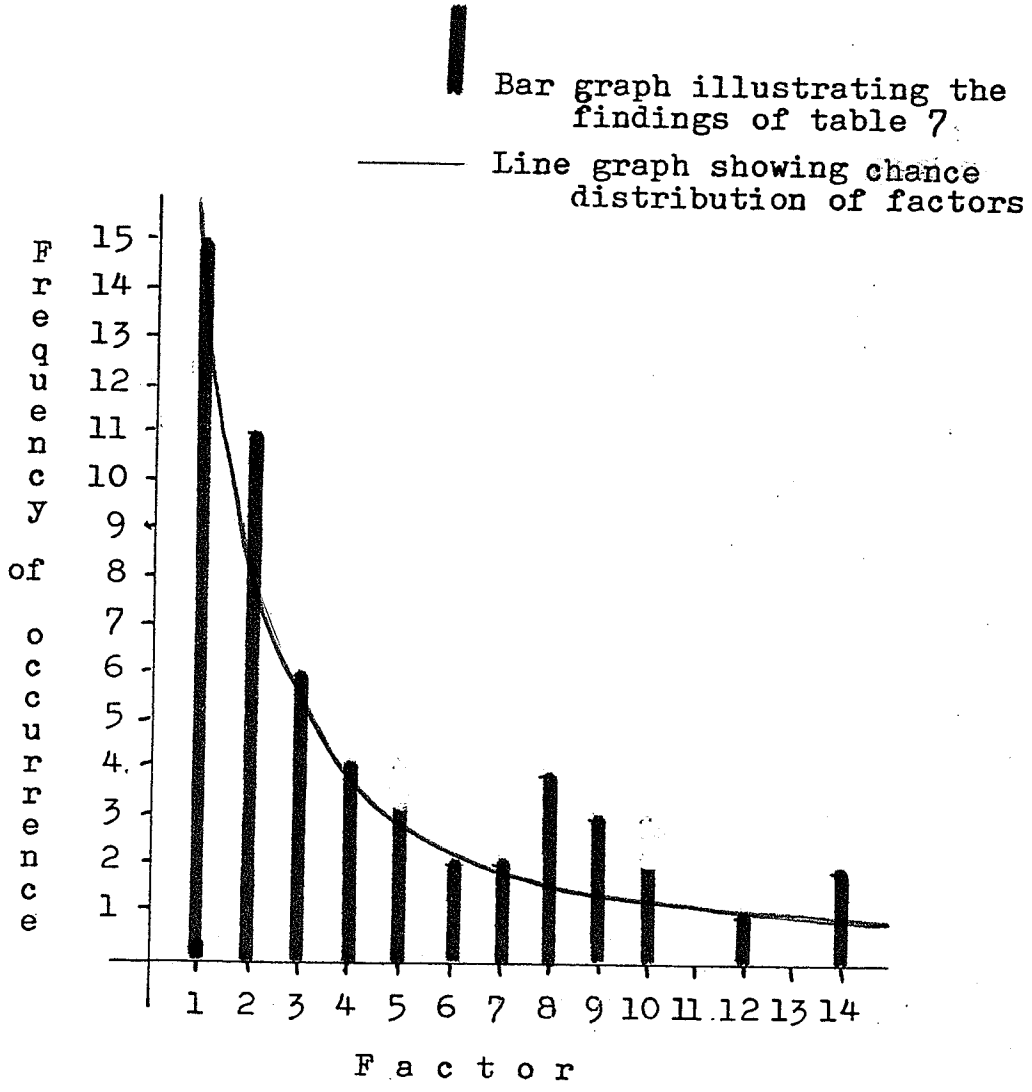
Item Counted	Value	Factors													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gematric Value	33 862	1	1												
2. Letters	526	1	1												
3. Consonants	288	1	1	1	1		1		1	1			1		
4. Vowels	238	1	1					1							1
5. Syllables	200	1	1		1	1			1		1				
6. Words	90	1	1	1		1				1	1				
7. Sentences	6	1	1	1			1								
8. Nouns	27	1		1						1					
9. Pronouns	15	1		1		1									
10. Verbs	19	1													
11. Adjectives	8	1	1		1				1						
12. Conjunctions	3	1		1											
13. Prepositions	8	1	1		1				1						
15. O.T. references	14	1	1					1							1
Total occurrence of factors		15	11	6	4	3	2	2	4	3	2	-	1	-	2

Graph 3 compares the actual factor occurrence with its probability.[4]

[3] Compare with tables 4 and 5, pp. 21-22 above.

[4] Compare with graph 2, p. 23 above.

GRAPH 3: Factor Occurrence in the Gothic Magnificat



The occurrence of factors in graph 3 is compatible with chance distribution so that no particular gematric design can be detected in this passage. We can therefore assume that Ulfilas was only concerned with a faithful rendition of the meaning of the text and that he only adopted the Greek number system as a practical means of enumeration and as a shorthand for the recording of number words.

ii. In the Western Empire

Most of the Germanic tribes were Christianized by the western arm of the church which had its center in Rome. Along with the acceptance of the Catholic faith came the adoption of the Latin Bible, the Latin alphabet, and Roman numerals, in fact, an acceptance of Roman culture, of Roman Weltanschauung, and this certainly differed drastically from that of the Greeks. We can see this difference clearly in the Roman attitude toward mathematics. Cicero expressed it in this way:

> By them [the Greeks] geometry was held in the very highest honor, and none were more illustrious than mathematicians. But we [the Romans] have limited the practice of this art to its usefulness in measurement and calculation.[5]

Since mathematics was only a useful tool to them rather than a science, the Romans did not produce any mathematician-philosophers, neither did they perceive language and number as a harmonious whole, and therefore they felt no need to establish a relationship between their written forms. As a result, no definite number-letter correspondence was ever accepted in any of the Romance or Germanic languages other than Gothic.

Later, in the fifteenth century, when the Indian, or so-called Arabic number system invaded the western world, the strangeness of its symbols finalized the dissociation of numbers and letters in all of Europe except in Greece. Since they had already had a workable number system in operation for 2000 years, the Greeks felt no need to adopt the Indian system. Instead, they simplified their own: They simply dis-

[5] Cicero as cited by Menninger, pp. 138-9.

carded all symbols except the first nine and added a symbol for zero. Their modernized version incorporated all the advantages of the Indian model, including place value, yet it retained the relationship with their own written language.

II. The Thesis System of Numerals

Even before the Milesian system came into use in Greece, another similar one, the so-called thesis system, had gained general acceptance. Following strict alphabetic order, it utilized the twenty-four letters from α to ω to denote the first twenty-four numbers. Thus

$$\alpha = 1, \quad \beta = 2, \quad \gamma = 3, \ldots, \quad \omega = 24 .$$

For higher numbers, place value was introduced. Thus

$$\alpha\alpha = 25, \quad \alpha\beta = 26, \quad \alpha\gamma = 27, \ldots, \quad \alpha\omega = 48 .$$

And $\beta\alpha = 49$, $\beta\beta = 50$, $\beta\gamma = 51$, etc.

The largeness of the base 24 would frustrate any attempt at written calculations other than addition and subtraction, but these numerals served well the purpose of enumeration. The twenty-four songs of the Homeric epics, for example, are numbered accordingly from α to ω. Since these alphabetic numerals have very little practical value for the mathematician and businessman, the Greeks readily adopted the Milesian numerals for everyday use, and the thesis system, being labeled impractical and therefore unscientific, became the sole property of mystics who utilized it for various religious and occult practices. They developed a type of arithmology comparable to the gema-

tria of the Hebrew cabala.

In contrast to the Milesian alphabetic numeral system, the thesis system stood outside the Judaeo-Christian tradition and was associated with heathen practices.[6] With the advance of the Roman army, it spread throughout Europe just before the advent of Christianity.

III. The Number Values of the Runes

By the time the thesis system reached northern Europe, the twenty-four letters of the Greek alphabet had been exchanged for the twenty-four runes of the Germanic futhark, but the same number system remained.

i. Futhark Rune Values

Several monuments bear a complete list of runes. Since the first six runes spell out the word "futhark," the alphabet is generally referred to by that term. Several of these futharks are divided into three sections of eight runes each, these sections being called ættir. Table 8 lists the ættir of the Vadstena bracteate with the numeric and phonetic values of each rune.

[6] Peter Friesenhahn's study, Hellenistische Wortzahlenmystik im Neuen Testament (Amsterdam: Gruner, 1970), is based on the thesis system. It does not, however, present a unified system, but merely presents examples of symbols, names, and phrases which have counterparts in non-canonic writings.

TABLE 8: Futhark Rune Values

Numeric Value	Rune	Phonetic Value	Numeric Value	Rune	Phonetic Value	Numeric Value	Rune	Phonetic Value
1	ᚠ	f	9	ᚺ	h	17	ᛏ	t
2	ᚢ	u	10	ᚾ	n	18	ᛒ	b
3	ᚦ	ᚦ=th	11	ᛁ	i	19	ᛖ	e
4	ᚨ	a	12	ᛃ	j	20	ᛗ	m
5	ᚱ	r	13	ᛇ	z→ï	21	ᛚ	l
6	ᚲ	k	14	ᛈ	p	22	ᛜ	ng
7	ᚷ	g	15	ᛉ	R	23	ᛟ	o
8	ᚹ	v	16	ᛊ	s	24	ᛞ	d

Old Norse literature has much to say about the significance of runes. In the Eddic lay "Sigrdrífomál" different runes are credited with different powers and therefore serve specific purposes.[6] For example:

— Victory runes (ᛏ) should be carved on the hilt of your sword.

Stanza 6:

Sigrúnar þú scalt kunna, ef þú vilt sigr hafa,
oc rísta á hialti hiǫrs,
sumar á véttrimom, sumar á valbǫstom,
oc nefna tysvar Týr.

— Birth runes (ᛒ) should be written on your hands when you assist a woman in labor.

[6] Gustav Neckel and Hans Kuhn, eds. Edda, 4th ed. (Heidelberg: Winter, 1962), pp. 189-197. The meanings of these runes are discussed pp. 57 ff. Three of the stanzas of "Sigrdrífomál" are quoted on pp. 37 and 38.

Stanza 9:

Biargrúnar scaltu kunna, ef þú biarga vilt
oc leysa kind frá kǫnom;
á lófa ær scal rísta oc of liðo spenna
oc biðia á dísir duga.

— Surf runes (ᛚ), when carved on the prow of your ship and on the oars, will guide you safely to the harbor even through the fiercest storm.

Stanza 10:

Brimrúnar scaltu kunna, ef þú vilt borgit hafa
á sundi seglmǫrom;
á stafni scal rísta oc á stiórnar blaði
oc leggia eld í ár;
era svá brattr breki né svá blár unnir,
þó kømztu heill af hafi.

Egils Saga recounts an example where the wrong inscription is carved on a piece of whale bone and placed under a sick woman's bed.[7] Her condition worsens until Egil skillfully scrapes off the curse, burns the bone, and replaces it with a health-bringing rune charm. Egil explains the danger of carving runes without possessing the necessary skill:

Skalat maðr rúnar rísta,
nema ráða vel kunni,
þat verðr mǫrgum manni,
es of myrkvan staf villisk;
sák á telgðu talkni
tíu launstafi ristna,
þat hefr lauka lindi
langs ofrtrega fengit.

[7] S. Nordal, ed., Egils Saga Skalla Grímssonar, (Reykjavík: Islensk Fornrit, 1933), ch. 72, pp.299-230.

With the runes, as with Hebrew and Greek writing, we can substitute the number values for the letters and arrive at a numeric equivalent for every inscription. If an inscription was endowed with a specific magical power, then possibly that power may also have resided in its numeric equivalent. If this was actually the case, then certain number values should recur on articles used for the same purpose. Swords, for example, should show values symbolic of victory, and spears might be dispatched with values carrying a deadly curse. Amulets, on the other hand, should carry symbols of health, wealth, or fertility — possibly all three.

To probe into this subject adequately, an exhaustive study of all runic inscriptions would be required. Just looking at a few striking examples may be an interesting pastime, but does not establish proof. In examining the extant inscriptions, one very quickly realizes that those carved on wood or bone have been weathered and cannot be identified with absolute certainty. Those scratched on metal have fared a little better. Those carved on stone are fairly legible depending on the hardness of the rock, and I shall deal with the gravestones later on in this chapter.

By far the best preserved inscriptions are found on bracteates, which are coin-shaped gold pieces stamped with an inscription and an illustration. For the purpose of the present discussion, I have studied all the bracteates of which clear photographs are available. My main source has been the second volume of Wolfgang Krause, Die Runeninschriften im älteren Futhark.[8] Additional photographs of the same artifacts have been examined in Hauck, Goldbrakteaten aus

Sievern, and in Oxenstierna, Die Nordgermanen.[9]

Before the inscriptions can be analyzed, certain ground rules must be established:

(a) Each rune must be accepted as it appears regardless of the resultant spelling, because the change in even one symbol will result in an entirely different arithmetic value. If we are to investigate objectively whether a rune master had a certain sum in mind when he composed an inscription, we must give him credit for knowing his craft.

(b) If divisions occur in an inscription, we must presume that they were placed there intentionally. These divisions form groups of runes which are not necessarily equivalent to words or phrases. At times the grouping seems contrary to our logic which is accustomed to word separation; it must therefore have served a different purpose. Group divisions are achieved by various means, namely:

[8] Wolfgang Krause and Herbert Jankuhn, Die Runeninschriften im älteren Futhark (Göttingen: Vandenhoeck und Ruprecht, 1966).

The transcriptions in the first volume proved to be of very little help, because Krause is not so much concerned with a faithful transcription as with a meaningful interpretation of the written message. One striking example is his purposeful misreading of the Lindkær bracteate #4a (p. 17 and table 3). Even though this is one of the best preserved bracteates with very clear, readable type, he fails to identify half of the 22 runes, simply because they do not suit his interpretation.

[9] Karl Hauck, Goldbrakteaten aus Sievern (München: Wilhelm Fink, 1970); and Dr. Eric Graf Oxenstierna, Die Nordgermanen (Stuttgart: Gustav Kilpper, 1957).

— by allowing a part of the picture to cut into the inscription,

— by placing non-runic symbols between runes,

— by interspacing runes with dots.

The numeric equivalent for each group of runes may be presumed to be of significance. Also, since varying numbers of dots are frequently used within the same inscription, we must consider the number of dots to have numerical significance.

With these considerations in mind, all legible bracteates have been analyzed, and the numeric equivalences have been recorded in the following manner:

(a) In column A: The total numeric value of all runes occurring on a bracteate.

(b) In column B: The above total plus the number of dots which are used as dividers.

(c) In column C: The value of each individual section or subsection of runes.

Each value in table 9 has been tested for divisibility and the factors for each bracteate are listed in table 10. If a factor occurs more than once, the number of times is indicated. In correspondence with the 24 rune values, all factors up to 24 are listed. The number of prime numbers and prime factors above 24 are given under Prime N. and F. The result is displayed in graph 4.[10] Numbers which are perfect squares are considered at least doubly powerful and the factor is therefore counted twice, e.g. 5 would be counted twice as a factor of 25, but only once for 50, because 50 is not a perfect square.

[10] The method was explained on p. 22 above.

TABLE 9: Gematric Values of Bracteate Inscriptions According to the Futhark

No.	Bracteate	Values		
		of entire inscription		of individual sections and subsections[11]
		without dots	with dots	
		A	B	C
2	Vadstena	366	372	66, 36, 100, 164
4a	Lindkær	207		
4b	Over-Hornbæk III	276		
103a	Slangerup	34	36	27, 7, 9[a]
103b	Klaggeröd	27		
104	Darum V	94		67, 27
105	Skodborg	309		
107	Schonen IV	68		
108	Ars II	52		
109	Skrydstrup	79		52, 27
110	Börringe	133	135	56, 25, 52, 81, 83[b]
111	Dänemark I	46		
112	Seeland I	46		
113	Allesø	174	176	47, 55, 102, 104, 30, 42, 72[c]
114	Hesselager	113		52, 23, 17, 19, 2
115	Darum IV	222		105, 56, 61, 117[d]
116	Höjstrup	30		
117	Darum I (3)[f]	104		74, 30
118	Skonager III	112		67, 45
119	Fünen I	192		53, 110, 29
121	Lellinge	86		
122	Faxe (3)[g]	201		67, 67, 67
123	Ølst	57		27, 30

cont. on next page

TABLE 9 continued

124	Norwegen	62		
125	Tjurkö II	37		
126	Lekkende	23		
127	Seeland II	262	271	106, 45, 60, 51, 211[e]
128a	Väsby	278		
128b	Äskatorp	278		
129	Over-Hornbæk II	330		
130	Trollhättan	129		73, 56
131	Åsum	164	168	
132	Femø	96		
133	Nebenstedt I	137		82, 55
134	Sievern	52		
137	Körlin	45		

[11] Notes for table 9:
Where the sections of an inscription are broken down into subsections, the total of column C is greater than that of column A or B, because both the sections and their subsections are listed. Numbers in column C, which do not appear in the breakdown below, represent sections not divided into subsections. The breakdowns:

[a] 7 + 2 dots = 9

[b] 56 + 2 dots + 25 = 81 + 2 dots = 83

[c] 47 + 2 dots + 55 = 102 + 2 dots = 104
and 30 + 42 = 72

[d] 56 + 61 = 117

[e] 106 + 45 + 60 = 211

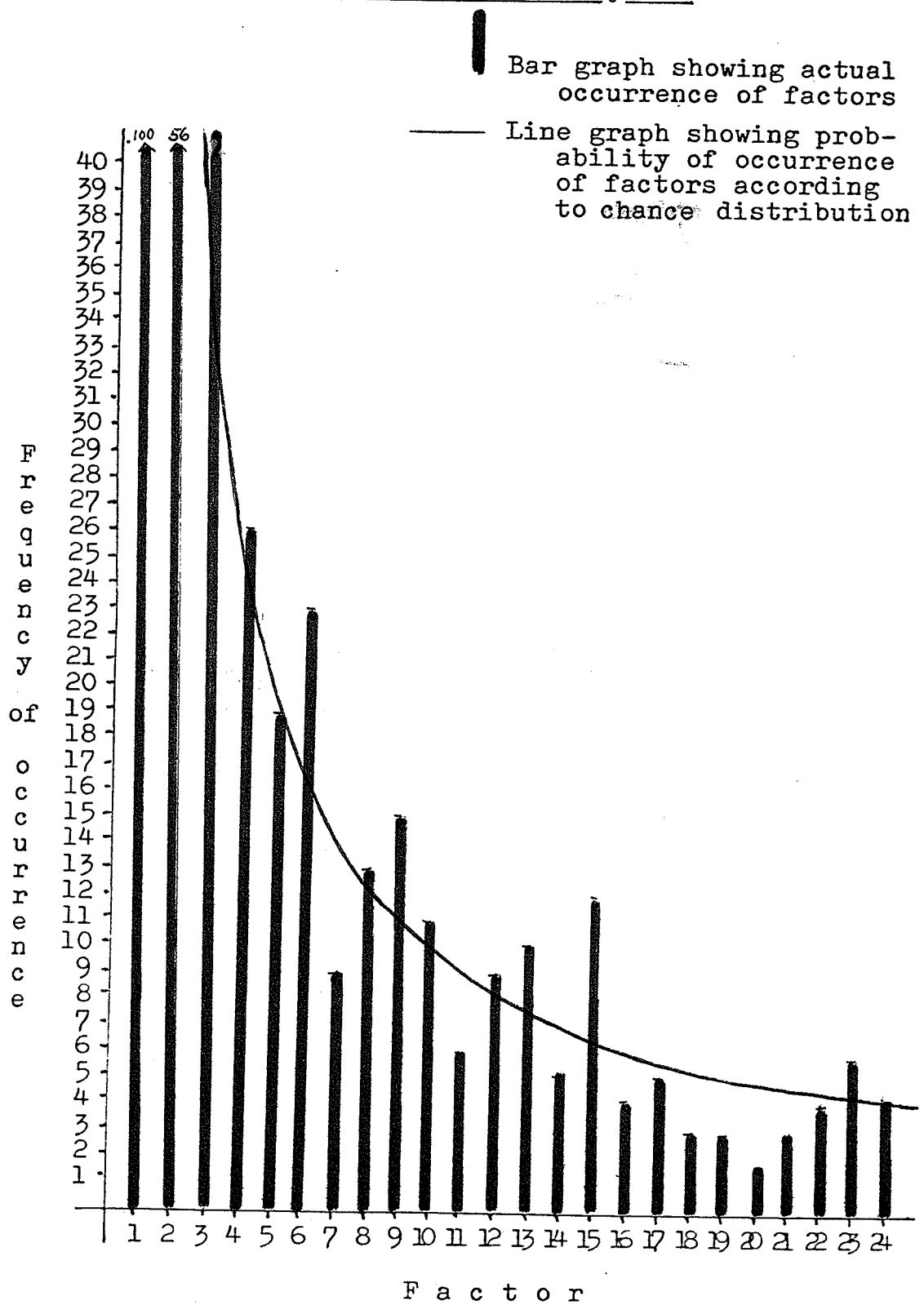
[f] Darum I #117 is preserved in triplicate and is therefore counted three times.

[g] Faxe #112 is an amulet fashioned out of three identical bracteates. The total is the sum of all three inscriptions.

TABLE 10: Factors Obtained from the Values in Table 9

No.	Factor																								Prime	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	N.	F.
2	6	6	4	4	1	5			1	2	1	2						1		1		1				3
4a	1		1						1														1			
4b	1	1	1	1		1						1											1			
103a	5	2	4	1		2	1		3			1					1	1								
103b	1		1						1																	
104	3	1	1						1																1	1
105	1		1																							1
107	1	1		1													1									
108	1	1		1									1													
109	3	1	1	1					1				1												1	
110	7	2	2	2	3		2	1	3				1	1	1				1						1	
111	1	1																					1			
112	1	1																					1			
113	9	7	5	3	2	5	1	3	1	1	2	1	1	1	1	1	1	1			1	1		1	1	1
114	5	1		1									1				1		1				1		1	
115	5	3	2	1	1		2	1						1	1						1				1	2
116	1	1	1		1	1				1					1											
117	9	9	3	3	3	3		3		3			3		3											3
118	3	1	1	1	1		1	1	1					1	1	1									1	
119	4	2	1	1	1	1		1		1	1	1				1						1		1	2	
121	1	1																								1
122	4		1																						3	1
123	3	1	3		1	1			1	1					1			1								
124	1	1																								1
125	1																								1	
126	1																					1				
127	7	3	3	1	2	1			1	1		1	1		2		1			1					2	3
128a	1	1																								1
128b	1	1																								1
129	1	1	1		1	1				1	1										1					
130	3	1	1	1			1	1					1												1	1
131	2	1	1	1		1	1	1				1								1			1			1
132	1	1	1	1		1		1				1			1								1			
133	3	1			1					1																2
134	1	1		1								1														
d37	1	1	1		1									1												
Total	100	56	41	26	19	23	9	13	15	11	6	9	10	5	12	4	5	3	3	2	3	4	6	4	16	23

GRAPH 4: Divisibility of Bracteate Values According to the Futhark System



Graph 4 displays an occurrence of factors which certainly lies within the limits of chance distribution. No factor shows appreciable divergence from the norm. The seeming lack of gematric form, however, does not prove that none exists. We may have to search deeper to find the key. The application of magic formulae was meant to be understood only by an initiated few who guarded their secret knowledge zealously and passed it on only to those worthy of such a grave responsibility. According to Eddic literature, runes are divine gifts taught to select men by supernatural beings. In "Hávamál," Odin himself testifies to the wealth of wisdom and magic power which he gained when he learned the use of runes, and he advocates the acquisition of the skill, when he declares:[12]

Við hleifi mic sældo né við hornigi,
nýsta ec niðr;
nam ec upp rúnar, œpandi nam,
fell ec aptr þaðan.

Þá nam ec frœvaz oc froðr vera
oc vaxa oc vel hafaz;
orð mer af orði orðz leitaði,
verc mér af verki vercs leitaði.

Rúnar munt þu finna oc raðna stafi,
miǫc stóra stafi,
miǫc stinna stafi,
er fáði fimbulþulr
oc gorðo ginregin
oc reist hropt rǫgna.

[12] Neckel/Kuhn, Edda, pp. 17-44, "Hávamál." Stanzas 139, 141, and 142 are quoted here.

In "Sigrdrífumál," a valkyrie instructs Sigurd in the correct application of runes.[13] It seems then that the learning of rune skills was a sacred as well as difficult matter. In the light of this consideration, we should perhaps expect any possible numeric symbolism to be even more carefully hidden than we have thought. Possibly the so-called futhark does not even represent the original rune alphabet but a magic formula which was derived from the alphabet.

ii. Alphabetic Rune Values

The only significant research toward finding the key to the rune values was presented by the Swedish scholar Sigurd Agrell in 1927 in Runornas talmystik och dess antika förebild.[14] He concludes that the rune alphabet started not with ᚠ (f), as had been taken for granted, but with the second letter of the futhark, the ᚢ (u). The ᚠ was originally the last letter. Table 11 presents the number-rune equivalence which Agrell suggests.[15]

[13] Excerpts from her instructions were cited on pp. 37-38 above.

[14] Skrifter, Vetenskaps-Societeten (Lund: Gleerup, 1927).

[15] Compare with table 8, p. 37 above.

TABLE 11: Alphabetic Rune Values

Numeric Value	Rune	Phonetic Value	Numeric Value	Rune	Phonetic Value	Numeric Value	Rune	Phonetic Value
1	ᚢ	u	9	ᚾ	n	17	ᛒ	b
2	ᚦ	þ=th	10	ᛁ	i	18	ᛖ	e
3	ᚨ	a	11	ᛃ	j	19	ᛗ	m
4	ᚱ	r	12	ᛈ	p	20	ᛚ	l
5	ᚲ	k	13	ᛇ	z→ï	21	ᛜ	ng
6	ᚷ	g	14	ᛉ	R	22	ᛟ	o
7	ᚹ	v	15	ᛊ	s	23	ᛞ	d
8	ᚺ	h	16	ᛏ	t	24	ᚠ	f

Before we consider the evidence for this shifting of values, we should first examine whether it holds the key to a symbolic structure. The bracteates, which were tested previously, were worn as amulets and must have been endowed with special charms. If we cannot find numerical magic on them, we need not look for it on any other runic artifacts.

If we then reassign the new equivalents to the bracteate inscriptions of table 9, we arrive at a different set of gematric values, which is recorded in table 12. These values are then again tested for divisibility, and the results are displayed in table 10 and graph 5.[16]

[16] The procedure was explained on p. 41 above. Tables 12 and 13 should be compared with tables 9 and 10, and graph 5 with graph 4.

TABLE 12: Gematric Values of Bracteate Inscriptions According to the Alphabet

No.	Bracteate	Values		
		of entire inscription		of individual sections and subsections
		without dots	with dots	
		A	B	C[17]
2	Vadstena	358	364	58, 52, 92, 156
4a	Lindkær	208		
4b	Over-Hornbæk III	253		
103a	Slangerup	30	32	24, 6, 8[a]
103b	Klaggeröd	24		
104	Darum V	85		61, 24
105	Skodborg	272		
107	Schonen IV	64		
108	Ars II	46		
109	Skrydstrup	70		46, 24
110	Börringe	119	121	50, 23, 46, 73, 75[b]
111	Dänemark I	42		
112	Seeland I	42		
113	Allesø	159	161	43, 51, 94, 96, 27, 38, 65[c]
114	Hesselager	104		47, 22, 16, 18, 1
115	Darum IV	209		99, 53, 57, 110[d]
116	Höjstrup	26		
117	Darum I (3)[f]	117		91, 26
118	Skonagar III	102		60, 42
119	Fünen I	169		48, 95, 26
121	Lellinge	78		
122	Faxe (3)[g]	255	264	92, 63, 52, 48, 207
123	Ølst	41		24, 17

continued on next page

TABLE 12 continued

124	Norwegen	56		
125	Tjurkö	34		
126	Lekkende	21		
127	Seeland II	255	264	92, 63, 52, 48, 207[e]
128a	Väsby	276		
128b	Äskatorp	276		
129	Over-Hornbæk II	299		
130	Trollhättan	119		68, 51
131	Åsum	154	156	
132	Femo	96		
133	Nebenstedt I	125		74, 51
134	Sievern	46		
137	Körlin	39		

[17] Notes for table 12: Cf. p. 43, notes for table 9. The breakdowns here are as follows:

[a] 6 + 2 dots = 8

[b] 50 + 2 dots + 23 = 73 + 2 dots = 75

[c] 43 + 2 dots + 51 = 94 + 2 dots = 96
and 27 + 38 = 65

[d] 53 + 57 = 110

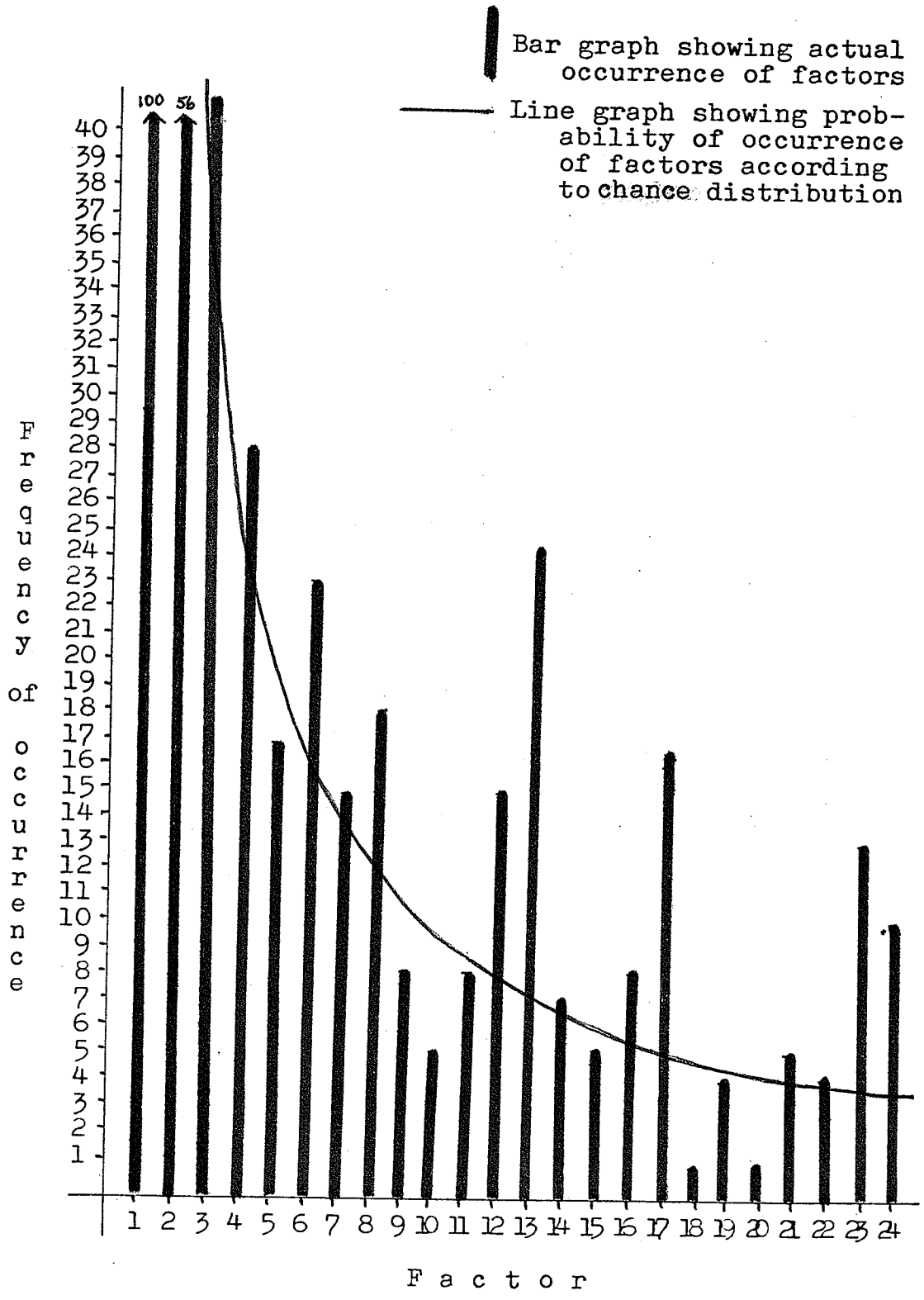
[e] 92 + 63 + 52 = 207 Cf. pp. 73-74 below.

[f] and [g] Cf. p. 43, notes f and g.

TABLE 13: Factors Obtained from the Values in Table 12

No.	Factor																								Prime	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	N.	F.
2	6	6	1	4		1	1					1	3	1									1			2
4a	1	1		1				1					1			1										
4b	1										1												1			
103a	5	5	3	3	1	3		3		1		1			1	1								1		
103b	1	1	1	1		1		1				1												1		
104	3	1	1	1	1	1		1				1					1							1	1	
105	1	1		1				1								1	1									
107	1	1		1				2								1										
108	1	1																					1			
109	3	3	1	1	1	1	1	1		1		1		1									1	1		
110	7	2	1		2		1			1	2						1						2		1	
111	1	1	1			1	1							1							1					
112	1	1	1			1	1							1							1					
113	9	3	4	1	1	1	1	1	1			1	1			1	1		1				1	1	1	2
114	5	3	1	1		1		1	2		1		1					1			1			1		
115	5	1	2		1				1	1	2								1		1			1		
116	1	1											1													
117	9	3	3				3		3				9													
118	3	3	3	1	1	3	1			1		1		1	1		1			1	1					
119	4	2	1	1	1	1		1				1	3			1			1					1		
121	1	1	1			1							1													
122	4		1		4										1		4									
123	3	1	1	1		1		1				1					1							1	1	
124	1	1		1			1	1						1												
125	1	1															1									
126	1		1				1													1						
127	7	4	6	4	1	2	1	2	2		1	2	1		1	1	1			1	1	2	2			
128a	1	1	1	1		1						1										1				
128b	1	1	1	1		1						1										1				
129	1												1									1				
130	3	1	1	1			1									3										
131	2	2	1	1		1	1			1	1	1	1								1					
132	1	1	1	1		1		1			1				1								1			
133	3	1	1		3											1										1
134	1	1																				1				
137	1		1									1														
Total	100	56	41	28	17	23	15	18	8	5	8	15	24	7	5	8	16	1	4	1	5	4	13	10	6	5

GRAPH 5: Divisibility of Bracteate Values According to the Alphabet System



Graph 5 does not conform to chance distribution but points to intentional design. We do not see a marked prominence of a single number as we did in the Bible example, but instead, several numbers stand out.[18] Both 13 and 23 occur about three times as often as expected, and 17 and 24 between two and three times as often.[19] When we apply Agrell's equivalence table, 13 and 23 show a prevalence which cannot be credited to chance.[20] We must therefore consider the possibility that they were woven into the inscriptions intentionally. These numbers may have possessed powers which were to benefit the bearer of the amulet. Since this runic alphabet, in fact, seems to hold the key to the symbolic interpretation of the bracteates,

[18] For the Bible example see graph 2, p. 23 above.

[19] Divisibility was tested for exactly 100 numbers. One number in 13 is divisible by 13, i.e. 1÷13. For the 100 numbers tested, 100 times as many should be divisible, namely 100÷13=7.69 . The actual 24 thirteens are . . 24x13÷100=3.12 times the norm.
Likewise for 23 . . . 13x23÷100=2.99 times,
for 17 . . . 16x17÷100=2.72 times,
and for 24 . . . 10x24÷100=2.40 times.

[20] It may be noted here that Heinz Klingenberg has also studied the numeric values of various runic inscriptions. He, however, uses the futhark equivalences of table 8, p.37, except that he reverses the values of ᛉ and ᛞ . His work appears under the title Runenschrift — Schriftdenken — Runeninschriften (Heidelberg: Winter, 1973). It is reviewed by Michael Barnes in Medieval Scandinavia, 7 (1976), pp. 246-254. An evaluation cannot be given at this time, because at the time of writing I have had access only to the review. By applying his method to the bracteate inscriptions, however, the resulting values were found to conform to normal distribution of numbers.

we must next examine the evidence for the shift in numeric values from the formerly accepted pattern. For this purpose, a look at the historical background is imperative.

IV. The Origin of the Rune Alphabet

If we know little about the originator of the Gothic alphabet, we know absolutely nothing about the man who adapted the alphabet for the use of the Germanic tribes more than 200 years before Ulfilas. Scholars have speculated that he was a clerk in the employ of the Roman army. He must have been familiar with Latin, because some of the runes resemble Latin script, but most certainly he was well versed in the Greek language, because the great majority of runes can be traced back to Greek script, either printed or cursive.[21]

He not only knew Greek script, but he was certainly initiated into the rites of Greek mysticism. In the second century A.D., the Greeks were already using the Milesian number system for calculations, and the thesis system, which is evident in the runes, was propagated only by mystic cults.

That the runes did serve a mystic purpose is well documented. In "Hávamál", for example, Odin's self-sacrifice is mystically linked with his discovery of runes.[22] The very word "rune" embodies

[21] Shown by Otto von Friesen in Reallexikon der Germanischen Altertumskunde (1918-19), vol.4, pp. 9-12.

[22] Quoted in part on p. 46 above.

> the idea of mystery and secrecy. Gothic runa glosses Greek μυστήριον in reference to the divine mysteries, and a related Gothic garuni means "consultation, counsel."[23]

Even to this day the German verb "raunen" does not simply mean "to whisper," but evokes the idea of the imparting of mystical knowledge as, for example, by a gypsy fortune teller or by the wind as it rustles through the leaves.

During the second century A.D., when the rune alphabet is thought to have become established, the prevalent mystery religion in the Roman army was Mithraism, a cult which originated in Persia and which restricted membership to men. Its hero-divinity, Mithra, had devoted his life to the service of mankind, and since his ascension he aided those who were fighting the forces of evil; thus, understandably, his worship brought special inspiration to soldiers. Mithraism became so popular that the emperor Commodus (180-192 A.D.) declared it an imperial cult.

A Germanic soldier in the imperial army would have found much similarity between the new religion and the ideals with which he had been raised. "Hier wurden Kraft und Treue verehrt, und viele der Göttergestalten waren denjenigen des nordischen Kultus ähnlich."[24] In examining the Germanic alphabet, it is therefore not surprising to find a blending

[23] R. I. Page, An Introduction to English Runes (London: Methuen, 1973), p. 107. Page also cites OHG runa and giruni, OE runian, OS runon, OHG runen, ON rúnar, OIr run, and Middle Welsh rhin.

[24] Sigurd Agrell, Zur Frage nach dem Ursprung der Runennamen (Lund: Berlinska Boktrycheriet, 1928), p.9.

of Nordic and Eastern thought reflected in the meaning of individual runes.

Like the letters of the Semitic alphabet, each rune took its name from an object which began with the same sound. We are still in the habit, when spelling words orally, of using names for letters, e.g. G for George and S for Sam, but the runic names were not chosen haphazardly, for each name represents an object or a deity of significance in religious rites. Some of these names have been preserved in modified form in five manuscripts of later dates.[25] These are:

— The Abecedarium Nordmannicum, a runic poem in an early ninth century manuscript usually credited to Hrabanus Maurus.

— An Old English poem of the ninth century

— A Norwegian poem of the twelfth or thirteenth century.

— An Icelandic poem of the fifteenth century.

— The Salzburg codex 140, now called Vienna codex 795, which lists the Gothic alphabet with the letter names. These are undoubtedly borrowed from the runes. If its association with Alcuin is correct, then it would have originated in the eighth century.

[25] For a comparative table of the rune names see Ralph W. V. Elliott, Runes (Manchester: Univ. Press, 1959), pp. 48-49; and Klaus Düwel, Runenkunde, Sammlung Metzler (Stuttgart: Metzler, 1968), pp. 107-108.

The first rune — ᚢ, ᚢ, ᚢ — is called ūr in all four rune poems and uraz in Gothic, and refers to the aurochs which roamed the woodlands of northern Europe. This animal was the symbol of untamed strength, and its blood renewed those who partook of it in sacrificial ceremony. The hunting of the aurochs was one of the prerequisites for the initiation into manhood. In Mithraism, the slaying of the bull represented the central act of worship, and the blood was allowed to fall on the initiate. The bull was considered the first created being, and when it was slain by Mithra, all the plants of the earth grew from his body. From his seed sprang all species of animals. Thus the bull became the origin, the first cause of life. This explains why the letter representing the bull was placed first in the alphabets from which the runes have evolved. In the Egyptian it was the hieroglyph 𓃾, in the Semitic the aleph (𐤀), and in the Greek the alpha (Α, α) to which the rune ᚨ bears unmistakable resemblance.

The second rune — ᚦ, ᚦ — is called þurs in the Norwegian and Icelandic poems and thuris in the Abecedarium. The word means giant or demon and represents supernatural forces harmful to man. Being the number of separation and division,[26] two has represented the principle of evil in all traditions, and to this day the exclamation "deuce" refers to bad luck or the devil.

The third rune — ᚬ — ǫ́s or ǫ́ss in all the rune poems, aza in Gothic, and ǫ́ss in Old Icelandic means god or deity universally, except in the monotheistic religions, and even the Bible presents God as having

[26] See p. 1 above.

a threefold nature.[27]

The fourth rune —ᚱ, ᚱ— called rad, rat, ræið, reið, and reda means wagon, chariot. The Mithraic sungod's quadriga was drawn by four horses which symbolized the four seasons.[28] Four was identified with the four elements as well as with the four seasons, and both concepts are contained in the Semitic idea of creation, which is also symbolized by four.[29] The Greek letter delta (Δ, δ) has the same connotation and also stands in fourth place.

Similar explanations for the positions of the other runes can be found in Agrell's works.[30] For our purpose we need only examine those runes whose symbolic meanings play a major role in runic magic.

The seventh rune —ᚹ, ᚹ— is called wyn in Old English and uuinne in Gothic. It is the German Wonne, the ultimate joy of the elect to which, according to the Eastern mystery religions, the soul attains only after traversing the seven spheres of the planets. The Mithraic aspirant also had to pass seven steps of initiation. This symbol for seven delimits the Semitic meaning of fulness to "fulness of joy" to which Psalm 16:11 refers.

The tenth rune — ᛁ — called īs, ís, īss, iiz, is the death rune, because ice is a symbol for death. In

[27] See pp. 8-10 above.

[28] See Agrell, Zur Frage, p. 12.

[29] See pp. 10-11 above.

[30] Especially in Zur Frage . . . ; and in "Die spätantike Alphabetmystik und die Runenreihe," Kungl. Humanistika Vetenskapssamfundet, 6 (1932), pp. 155-210.

Greek mythology, the tenth river coming from the Okeanos is the subterranean Styx, the river of death.

The thirteenth rune — ᛇ — is called eoh, yew in the Old English. It retains its position in 13th place even in the Vadstena futhark by changing places with the 12th rune, ᛈ.[31] Agrell deals only with its position in the alphabet and does not mention its symbolic meaning, which must have been of considerable importance. Both the yew tree and the number thirteen have to this day retained magical connotation, although 13 has fallen into disrepute. To warrant its frequent appearance on the bracteates, it must originally have had beneficial meaning. The yew is an evergreen of almost indestructible toughness and has therefore become a symbol of longevity. The Eddic poem "Fjǫlsvinnsmál" tells us that no one knows the roots of Mímameiðr, that neither fire nor axe can destroy it, and that its fruit, when thrown in the fire, drives out sickness.[32] De Vries identifies this tree as Yggdrasill, the taxus mentioned by Caesar.[33] Odin was hanging on this tree when he discovered the runes,[34]

[31] Compare tables 8 and 11, pp. 37 and 48 above.

[32] Sophus Bugge, Norrœn Fornkvæði: Sæmundar Edda (Christiana, Norway: Malling, 1867), pp. 342-351, "Fjölsvinnsmál," stanzas 20 and 22.

[33] Jan de Vries, Altgermanische Religionsgeschichte, 2nd ed. (Berlin: Walter de Gruyter, 1956-57), vol. I, p. 245. He refers to Caesar, De bello gallico, VI, 31.

[34] "Hávamál," stanzas 138-139. See quotation, p. 46 above.

and life-giving springs emanate from it.[35] Every religion knows of a tree from which spring life and health, and the Bible also makes ample reference to this symbol.[36] "The symbolism of the tree denotes the life of the cosmos: its consistence, growth, proliferation, generative and regenerative processes. It stands for inexhaustible life and is therefore equivalent to a symbol of immortality."[37] Being associated with the yew, 13 takes on its symbolic meaning of life and healing, longevity, health and strength. This explains its popularity on amulets. Elliott documents the protective power inherent in amulets and wands fashioned of yew wood.[38] The rune which is credited with the same power in "Sigrdrífumál" must surely be the yew rune.[39]

The sixteenth rune — ↑ — was named tīr, týr after Tyr, the god of war and victory. It is called the victory rune in "Sigrdrífumál"[40] The sixteenth day of the Persian calendar was dedicated to Mithra, the god of the invincible sun.

The seventeenth rune — ᛒ , B — is named beorc or bjarkan. The birch tree represents new life, because it bears the first green of every new spring. In the

[35] "Vǫluspá," stanza 19, Neckel/Kuhn, p. 5.

[36] E.g. in Gen. 3:22, Deut. 20:19, Job 14:7-9, Rev. 22:2.

[37] J. E. Cirlot, A Dictionary of Symbols, tr. Jack Sage (1962; rpt. London: Routledge,1971), p. 328.

[38] "Runes, Yews, and Magic," Speculum, 32 (1957), pp. 250-261.

[39] Stanza 10, quoted p. 38 above.

[40] Stanza 6, quoted p. 37 above.

villages of Lower Saxony, I have observed many rites of spring which involve this tree. On Mayday, doors are decorated with its branches, and gate posts are mounted with small birch trees. All over Germany, Easter eggs are hung from birch twigs mounted in vases. This tree is dedicated to Freyja, a goddess who was known to be of a rather sensuous nature and who was also called upon in child-bearing. In India, the seventeenth day was dedicated to Freyja's counterpart, the god of fertility, Prajāpati. "Sigrdrífumál" explains the efficacy of this "birth rune" in child birth.[41] The frequency of 17 on the bracteates would indicate that birth control was definitely not the order of the day.

The symbolism of 17 must have been restricted to human and probably also animal fecundity, because crop fertility is represented by ᛃ with the value 11, meaning ār, Swedish äring, a year's growth, which is connected to Frey, the god of growth.

One other rune is connected with fertility. The twenty-first rune — ᛜ, ᛝ, ᛞ, ᛟ — was named after Ing, the Germanic god of fertility. It is derived from the twenty-first letter of the Greek alphabet, the phi (Φ, φ) Which stands for φαλλός. Since this symbol was necessarily restricted to masculine fertility and virility, it later came to be confused with ᛗ, the m rune called "man." The Abecedarium Nordmannicum lists ᛞ as meaning "man," and the Norwegian and Icelandic poems call ᛘ "maðr."

The twenty-third rune — ᛜ — is called dæg in the Old English poem. The concept of "day" is close-

[41] Stanza 9, quoted p. 38 above.

ly associated with the force of light, and Agrell presents evidence that the twenty-third day of the month was hallowed to the god of light. Certainly, the day was the strongest protection against the demonic powers which harrassed people mainly during the hours of darkness. By being positioned in twenty-fourth place in the Vadstena futhark, it may have served to ward off evil beings which practice their powers during the twenty-fourth hour of the day. Twenty-three must therefore have been a desirable ingredient of a skillfully composed charm.

The twenty-fourth rune — ᚠ — is called feoh, feu, fé, which is equivalent to German Vieh. As men counted their earthly goods in the number of their cattle, fé was, and still is in some civilizations, equated with wealth. "Das altgermanische Wort fehu (altnord. fé) bedeutete ja auch sowohl "Vieh" wie Fahrhabe jeglicher Art, später in besonderem "Geld". Der Vergleich mit lat. pecus "Vieh" und pecunia "Geld" liegt auf der Hand."[42] In divination, the card with the highest number is associated with wealth, and in the case of runic magic, this number would be 24. Here, then, is another welcome addition to a good amulet.

[42] Wolfgang Krause, Was man in Runen ritzte (Halle, Saale: Niemeyer, 1943), p. 37.

V. Symbolic Gematria in Runic Inscriptions

In studying the examples cited by Agrell, which are obviously not chosen at random, one gains the impression that there are basically two types of inscriptions. One type contains 24 as a factor, assuring the owner of wealth. The other type either adds up to a prime number or has such a number as a factor. As he calls all large primes "antidemoniskt," these inscriptions would therefore ward off demonic forces. This type of reasoning shows that Agrell would have done well to consult with a mathematician before drawing his conclusions. Owing to the large number of primes in existence, his observations are entirely consistent with arithmetic probability, and this invalidates his conclusions.

In a random sampling of numbers from 1 to 500, for example, one out of 5 or 6 numbers should be a prime, and we would find an even larger number of prime factors. The last two columns of tables 10 and 13, pp. 44 and 51, list the occurrence of prime numbers and prime factors above 24, which are contained in the bracteate values. Table 10, based on futhark calculations, exhibits normal distribution. Within the given range, the 16 primes are the exact result of random sampling. Table 12, however, displays a different result. Owing to the high frequency of the factors 13, 17, 23, and 24, the number of other factors is necessarily reduced, and we encounter only 5 primes, when the given range should produce 15. The theory of the antidemonic primes can therefore not be maintained.

Agrell was a pioneer who has pointed the way to a new understanding of the Germanic and Indo-Germanic

heritage. Granted, he made many mistakes and was accused of even more by his critics who apparently did not read past his first few examples, but no one ever mentioned his gravest error: he failed to apply the law of probability to his findings. That should have been a necessary criterion in the evaluation of his theory.

An examination of the bracteate values seems to indicate that numeric magic was applied to the inscriptions and that Agrell's theory holds the key to the deciphering of that magic. The evidence is not as conclusive as that of the heptadic numbers in the Bible, for here we find several numbers applied, none of which stands out drastically. A study of the gravestones, however, later on in this chapter, will reveal more striking evidence of the use of this hidden numeric symbolism.

Since on the bracteates we come across several distinct types of inscriptions, we may assume that there were various ways of applying magical power to an amulet.

(a) Futhark formulae resemble alphabets or parts of alphabets. These inscriptions either start with ᚠᚢᚦᚨᚱᚲ, futhark, or they are circular, as in the case of bracteates. E.g. Vadstena #2, Grumpan #3.

(b) Sentences may carry magical powers. For the sake of brevity, these may be replaced by one or more words, e.g. ᚨᚢᛃᚨ, auja, corresponding to the German "Heil," and ᚨᛚᚢ, alu, meaning ecstasy, charm. E.g. Ars II #108, Højstrup #116, Seeland II, #127, Trollhättan #130.

(c) "Begriffsrunen" are single runes which are

given meaning by their names. The most common are ᚠ for "feh" and ↑ for "Tyr." Their usefulness is explained in "Sigrdrífumál."[42] Generally they occur in conjunction with words or sentences. E.g. Slangerup #103, Femö #132.

(d) Seemingly non-meaningful letter combinations appear on several bracteates. They might contain "Begriffsrunen" or abbreviations of a message, e.g. Fünen I #119. Others almost appear to be variations of futharks, e.g. Lindkær #4, Over-Hornbæk III #4, Over-Hornbæk II #129.[43]

i. The Vadstena Bracteate

An example of (a) the futhark formula. Illustrated on page 66.

The Vadstena bracteate #2 is the most perfect example of a futhark charm, and it has generally been regarded as a complete runic alphabet.[44] After care-

[42] See pp. 37-38 above.

[43] It is this last group which is intentionally misread by Wolfgang Krause in an attempt at reconstructing the futhark. There is, however, too much evidence against this interpretation: the inscriptions are quite legible, they do not show the required 24 symbols, and several symbols appear more than once in the same inscription.

[44] See table 8, p. 37 above.

The Vadstena Bracteate #2

fully examining the photographs in Krause, Hauck, and Oxenstierna, I accept Krause's transliteration as correct except for one minor detail: Krause reads two dots after the ᛞ, but his photograph of the reverse side clearly shows only one. Below, then, is the circular inscription with its transliteration and numeric interpretation. On the bracteate, it runs counterclockwise, but here it is given in reverse to facilitate the reading.[45]

ᚠᚢᚦᚨᚱᚲᚷᚹ:ᚺᚾᛁᛃᛇᛈᛉᛊ:

f u th a r k g v : h n i j i p R s

24+1+2+3+4+5+6+7 : 8+9+10+11+12+13+14+15

52 : 92

4 x 13 : 4 x 23

ᛏᛒᛖᛗᛚᛜᛟᛞ.ᛚᚢᚹᚨᛏᚢᚹᚨ.

t b e m l ng o d . l u v a t u v a .

16+17+18+19+20+21+22+23 : 20+1+7+3+16+1+7+3

156 : 58

12 x 13 : 58

When 52+92+156+58 are added, the total is 358, which is not divisible by any number up to 24 other than 2, but when 6, the number of dots is added, the grand total of 364=4x7x13.

The two numbers which figure most prominently in

[45] The b is written ᛒ with rounded backs in this late inscription, because ᛒ is used to replace the ᛓ.

bracteate symbolism, namely 13 and 23, are the dominant factors. The 23 wards off evil forces, and 13, in its threefold appearance, assures the bearer of a long life free from sickness and accident. The heavenly joy, which is represented in the 7, brings an added bonus.[46]

With a bit of experimenting we can test the variations for which the futhark allows. The rune master could certainly have given the 24 runes in simpler form with their three ættir[47] divided by non-countable symbols such as swastikas or triskeles. The 23 and two of the 13s would still be there, but the sum of the three ættir would be of fatal symbolic value, for 52+92+156=300, which is a multiple of 10, the symbol of death. The three ættir could also have been separated by 12 dots, bringing the grand total to 312, which equals 24x13. Now 24, the symbol of wealth, would be included, but the death symbol would not be eliminated, and health and wealth have little meaning when they are accompanied by death. The author of the Vadstena text solved the problem in an ingenious manner: He eliminated the symbolism of 10 by adding the harmless 4th section "luvatuva," which increases the total to 358 and the grand total to 364, a multiple

[46] Agrell reads the last section as "tuvatuva," reasoning that one stroke of the ↑ is covered by the clasp, but when we compare the other ↑ with the two ↑, his reading proves to be incorrect. The diagonal line on the ↑ is longer and at a sharper angle than those of the ↑. Agrell consistently ignores the total without dots, and his grand total, 360=15x24. He does not deal with the problem of the factor 10, the death symbol appearing on an amulet.

[47] The term ættir was explained on p. 36 above.

of 13.

If the rune master had taken Agrell's original rune alphabet (table 11, p. 48) and had divided it into three equal sections, he would have obtained the formula 36+100+164=300. Not one of these four numbers contains a symbolically beneficial factor, but two of them contain the death symbol. In fact, 100, the square of 10, is the most deadly curse available. An amulet inscribed with this curse would have made an ideal gift for an enemy.

The Vadstena is the longest of all the bracteate inscriptions and has the highest numeric value. Its originator was no doubt one of the most resourceful rune experts of his time, and this may have been his masterpiece. We can therefore expect the other details of the amulet to be in keeping with the symbolism of the inscription.

Until the appearance of Karl Hauck's monumental work in 1970, all interpretations of bracteate inscriptions were guided by "spekulierende Improvisation."[48] Hauck does not treat the bracteates simply by themselves, as writers had done previously, but traces the historic development of their pictorial symbolism. His painstakingly detailed research leaves no room for speculation but sheds light on every type of imagery found on bracteates.

"Da es sich bei ihnen [den Brakteaten] um Amulette handelt, ist ihnen von allen literarischen Gattungen die der Zaubersprüche am engsten verwandt."[49]

[48] Goldbrakteaten aus Sievern (München: Fink), p. 142.

[49] Hauck, p. 175.

The most commonly recurring theme is the story known to us through the second "Merseburger Zauberspruch": the healing of Baldr's horse by his father Odin, the highest of gods. Various episodes are depicted on the bracteates in partly descriptive, partly symbolic imagery:

— the young Baldr with long braided hair riding to the thing, e.g. Hesselager #114, Fünen I #119.

— the fallen horse, with a bleeding hoof or legs twisted or even detached from the body,[50] being assisted by Odin in shaman's regalia, e.g. Lellinge #121, Körlin #137.

— the horse restored to health with new life emanating from his mouth, e.g. Vadstena #2, Börringe #10.

Such an example of supernatural healing power would make the amulet effective as a shield against sickness, accident, or any kind of harmful influence. As shown earlier, 13 is the number which assures the wearer of a long healthful life, and 23 wards off evil forces which cause accident or other ill.[51] It is therefore not surprising that the Baldr illustrations are predominantly accompanied by 13 or 23 or both.

In the Vadstena illustration (p. 66), Odin is recognized as the head shaman by the inverted bird's

[50] One bracteate showing both forelegs detatched was found in close geographical proximity to the Zauberspruch in a woman's grave at Obermöllern, near Merseburg. See Hauck pp. 211 and 402.

[51] Pp. 59-60 and 61-62 above.

cap and the winged helper which accompanies him.

> Unter der Göttern ist Odin der große Magiker. Galdrs fǫður nennt ihn ein Eddagedicht (Bdr. 3). In den Hávamál rühmt er sich, Zaubersprüche zu kennen, um Wunden zu heilen, Feindeswaffen stumpf zu machen, Fesseln zu sprengen, u. a.[52]

His changing of form (Gestaltentausch) is well documented by Snorri,[53] and it is also reflected in his many names which characterize him as an animal. On the Börringe bracteate #110, he is represented by an animal head (probably a bear's) wearing an inverted bird's cap. "Auf eine Habichtgestalt deuten Namen wie Geirloðnir, Ginnarr, Olgr; auf die eines Adlers Qrn, Arnhǫfði, Viðhrímnir (Falk 3,41)."[54]

Various animal masks and caps are still worn by shamans in all parts of the world during certain rituals. For healing ceremonies, the shaman evidently was to take on the character and form of a bird and deliver the incantation in a birdlike voice.

> Der gewöhnliche Name für den Zauberspruch ist galdr. Dieses Wort ist vom Zeitwort galan abgeleitet, das sonst "singen" bedeutet und besonders auf Vogelstimmen angewendet wird. Man darf daraus schließen, daß die magischen Lieder mit einer hellen, vielleicht zu Falsett neigenden Stimme gesungen wurden.[55]

[52] De Vries II, p.73.

[53] Hauck, p. 202

[54] De Vries II, p. 64; and [55] I, p.304.

The accompanying bird, always placed in front of Odin's face, may be a "gefiederter Hilfsgeist," as Hauck calls him, who tries to find Odin's ear "um ihm Kunde aus der Welt der Geister und Seelen zurufen zu können,"[56] or he may be a personification of the spiritual power emanating from the shaman in bird form.[57]

Odin's mouth is turned directly to the horse's ear, and the horse responds with apparently joyful whinnying. Hauck calls the symbolic line coming from its mouth "den Atemhauch des ersten Wieherns, mit dem das wiederbelebte Tier auf den Rede-Logos antwortet."[58]

One other recurring symbol deserves notice: the horns found on Baldr's horse. Horns were a part of the insignia of the Celtic-Germanic troups in the Roman army, and because of their significant contribution to the victory at the Milvian bridge in 312 A.D., Constantine gave special concessions to the Germanic "cornuti" and incorporated the horns in the emblems of the Roman army, combining them with the cross, the sign under which he had won that decisive battle.[59] The combination of these pagan and Christian emblems, the horns and the cross, is seen on several bracteates, e.g. Lindkær #4a, Olst #123, Lekkende #126. On most bracteates, Baldr's horse is

[56] Hauck, p.187.

[57] De Vries II, p.63.

[58] Hauck, p.410.

[59] Shown by Andreas Alföldi in "Cornuti: A Teutonic Contingent in the Service of Constantine the Great and its Decisive Role in the Battle at the Milvian Bridge (Dumbarton Oaks Papers 13, 1959). Cited by Hauck, p. 412.

adorned by the horns alone, identifying the rider as belonging to an elite group of warriors. Where we find the horns fallen to the ground, they emphasize the helplessness of the wounded horse, e.g. on the Obermöllern bracteate, on which the legs are also detached.

ii. The Seeland II Bracteate

An example of (b) rune sentence and
(c) "Begriffsrune" (See p. 64).
Illustrated on page 74.

One of the most beautiful and best preserved bracteates, the Seeland II #127, exemplifies the use of a complete sentence as well as the application of "Begriffsrunen." The inscription again runs counter-clockwise and is here given in reverse:

ᚺᚨᚱ ᛁ ᚢᚺᚨᚺᚨᛁ ᛏ ᛁᚲᚨ : ᚠᚨᚱᚨᚢᛁ ᛋᚨ :

h a r i u h a h a i t i k a f a r a u i s a

8+3+4+10+1+8+3+8+3+10+16+10+5+3 24+3+4+3+1+10+15+3

92 (4 x 23) 63 (3 x 21)

ᚷ ᛁ ᛒ ᚢᚨᚢ ᛏ ᚨ ⁘ ᛏᛏᛏ

g i b u a u j a 3x t

6+10+17+1+3+1+11+3 3x16

52 (4 x 13) 48 (3x16 (and possibly 2x24))

Seeland II #127

Trollhättan #130

BRACTEATES

Lindkær #4a

Over-Hornbæk III #4b

Over-Hornbæk II #129

The total of all single runes is 92+63+52=207=9x23. Adding the large triple victory rune, we arrive at 207+48=255=15x17, and when the 9 dots are added, the grand total of 264=11x24. The "Begriffsrune" ᛏ, named after Tyr, the victorious war god, appears in large triplicate as ᛏᛏᛏ.[59] Having twice the size of the other runes, it emphacizes the role of the victory symbolism of the number 16. The other five numbers are not immediately obvious, but are evidently carefully chosen:

— 13 for good health and a long life
— 17 for fertility
— 21 for virility
— 23 for protection from evil (appears twice)
— 24 for wealth.

The skill which fashioned such intricate symbolism was probably acquired through years of studying and experimenting, and the rune master was therefore rightly proud of his art. The inscription reads:

Hariuhahaitika farauisa gibuauja

Krause translates: "Hariuha heiße ich, der Gefährliches Wissende. Ich gebe Heil."[60] For the word fara, which he interprets as "Gefährliches," he lists the additional meanings of "Unglück, Zorn, Verderben, Gefahr." The author of the inscription points out the

[59] All rune scholars, including Krause, accept this reading, yet are unwilling to identify the ᛏ of Over-Hornbæk II #4.

[60] Krause, p.262.

power of the runes for evil as well as for good, for curses as well as for blessings, and has packed this charm with a variety of blessings.

The imagery depicts a modernized version of the healing of Baldr's horse. The animal is still adorned by horns, but his hoofs are split and resemble fish tails. Odin still wears his bird cap, even if it appears in stylized form, but his spirit bird has been replaced by a spear to symbolize an aspect of Odin's personality which was more readily understood. It also repeats the symbolism of the victory runes. The exaggerated shape of Odin's mouth seems to indicate that he has just breathed new life into the horse. In this healing ceremony the shaman, Odin, uses all the resources at his disposal, uniting with the whole animal kingdom — mammal, reptile, bird, and fish being represented. This is a ritual in which "die Grenzen zwischen Mensch und Tier, zwischen Belebtem und Unbelebtem verschwinden."[61]

iii. The Trollhättan Bracteate

An example of (b) rune sentence (See p. 64) and algebraic engineering. Illustrated on page 74.

Another bracteate should be examined here, because it demonstrates clearly the purpose of sections within an inscription. The Tollhättan bracteate #130 reads:

[61] Krause, p. 267.

t a v o l a th o d u

16+3+7+22+20 3+2+22+23+1

68 + 51 = 119

4 x 17 + 3 x 17 = 7 x 17

Were the inscription divided according to words, it would read "tavo lathodu," which Krause translates as: "Ich nehme eine Zitation vor."[62] Were it divided according to the availability of space, it would read "tavo lathodu" or possibly "tav olathodu." The runes of "tavol" are cramped while "athodu" is loosely spaced with room to spare on either side. Only two explanations are possible for the unusual and seemingly impractical division: Either it was to produce a symmetric form of five runes on either side, or else it aimed at creating a powerful threefold fertility charm. If the main consideration had been that of symmetric form, one would expect a little more foresight in the allocation of space. The gematric symbolism of 17, on the other hand, is evidently achieved by careful planning. The chance for arriving at three consecutive multiples of 17 is 1 out of 4913 for one bracteate and 1 out of 136 for the 36 bracteates under consideration.[63] It therefore appears that the sections were chosen for the sake of numeric magic.

[62] Krause, p. 267.

[63] 17x17x17=4913 and 4913÷36=136. The total of 119 appears to be an intentional multiple of 17, because the author could have changed it by adding a nonsense word as in the Vadstena bracteate.

iv. The Nonsense Bracteates

Examples of (d) non-meaningful letter combinations (See p. 65), and algebraic abstraction. Illustrated on page 74.

Many bracteates seem to fit into one or the other of the various amulet patterns listed on page 64, yet when we transcribe the messages, they are meaningless and even unpronouncable. To say that they are simply faulty copies of charms only bypasses the problem. Some of them are very carefully executed, making each rune quite distinctly legible, yet the inscriptions bear only superficial resemblance to the supposed originals. They must therefore be intentional recreations rather than mere copies. Magic has always been regarded as a sacred art, and if we accept the bracteates as sacred charms, we must give the magicians credit for having handed down correctly the skills necessary for the execution of this art.

The Fünen I bracteate #119, illustrated on page 74, is clearly legible, although Krause describes as "illegible" all runes which he considers incorrect. In transcription its three sections read:

houaR		lathuaapuaaaliiu		ala	
48	+	95	+	26	= 169
2x24		5x19	+	2x13	

The only certain message of this inscription is the symbolism hidden in 169, the square of 13.

Three different bracteates with seeming nonsense inscriptions can easily be recognized as originating with the same craftsman or at least the same workshop. Krause regards all three as more or less

corrupt copies of the futhark. Their number values are as follows:

Lindkær	# 4a . . .	208=16x13
Over-Hornbæk III	# 4b . . .	253=11x23
Over-Hornbæk II	#129 . . .	299=13x23

The chance that any three given numbers would be divisible by both 13 and 23 twice is 1 out of 133, a rather unlikely coincidence.[64] We may therefore conjecture that the craftsman was not as ignorant as we have been led to believe.

v. The Gravestones

The memorial stones, which have been found either in or on graves of distinguished people, serve an entirely different purpose from bracteates and would not be expected to carry the same symbolism. It is believed that their inscriptions were to protect the living from being haunted by the spirits of the deceased. Agrell says, "Der Runenritzer hat . . . die Absicht gehabt, durch die magische Kraft der Runen einen Verstorbenen für immer in dem Reich des Todes zu fesseln."[65] He therefore expects a prevalence of the ice rune — ᛁ — which is equivalent to 10, but he does not draw the conclusion that 10 should also domi-

[64] $(\frac{3}{2}+13)\times(\frac{3}{2}+23)=132.89$

[65] Agrell, "Die spätantike Alphabetmystik und die Runenreihe," p. 6. Likewise Düwel, Runenkunde, p. 19: "Die . . . magischen Kräfte sollten gegen Grabfrevel schützen oder den Toten im Grabe bannen."

nate as a factor. On the stones which he examines, the total almost invariably works out to a prime number, but unfortunately his transcriptions are full of errors and frequently incomplete.

There are sixteen legible gravestones in Krause/Jankuhn. These will be taken here as a sample group in order to search for possible numeric symbolism. If we substitute the futhark values given in table 8, page 37, the resultant graph of factor occurrence is just as normal as that of the bracteate factors of graph 4, page 44, so that its reproduction here would be of no value. Quite different results are obtained by substituting Agrell's alphabetic values of table 11, page 48. Table 14 lists the gematric values of the inscriptions. When comparing this table with tables 4 and 5 on pages 44 and 52, it will be noticed that column B is eliminated here, because these inscriptions do not use dots as dividers between sections.

TABLE 14: Gematric Values of the Memorial Stones According to the Alphabet System

No.	Stone	Value of entire inscription	Values of individual sections
1	Kylver	350	300, 50
57	Elgesem	24	
61	Kalleby	147	49, 98
64	Barmen	112	
66	Vånga	56	
69	Rosseland	230	
81	Stenstad	116	
83	Belland	49	
86	Berga	177	65, 112
87	Skärkind	108	
88	Møgedal	68	
90	Sunde	105	
92	Eidsvag	49	
93	Bratsberg	49	
94	Tveito	67	
102	Roes	84	21, 63

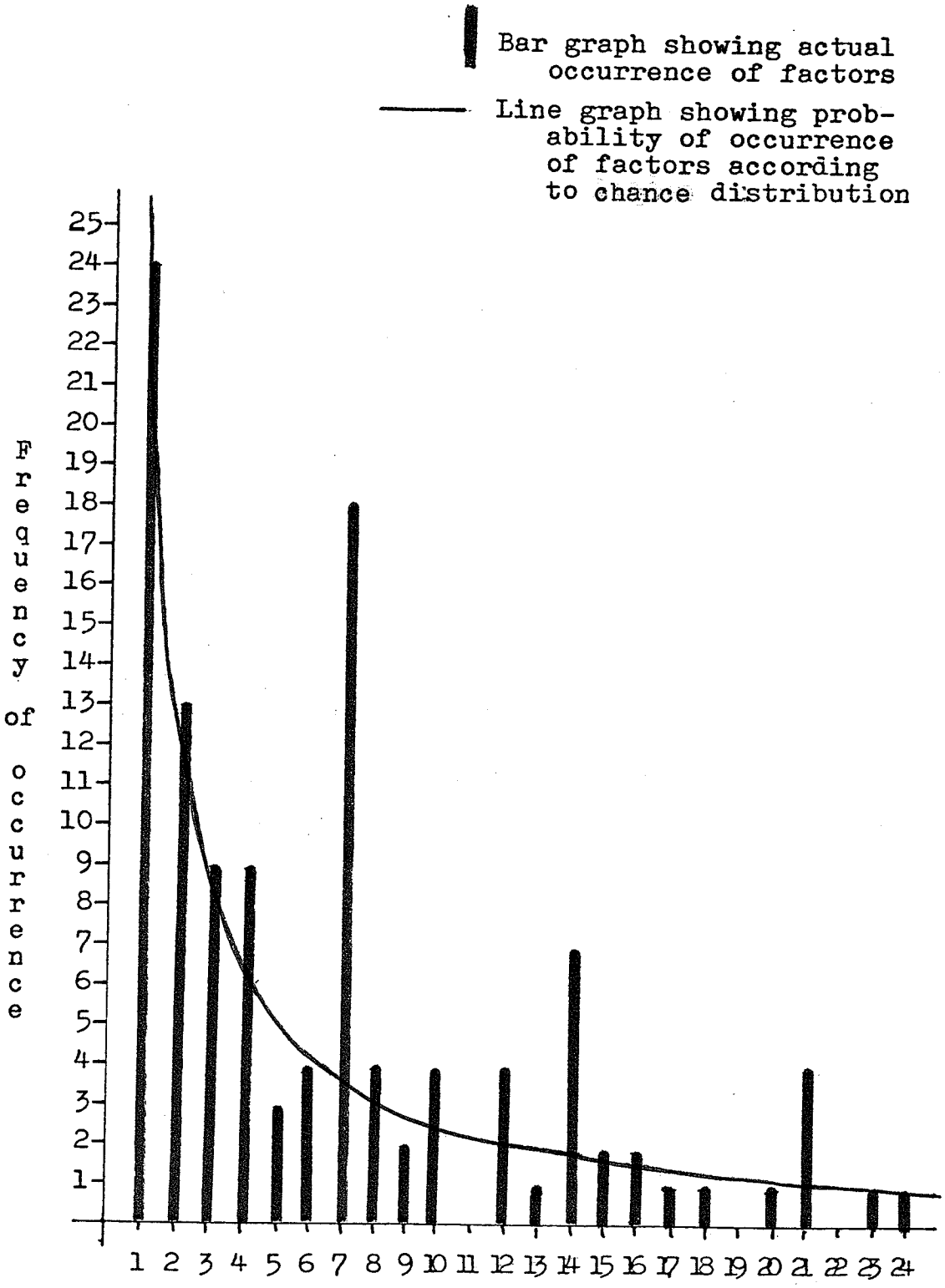
The 24 values of table 14 were tested for divisibility, and the results are displayed in table 15. For an explanation of the method, see pages 22 and 41 above. In contrast to Agrell's findings, only one prime number (67) and two prime factors (29 and 59) above 24 occur, therefore these are not considered. In the last column, the occurrence of 49, the square of 7, is listed.

TABLE 15: Factors Obtained from the Values of Table 14

No.	Factor																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	49
1	3	3	1	1	3	1	1			3		1		1	1					1					
57	1	1	1	1		1		1				1												1	
61	3	1	1				4							1											3
64	1	1		1			1	1						1		1									
66	1	1		1			1	1						1											
69	1	1			1					1													1		
81	1	1		1																					
83	1						2																		1
86	3	1	1	1	1		1	1					1	1		1									
87	1	1	1	1		1			1			1						1							
88	1	1		1													1								
90	1		1		1		1								1						1				
92	1						2																		1
93	1						2																		1
94	1																								
102	3	1	3	1		1	3		1			1		1							3				
Total	24	13	9	9	3	4	18	4	2	4	-	4	1	7	2	2	1	1	-	1	4	-	1	1	6

The occurrence of factors of table 15 is visualized in graph 6. At first glance, this graph almost appears to be a reproduction of graph 2, page 23, which illustrates the occurrence of sevens in the Magnificat, even though here the thesis system of enumeration was applied, whereas the earlier example was based on the Milesian system.

GRAPH 6: Divisibility of Memorial Stone Values



In graph 6, the factor 7 occurs more than 5 times as often as expected, and consequently 14 and 21 also do well (4x and 3½x). The actual number 49, the square of 7, appears 4 times in table 14, which is about 8 times the norm, and as a factor 49 occurs 6 times, which is better than 12 times the expected number.[66]

A dominance of tens, which was to ban the departed to the land of death forever, has not materialized. The abundance of sevens proves the motives of the survivors to be unselfish, for seven is the number of "Wonne," and it should hasten the journey to Valhalla, the place which had been associated numerically with the joys of the seventh heaven of Mithraism (p. 58 above). We could compare the setting of this type of memorial stone to the Catholic practices of buying an indulgence, of offering prayers for the dead, or of lighting a candle to speed the soul's way from purgatory to heaven. Or could it be that some of these stones were already commissioned by their owners before their departure? One could, of course, argue that a quick ascent to heaven is the best preventive measure against haunting. If the deceased was sent to the place of "wyn," he would be unlikely to wish to return to earth, so that the symbolism of seven was of advantage to everyone concerned. Agrell's supposition regarding the purpose of the inscriptions may therefore be quite correct. He was mistaken only about the

[66] 7 as a factor occurs 18x 7÷24= 5.25 times,
14 as a factor occurs 7x14÷24= 4.08 times,
21 as a factor occurs 4x21÷24= 3.50 times,
49 as a number occurs 4x49÷24= 8.17 times,
49 as a factor occurs 6x49÷24=12.25 times as often as expected. Explanations on p. 53, note 19.

method which was supposed to have been employed by the writers of the inscriptions.

Whichever the case, the symbolic gematria based on seven occurs far too frequently to be credited to chance. These inscriptions appear to be laboriously pieced together rune by rune to fit a required algebraic formula. In the gravestones as well as in the amulets, the evidence of the gematric symbolism points to a planned construction of an inscription which served the prime objective of expressing a definite arithmetic sum. The correctness of the verbal message, though desirable, was not obligatory. If we accept this view, we can better understand the frequent testimonies which praise the skills of the rune masters and the powers of the runes.[67]

VI. Numeric Structure of Runic Inscriptions

So far, only the hidden gematric structure of the inscriptions has been tested. The outward structural divisions also bear examination. Half the bracteates show no divisions, the other half have sections and a few even subsections. Table 16 lists the bracteates with divided inscriptions and gives the number of sections and subsections.

[67] For examples see pp. 37-38, 46, and 74.

TABLE 16: Number of Sections in Bracteate Inscriptions

No.	Bracteate	Sections	Subsections
2	Vadstena	4	
103	Slangerup	2	
104	Darum V	2	
109	Skrydstrup	2	
110	Börringe	2	2
112	Seeland I	4	
113	Allesø	4	
114	Hesselager	2	4
115	Darum IV	2	2
117	Darum I	2	
119	Fünen I	2	2
123	Ølst	4	
127	Seeland II	4	
130	Trollhättan	2	
133	Nebenstedt I	2	

Since 2, with its square 4, holds the monopoly in table 16, this type of structure cannot be accidental. If it was planned, this must have been done for a definite purpose, which may or may not have been symbolic. If it was symbolic, then this symbolism is at variance with the symbolism of the gematria in which 2 and 4 displayed normal frequency (see graph 5, p.52). A symbolism of 2 would give prominence to ᚦ which stands for thurs, the representation of evil powers. On a bracteate, such meaning would be paradoxical and would counteract the good done by 13 and 23. A glance at table 14, page 81, reveals that the divided gravestone insriptions likewise have exactly 2 sections, although the numeric

symbolism of the stones proved to have nothing in common with that of the bracteates. The twofold structure can therefore only be interpreted as the result of a striving for a balanced and harmonious form which is, however, not symbolic.

The number of runes in an inscription might also be of symbolic significance and must be investigated. Since the futhark contains 24 runes, the number 24 has generally been contended to be the magic number, and an amulet of 24 symbols was thought to hold "die geballte Runenkraft."[68] Klaus Düwel seems to share this belief, even though he points out its obvious fallacy: "Eine genaue Vorstellung dieser im Futhark versammelten Runenmacht läßt sich im einzelnen nicht geben, da die Zeichen verschiedene und oft gegensätzliche Bedeutung vertreten."[69] The Lindholm amulet is usually cited as the classical example of a 24 rune charm, although only one of its two lines adds up to 24 runes, while the other is short by one.[70] No attempt has ever been made to investigate whether the count of 24 occurs on amulets frequently enough to indicate its intentional usage.

If we again examine the bracteate inscriptions for a count of symbols, we should be able to establish which rune counts, if any, were preferred on amulets. Table 17 lists the bracteates giving the total number

[68] Wolfgang Morgenroth, "Zahlenmagie in Runeninschriften," Wissenschaftliche Zeitschrift der Ernst-Moritz-Arndt-Universität, Greifswald, 10 (1961), p. 281.

[69] Düwel, p.111.

[70] Krause believes that this missing rune is due to a simple error of omission by the carver. See Düwel, p. 112; and Krause/Jankuhn, p. 70.

of runes in the inscriptions (column A), and the number of runes in each section or subsection as defined on page 40þ (column B). Where a "Binderune" (ligation of two or more runes) occurs, we must assume that a count of 1 was intended.

TABLE 17: Number of Rune Symbols in Bracteate Inscriptions

No.	Bracteate	Number of rune symbols	
		in entire inscription	in each section or subsection
		A	B
2	Vadstena	32	8, 8, 8, 8
4a	Lindkær	22	
4b	Over-Hornbæk III	19	
103a	Slangerup	4	3, 1
103b	Klaggeröd	3	
104	Darum V	9	6, 3
105	Skodborg	37	
107	Schonen IV	3	
108	Ars II	6	
109	Skrydstrup	8	5, 3
110	Börringe	14	6, 2, 6, 8
111	Dänemark I	4	
112	Seeland I	4	
113	Alleso	15	3, 4, 4, 4, 7, 8
114	Hesselager	9	5, 1, 1, 1, 1
115	Darum IV	16	8, 8, 4, 4[c]
116	Höjstrup	4	

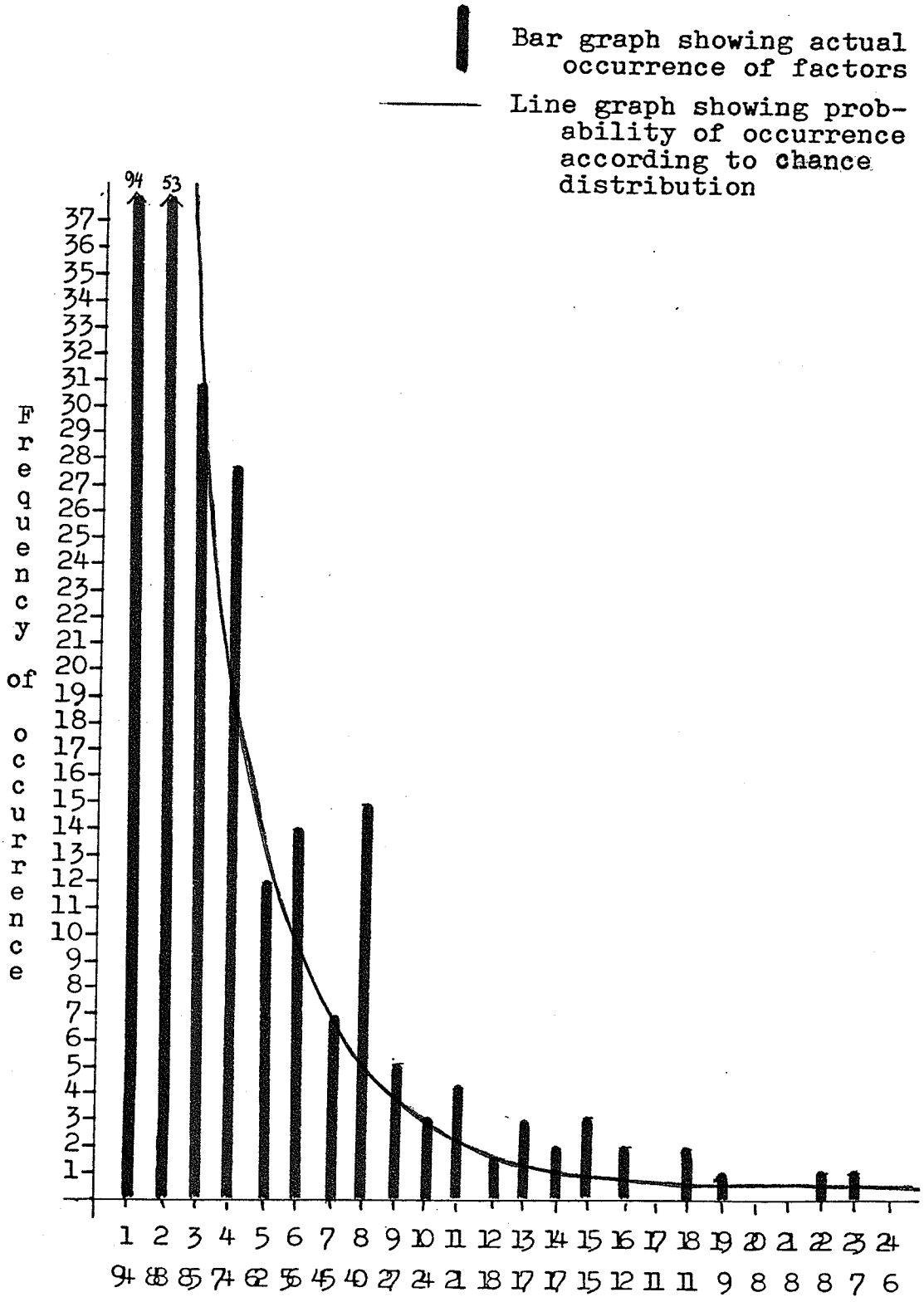
continued on next page

TABLE 17 continued

117 Darum I (3)	11	7, 4
118 Skonager III	10	7, 3
119 Fünen I	23	5, 15, 3, 8
121 Lellinge	8	
122 Faxe	18	6, 6, 6
123 Olst	6	3, 3
124 Norwegen	5	
125 Tjurkö II	3	
126 Lekkende	2	
127 Seeland II	31	14, 8, 8, 1
128a Väsby	26	
128b Äskatorp	26	
129 Over-Hornbæk II	26	
130 Trollhättan	10	5, 5
131 Asum	12	10, 2
132 Femo	8	
133 Nebenstedt I	15	9, 6
134 Sievern	6	
137 Körlin	6	

The numbers in table 17 were tested for divisibility and the results are displayed in graph 7. Owing to the high proportion of numbers in the lower range, the line graph indicating the expected pattern is adjusted accordingly and dips lower than the line graph in graphs 4 and 5 on pages 44 and 52. As in previous graphs, the factors from 1 to 24 are listed along the base. The line below records the number of entries which are high enough to be considered for each particular factor, i.e. which are at least as large as the factor itself.

GRAPH 7: Divisibility of Rune Count of Bracteates



The 6 in the bottom line of graph 7 indicates that only 6 of the inscriptions contain at least 24 runes, but the bar graph shows that none of these are exactly equal to a count of 24. If precisely 24 runes were required to impart magical power to an amulet, then none of these amulets would contain such magic. Out of all the bracteates reproduced in Krause, only one bears exactly 24 runic symbols, namely the Grumpan #3, but due to its poor legibility, it was not included in this table.

The only number appearing often enough to warrant any kind of reliable conclusion is 8. Out of the 94 numbers in table 17, only 40 are either equal to or greater than 8. Out of those 40 possibilities, exactly 13 are equal to 8, and 2 others are multiples of 8. Therefore the factor 8 occurs (13+2)x8÷40=3 times as often as expected. It is true that 15 and 18 also occur better than twice as often as expected, but their actual counts of 3 and 2 are too low to warrant conclusions. The most that can be said is this: The number 8 seems to have been a preferred number in the structure of amulets, and possibly this preference was caused by the practice of working with a futhark which was divided into ættir of 8 runes each.[71]

If the preference for 8 has symbolic significance, then it does not agree with the symbolism evident in the gematria of graph 5, page 52. The eighth rune — ᚺ — was named hagal, meaning stone or hail and was "clearly associated with damaging natural forces."[72]

[71] An examination of the number of runes on the gravestones reveals absolutely no design at all.

[72] Elliott, Runes, p.55.

It may therefore be assumed that its use for the length of sections was not symbolic but rather a means of giving a balanced symmetrical design.

The numeric structure of runic inscriptions, be it in the number of sections (table 16, p. 86) or in the rune count (graph 7, p. 90), does not point to symbolism but to a striving for form. This striving may not necessarily have been deliberate. Just as poetic form is at times created without conscious effort, so this form could reflect intuitive responces in some of these inscriptions.

VII. Number Symbolism in Runic Inscriptions

Before we can compare the use of number on runic monuments with that of the Bible, we must first of all realize that we are dealing with entirely different types of literary works. The canon of scripture is a compendium of writings covering a span of about 1600 years, yet in its use of number it shows evidence of a definite master plan. The runic inscriptions examined in this chapter are short, independent literary creations, covering a period of about 350 years.[73] Most of them exhibit common stylistic elements in their numeric structures, but they do not follow one strict plan. Comparing these two is like examining a large completed mosaic and then looking at a collection of polished agates which have common properties but do not form one unified design. In spite of some obvious

[73] Krause dates the bracteates 400-580 A.D. and the stones 400-750 A.D.

differences, however, certain similar qualities become apparent at a closer range.

In the Bible we have observed three distinct ways in which number was used as a literary device:

(a) Number words were used with symbolic meaning.
(b) The overall as well as the internal structure was based on the symbolic meaning of numbers.
(c) The gematric symbolism corresponded with that meaning.

If we apply these three criteria to the bracteates or stones, we notice a total absence of the first one. Number words do not even occur in any of the inscriptions. The second criterion, the numeric structure, revealed no evidence of symbolism. The only detectable numeric symbolism is contained in the gematria, the hidden number structure, which is here employed in the service of magic. A charm was primarily designed to carry certain powers and the message was incidental. It can therefore not be evaluated by the same standards as the Bible, which combines the power with the message. Whereas the runes carry their power in their symbolic associations, the power of scripture lies in the word itself, because it is "the word of God."[74]

In the first chapter, the unity of word and number in the Bible was demonstrated.[75] There both strive for the same goal, and both are simply different forms of expression supporting each other. The present chapter has shed light on a later development.

[74] Heb. 4:12; 2 Pet. 3:5 and 7; Ps. 107:20.

[75] Cf. pp. 27-28 above.

Letter and number are still inseparably linked, but the ease of expression is lost when the interdependence of the two is carried over to words or sentences. At times, in fact the meaning becomes obscure. Word and number are no longer intimately related, although the evidence reveals that this relationship was indeed attempted. There seems to have developed instead a greater reliance on a pictorial symbolism, an emblematic technique with greater affinity to the gematric number symbolism than to the word meaning, so that the unity of word and number has been replaced by a near-unity of image and number.

CHAPTER THREE

NUMERIC STRUCTURE:
THE MIDDLE AGES

I. Religious and Linguistic Changes

The Runic alphabet which has been discussed in the previous chapter, was in use till the middle of the eleventh century. By that time, the religious cults which required the use of rune magic had been driven north into Scandinavia and then east to Siberia by the advance of Christianity. Missionaries first arrived in Germany and Denmark during the early eigth century, in Sweden in the ninth, and in Norway in the late tenth. As Christanity gained a foothold, shamans skilled in the fashioning of effective charms were no longer in demand, and inscriptions drifted from magic to narrative. The verbal message became the prime concern of the rune master.

In the southern regions of the Germanic area, the Roman alphabet was introduced along with Christian teachings in the ninth century, but to the north of Romanized Europe, runic script was still the only means of written communication. In the 700 years since the creation of the rune alphabet, the spoken language had not remained at a standstill, and a general diversification of sounds had required definite adjustments in the written language. In England, this

diversification had led to a gradual lengthening of the alphabet. On the continent, however, greater respect for a divine institution preserved the count of 24 runes. Each emerging new sound was represented by the letter which most closely resembled it in pronunciation.

The following are some of the adjustments in consonants which were required by this linguistic development:

(a) The ƀ sound was represented by the b rune, and gradually b, ƀ, and p were all written as b runes — ᛒ, ᛒ — so that the p rune — ᛈ, ᛗ, ᚹ — eventually became obsolete.

(b) Likewise the k rune — ᚲ, ᚴ, ᚵ — denoted k, g, and ng, eliminating the need for ᚷ(g) and ᛜ, ᛟ, ᛜ (ng). But then ᛜ, the phallic symbol, came to replace ᛗ for man, as has been pointed out earlier (See p. 61 above).

(c) The t rune — ᛏ — came to stand for d as well, rendering ᛞ redundant.

The vowel sounds underwent gradual changes. For example

(a) The rune representing the vowel "a" — ᚨ — became nasalized and later changed to an o sound.

(b) The a sound then was represented by the j rune — ᛃ, ᛋ, ᛇ, ᛇ — because the j sound was written as an i rune — ᛁ — .

(c) The i rune — ᛁ — eventually came to represent i, j, and e as well as several of the newly developing Scandinavian diphthongs. The e rune — ᛖ — was therefore no longer needed.

With all these transfers and omissions of letters,

the old futhark was no longer useful as a means of communication, and its magical implications were no longer a desirable asset in a country which was being Christianized. New writing tools were also introduced. The shapes of the runes had originally been designed with the carver's knife in mind and had later been adapted to the stone cutter's chisel with only slight modifications. Pen and parchment made these symbols appear awkward, to say the least, and the conversion to the Roman alphabet may well have meant a welcome relief from a system which was no longer practical.

An even more demanding reason for the ready adoption of the new alphabet must have been the necessity to make a complete break with the former religious practices. Since runes had been the vehicle of cultic magic, their use was clearly unacceptable for a convert, and in Germany they died out with the advance of Christianity.

II. The Revised Scandinavian Futhark

North of Germany, Christianity was not introduced until later, and in the meantime the Scandinavians recognized the need to make their own script more relevant to the linguistic requirements of a new era. The alphabet was therefore revised and abridged. A new futhark was developed: 16 runes were divided into three ættir of six, five, and five runes respectively. This so-called "younger futhark" does not just list the surviving runes in order, but makes some structural adjustments, possibly for the purpose of creating a beneficial numeric system. Two runes are exchanged and another one is moved

from the middle to the end.

What happened to the number-letter equivalence when the futhark was revised, cannot be known for certain without extensive testing. When the Milesian number system came into use in Greece, the cultic practices were not influenced by it, but continued with the traditional thesis system (See p. 35 above). Since the practice of runic magic was believed to be divinely instituted, it appears reasonable to suppose that here, too, the equivalence was left as handed down by tradition.

If we assume that each rune of the younger futhark retains its original numeric identity, the new futhark itself would still embody symbolic numeric magic similar to that of the older futhark.[1] To verify whether this symbolism is actually carried over into the inscriptions, would require a conversion of all inscriptions into numeric values such as the one for the bracteates in chapter two. As the extant monuments are fairly well preserved, this task would not be difficult, yet extremely time consuming because of the vast number of lengthy inscriptions. Transcriptions are often full of errors, therefore the original texts would have to be available for such a study. Most likely, the results would not be worth the effort, because the primary aim of the writing in this time period was quite obviously narrative and not magic. The few stones which I have tested have revealed no gematric pattern at all.

[1] For a discussion of the older futhark symbolism in the Vadstena inscription, see pp. 68 -69 above.

Several studies have attempted to demonstrate numeric structure in the younger futhark inscriptions. Two of them will be examined here briefly:

i. A Study of Proportions

Hans Brix, Systematiske beregninger i de danske runeindskrifter.[2]

This detailed examination of about 50 of the 250 Danish rune stones is based on a count of the number of runes on each stone, i.e. each rune receives the value 1. The Danish scholar groups the stones according to the patterns which appear in the length of the lines. His methods, in contrast to Agrell's, are just as systematic as the title suggests, although his conclusions should be tested by the laws of probability before they are considered valid. Obviously, if one creates enough categories, every inscription will find a fitting group. One also wonders whether these 50 stones were picked out of the 250 at random, whether the other 200 are illegible, or whether he simply chose the examples which suited his theory.

Besides listing a straightforward count of runes in an inscription, he also counts the number of words and the total number of certain groups of runes. He also draws attention to the placement of certain runes in certain positions. On pages 24-25, for example, he analyzes the stone of Gunderup #2 and observes that the classical proportions 1:2:4 are observed. The entire inscription has the count of 14 words, 28 certain

[2] Copenhagen: Gyldendal/Nordisk, 1932.

sonants (n,i,u,a), and 56 runes.[3] This simply means that the average word contains 2 syllables and 4 letters — not really a surprising discovery, unless this exact pattern occurs often enough to defy the law of chance, but this does not seem to be the case, for on other stones Brix counts different items and discovers different patterns.

His study points to only one inescapable conclusion: these inscriptions were designed with an eye for balance and often symmetry. This design was no doubt intentional but does not prove the use of magic, as so many rune scholars, including Brix, insist. If every intricate design points to magic, then every poem was created in the service of magic, likewise every musical composition, and almost every architectural structure.

ii. A Study of the Rune Count

Magnus Olsen, "Om trollruner."[4]

The Norwegian scholar examines the text of certain poetic stanzas in Egils Saga which deal with magic. He reconstructs the probable original runic texts and concludes that each half stanza must have

[3] As the sections on the bracteates, so these "words" are not always limited to the grammatical concept of a word.

The factor 7, which was so prominent in the stones of the older futhark, although present here in all three numbers, shows only random distribution in the stones studied by Brix, so that its appearance here is a matter of coincidence.

consisted of a total of 72 runes which is a multiple of 24. As 24 indicates the number of runes contained in the original futhark, he sees the magic power of the futhark at work in these stanzas. It appears that the rune scholars who at that time believed in numeric magic, invariably sought it in a rune count of 24, regardless of whether an inscription was based on the 24 letter older futhark or on the 16 letter younger futhark.[5]

Wolfgang Morgenroth, in his criticism of Olsen, points out another obvious flaw in the reasoning. Not only those stanzas dealing with magic, but all stanzas in dróttkvætt form could be brought to a letter count of 72 with very little touching up. Stanza 48 from Egils Saga, for example, which is cited on page 38 above, consists of two half stanzas of 77 and 70 letters. In reconstructing a supposed runic original, we would first of all need to drop the doubled consonants. Without any further changes, we arrive at a count of 74 and 70 runes, neither of which are too far removed from 72.

The examination of the rune count of the bracteates revealed a dominance of 8, not as a contributing factor to symbolic magic, but as a pattern for balance.[6] The choice of 8 may well have been occasioned by working with a futhark which was often divided into

[4] 1916; rpt. in Magnus Olsen, Norrøne Studier (Oslo: Aschehoug, 1938), pp.1-23. Reviewed by Wolfgang Morgenroth, "Zahlenmagie in Runeninschriften," pp. 278-281.

[5] This problem was already discussed in relation to the numeric structure of bracteates, pp. 87 and 91.

[6] Demonstrated pp. 88-91 above.

three ættir of eight runes each. If the futhark form of three sets of 8 runes had indeed held the sum of magical powers, we should be able to observe this pattern of 3x8 runes on more bracteates than just one, the Grumpan bracteate #3. Surely this pattern should not have been too difficult to produce.

If the number 24 did indeed gain magical implications in later times, this would have been due to a misunderstanding of the role of form. Succeeding generations were still aware of the use of magic but were probably unable to detect or understand the hidden gematria, and they may well have ascribed the magical powers to a certain form. A look at the Old High German incantations later on in this chapter will make such a development seem possible but not mandatory. The discussion in the previous chapter of this dissertation has tried to show that originally the intricacy of magic lay in the concealed gematria rather than in any surface structure where it could be easily recognized. After all, the power of a magic spell, although employed for man's service, is addressed to supernatural forces or beings whose help it elicits and whose harm it seeks to avert.

If the older futhark form, 3x8=24, had indeed been the vehicle of supreme magic power, as has been suggested, then with the development of the younger futhark, the new form, 6+5+5=16, should have superseded it. The newly created power should then have been transferred to the pattern of 6+5+5 or to inscriptions of 16 runes. The pattern of 6+5+5 runes simply cannot be found. The factor 16 does appear more often than expected, but so do all multiples of 4. In structures built on balance and symmetry, this is inevitable.

iii. The Disappearance of Numeric Magic

In judging symbolic numeric rune magic, scholars have tended to fall into two opposing camps. The enthusiasts, on the one hand, have tried to read magic into every scratch found on wood or stone. The doubters, on the other hand, have rejected these exaggerated efforts and refused to consider the matter further. In this day of calculators and computers there must be room for an intensive resourceful investigation which is willing to weigh the pros and cons and to judge the possibilities.

Indications are that with the loss of the 24 letter rune alphabet, the gematric equivalence also disappeared. With the trend toward longer inscriptions, the emphasis shifted from magical to narrative style. The intricate symbolism of gematria was replaced by a numeric form which is poetic rather than symbolic. The numbers employed in the poetic structure are chosen without regard to their original symbolic meaning. They are numbers which convey a balanced symmetrical design without regard to the context.

III. The Old High German Incantations

At the same time that the younger futhark was developed in Scandinavia, the larger area of the Germanic realm was changing over to the Roman alphabet. Among the oldest literary monuments in the new script are the magic incantations. Hauck has demonstrated their affinity with the bracteates.[7] If therefore numeric magic is to be found in any of the Old High German texts, the Zaubersprüche should be most likely to contain it.

i. Letter and Word Count

As the Roman alphabet did not establish a number-letter correspondence, it is not possible to find gematria in the incantations. Word divisions, as found in runic writing, are not in evidence in the incantations, as they were recorded in continuous script without word or line divisions. We have therefore no choice but to count the letters. After examining the letter count of every incantation, one can only conclude that no pattern or numeric preference exists. A count of syllables proves to be equally fruitless. As with the Danish stones in the younger futhark script, certain patterns exist which are necessitated by the poetic form, but these patterns vary from one poem to the next.

In his study, Runornas talmystik och dess antika förebild, in which he first introduced his theory of the original rune alphabet, Agrell also devotes one chapter (chapter 3) to an examination of incantations from the Old High German, the Anglo-Saxon, and the Old Norse. Even though these texts are not divided into words, Agrell bases all his calculations on word count. Probably these verses were divided into lines and sections when they were recorded in runes, but exactly how long each section was, has to remain a matter of guesswork, because rune sections do not necessarily correspond to word divisions. Certainly Agrell's word lengths do not always agree with those of other editors and may have been manipulated for a purpose. But even then his findings prove nothing,

[7] See Vadstena discussion, pp. 69-70.

because his resultant word counts only conform to random distribution of numbers.

Agrell seems determined to assemble as many multiples of 18 as possible, because 18 is symbolic of Odin, and the use of his number would render the incantation more powerful. Graph 5 on page 52 shows the factor 18 to be almost non-existent on amulets. If indeed it did occur with exceptional frequency at this later date, it would indicate a shift in symbolic emphasis away from the abstract benefits like health, wealth, and fertility to the concrete appeal to a certain god and the powers resident in him. But in spite of some manipulated word counts, the factor 18 only shows normal distribution. Agrell only makes it appear prominent by ignoring all other factors.

What we do find in the incantations, is the development of definite form, although this form varies from one example to the next. The use of poetic pattern is best illustrated by the Old High German incantation "Pro nessia":[8]

Gang uz, Nesso, mit niun nessinchilinon,
uz fonna marge in deo adra,
vonna den adrun in daz fleisk,
fonna demu fleiske in daz fel,
fonna demo velle in diz tulli.
Ter pater noster. Similit.

[8] According to Elias von Steinmeyer, ed., Die kleineren althochdeutschen Sprachdenkmäler, Texte des Mittelalters (1916; rpt. Berlin: Weidmann, 1963), p.374.

(a) The word count is arranged as follows:

$$\begin{array}{r} 3 + 3 = 6 \\ 6 + 6 = 12 \\ 6 + 6 = 12 \\ \hline 30 \end{array}$$

With the Christianized appendix of 3+1, the total is
$30 + (3+1) = 34$.

(b) The syllable count is:

$$\begin{array}{r} 4 + 7 = 11 \\ 10 + 8 = 18 \\ 9 + 10 = 19 \\ \hline 48 \end{array}$$

With the appendix, the total is
$48 + (5+3) = 56$.

(c) The letter count is:

$$\begin{array}{r} 11 + 21 = 32 \\ 20 + 24 = 44 \\ 24 + 24 = 48 \\ \hline 124 \end{array}$$

With the addition, the total comes to
$124 + (14+7) = 145$.

By comparing the above values, we can draw certain conclusions:

(a) In the word count, the factors 3 and 6 show unusually high frequency:

3 occurs $12 \times 3 \div 13 = 2.8$ times as often as expected.

6 occurs $8 \times 6 \div 13 = 3.7$ times as often as expected.

(b) In the syllable count, the distribution of factors is normal.

(c) In the letter count, multiples of 4 dominate:

4 occurs 8x 4÷13=2.5 times as often as expected.
8 occurs 5x 8÷13=3.1 times as often.
12 occurs 4x12÷13=3.7 times as often.
16 occurs 2x16÷13=2.5 times as often.
24 occurs 4x24÷13=3.7 times as often.

Surely no one would want to suggest that 4, 8, 12, 16, and 24 all have symbolic significance here. Possibly 24 does, but the high frequency of the other four numbers is directly attributable to the frequency of 24. It could be argued that a new belief had arisen which fallaciously ascribed the magic power to the number 24, when the original gematric magic was no longer understood, but again this supposition would eventually admit all poetic form to the category of symbolic magic.

The study of this one particular pattern could easily lead to the conclusion that 24 was a desired symbol in incantations. There is just one problem: This is the only example of such a pattern. Although other designs exist, they are much less obvious nor do they resemble this one. As in the Danish stones studied by Brix, the designs are dictated by a poetic form which strives for symmetry. Magic should not even enter the discussion.

ii. Symbolic Parallel Construction

The incantations use a type of numeric symbolism which is quite common in older literature such as the Bible, but is completely absent from the older runic

writing, simply because these inscriptions are too brief to make room for it. This symbolism becomes evident in the parallel constructions.

In the already quoted "Pro nessia," four phrases are paralleled:

> uz fonna marge in deo adra,
> vonna den adrun in daz fleisk,
> fonna demu fleiske in daz fel,
> fonna demo velle in diz tulli.

The number four has always symbolized creation or nature, and in some civilizations it has come to represent a natural healing process as opposed to the supernatural power invoked by the number thirteen.[9] The fourfold instruction in this verse may take advantage of this healing property of the number four. It could also simply be the result of the poetic form. Whether this construction is symbolic or poetic, it did not happen by accident, and it is underlined by the high frequency of 4 and its multiples 8, 12, 16, and 24 in the letter count.

A fourfold appeal, as in "Pro nessia," is quite rare, most constructions being based on a threefold pattern. An example is the "Erste Merseburger Zauberspruch":[10]

> Eiris sazun idisi, sazun hera duoder.
> suma hapt heptidun, suma heri lezidun,
> suma clubodun umbi cuoniouuidi:
> insprinc haptbandun, inuar uigandun!

[9] Four is discussed pp. 10-11 and thirteen pp. 59-60.

[10] Steinmeyer, p.365.

The occupations of the idisi are named in three groups:

suma hapt heptidun,
suma heri lezidun,
suma clubodun.

The idisi are supernatural beings, and a threefold grouping would impart to them godlike power on which the incantation relies.

A more definite example is the "Zweite Merseburger Zauberspruch":[10]

Phol ende Uuodan . . . . . uuorun zi holza.
du uuart demo Balderes uolon sin uuoz birenkit.
thu biguolen Sinhtgunt, . . Sunna era suister,
thu biguole Friia, ... Uolla era suister,
thu biguolen Uuodan, . . . so he uuold conda:
sose benrenki, ... sose bluotrenki,
sose lidirenki: . . . . .
ben zi bena, ... bluod zi bluoda,
lid zi geliden, ... sose gelimada sin!

The threefold divine power is invoked three times, making it doubly powerful (3^2). The first grouping names three gods engaged in the healing of Balder's horse:

thu biguolen Sinhtgunt . . .
thu biguolen Friia . . .
thu biguolen Uuodan . . .

Secondly, three possible injuries are listed:

sose benrenki,
sose bluotrenki,
sose lidirenki.

And thirdly, three healing processes are enumerated:

ben zi bena,
bluot zi bluoda,
lid zi geliden.

The seemingly misplaced "sose" halfline, "sose gelimada sin," appears to convert the other three "sose" phrases, describing sickness, to a fourfold design promising health. Whether this conversion was intentional, however, we will never know.

The ninefold construction may be more than just an intensification of the divine three. The ninth rune of the original alphabet — ᚾ — represented nauðr, meaning need, necessity, constraint, or "Schicksalszwang." It was applied as a "Begriffsrune" in order to force the hand of fate. The "niun nessinchilinon" of the "Pro nessia" likewise might be regarded as having the same function, but here, as in the few other cases where number words do occur in incantations, they are required to complete the alliteration of that line, and their symbolic agreement is probably incidental.

IV. The Use of Number in Magic Incantations

In comparing the use of number in the incantations with that of the Bible and the bracteates, the following conclusions can be drawn:

(a) Number words, which figured prominently in Biblical symbolism, are non-existent in the bracteate inscriptions and are very rare in incantations. Magic requires a less obvious application.

(b) The numeric structure in the Bible applied the same symbolism as the number words. In

[10] Steinmeyer, p. 365.

the bracteates, structure plays a minor role. Where it does occur, it has no symbolic function, but serves to give a form which would be almost poetic if it were not so short. The form of the incantations is sometimes symbolic but always poetic.

(c) The gematria was the most pronounced feature in the Bible and in the inscriptions based on the older futhark. In the incantations, it does not come into play, because the Latin script makes no allowance for it.

The older futhark gematria was capable of sufficient diversity to give specific meaning where it was desired. The memorial stones built their symbolism around the number 7, and the amulets made use of the specific meanings of 13, 17, 23, and 24. Such sophistication is unheard of in the later time period. The incantations display number symbolism only in their structures, and that symbolism, if it occurs at all, is of a simplicity which can be comprehended even by illiterate people who may be reciting these verses. Even if they had served no other purpose, the simple patterns must have been a welcome aid to the memory.

Magic had passed from the hands of skilled shamans to untrained people who only sensed vaguely the power inherent in numbers. Of all numbers, three was probably the best understood, because trinities of gods were known even to the common people from earliest times, and therefore three must have appeared as a safe number to use in magic symbolism. The exact connotation of a symbol like thirteen was never public knowledge, although its ties with magic were accepted as an established fact. If one could not with certainty predict the effects which the application of thir-

teen would have, it was best avoided completely in order to prevent such disastrous results as that of the supposed healing charm in Egils Saga (see p. 38 above). No wonder that thirteen has been regarded with awe to this day!

V. Medieval German Literature

> But thou hast ordered all things
> in measure and number and weight.
> Wisd. 11:20

The search for form dominates medieval poetry and reaches its apex in the rigidly structured medieval epics. The abundance of secondary literature on the subject demonstrates the fascination which these numeric compositions have held for scholars since the beginning of the nineteenth century.[11] Many of these scholars are content to point out the frame on which the poetry is based, but a few of them attempt to show the significance of the numbers employed.

One of the latter is Fritz Tschirch.[12] He has collected many examples pointing to intended application of significant numbers, which he labels "Schlüsselzahlen." One such example is the frequent use of

[11] A well organized compilation of the secondary literature appears in the bibliography of E. Hellgardt, Zum Problem symbolbestimmter und formalästhetischer Zahlenkomposition in mittelalterlicher Literatur (München: Beck, 1973), pp. 316-351.

[12] His previously published essays are collected under the title "Figurale Komposition in mittelalterlicher deutscher Dichtung," the third section of Fritz Tschirch, Spiegelungen (Berlin: Schmidt, 1966), pp. 167-276.

33 and 34. Since Jesus was 33 years old at the time of his death and resurrection, he completed the work of redemption in his 34th year, and therefore these two numbers came to symbolize salvation. The 33 was already a preferred number in earlier Christian poetry:[13]

> Der Bischof von Poitiers Venantius Fortunatus hat um 600 ein höchst kunstvolles (für moderne Kunstauffassung bis zum Überdruß verkünsteltes) quadratisches Figurengedicht Ad Syagrium episcopum Augustodunensem verfaßt, das aus 33 Verszeilen zu je 33 Buchstaben besteht.

The following are some of the examples in German medieval poetry to which Tschirch refers:[14]

- The Heliand Präfatio measures 34 hexameters, and the Savior's death is mentioned in lines 33 and 34. In the 33rd fitte, John the Baptist is beheaded in prefiguration of the crucifixion, which occurs in the 66th (2x33).
- Otfrid von Weißenburg relates the death of Jesus in th 33rd chapter of book IV of his harmony of the gospels.
- At the height of the crusades, the hymns contained 3 stanzas of 11 verses each, bringing the total number of verses to 33.
- The Ackermann aus Böhmen is divided into 34 chapters, and the 34th is a prayer for the

[13] Tschirch, pp. 178-179.

[14] In "33/34 als Symbolzahlen Christi in Leben, Literatur und Kunst des Mittelalters," pp. 167-187; and "Schlüsselzahlen," pp. 188-211.

> salvation of the author's deceased wife. This prayer is modeled on the Lord's Prayer and is therefore divided into 7 petitions. Furthermore, 7 is the sum of the digits of 34.[15]

Tschirch points out the frequent use of the 34 line introduction, like that of the Heliand. In many of these prefaces the author shows concern for the salvation of his own soul and asks for his listeners' prayers.[16] Tschirch feels that the author places the symbolic 34 at the opening of his work for the same purpose for which stone cutters carved above entrances "allerlei magische Zeichen und abschreckend häßliche Fratzen in Menschen- und Tiergestalt,"[17] namely to ban demons from the place. The more obvious reason for the choice of the 34 line preface, of course, is "die religiöse Devotion, den frommen Kniefall des Dichters vor dem Allerheiligsten am Beginn seines Tuns, das letztlich Gott geweiht war und blieb, zum Ausdruck [zu] bringen."[18]

If the 34 was indeed to ward off evil spirits, then it has certainly stepped out of its Christian framework into the realm of magic spells, and its significance might be compared with that of the 23 in bracteate inscriptions.[19] In that case, the poet applied the 34 in the same manner in which the common people had been using the 3, which they associated with the Trinity.

[15] This play on numbers was common practice. See Johannes Rathofer, Der Heliand — Theologischer Sinn als tektonische Form (Köln/Graz, 1962), pp. 334-335.

[16] Tschirch, pp. 184-185, [17] p. 186, [18] p. 187.

[19] Cf. pp. 67, 72, 79, and 83 above.

That the use of the divine three was deliberate can be recognized in the embellishments surrounding the blessings and incantations. For example:

— The "Weingarter Reisesegen"[20] is prefaced by the formula:

† In nomine † patris † et filii † et spiritus † sancti †

The invocation of the Trinity lends validity to the blessing which follows and is intensified by the sign of the cross which is made 6 times (2x3) during the chanting.

A symbolic 3 at the closing seems to have been even more popular. For example:

— "Pro nessia" ends in the instruction "Ter pater noster," giving us an indication of how heathen charms were brought up to medieval Christian standards.

— The "Trierer Blutsegen"[21] makes doubly sure of divine blessing by adding: "Amen Ter. Pater Noster Ter."

The popular application of the symbolic 3 appears in an easily recognizable form, whereas the poetic use of the 34 was definitely not obvious and might almost be compared to the hidden gematria of antiquity and of runic inscriptions.

> Der Verfasser . . . stellt diese Schlüsselzahl vielmehr allein Gott vor Augen . . . Er läßt in der Schlüsselzahl . . . das Göttliche

[20] Steinmeyer, p. 397.

[21] Steinmeyer, p. 378.

> im Irdischen durchscheinen, . . . wenn er durch die Einbeziehung heiliger Zahlen sein irdisches Werk mit der Unvergänglichkeit des ewigen Gottes verknüpft. [22]

In other words, by designing his work in a framework of sacred numbers, the poet dedicates his work to God, who has created all things "in measure and number and weight" (Wisd. 11:20).

The many examples which Tschirch enumerates may all display a structure based on 34, but not all deal with the subject of salvation. The connection between the numeric symbolism and the "Inhalt des Textes mag mehr oder weniger eng sein, kann sogar ganz fehlen,"[23] but certainly the numeric literary structures testify to medieval man's striving "jede Form als zahlhaft zu begreifen."[24] The intricate designs which have been uncovered in the medieval epics, written at the height of the Middle Ages, may be considered as a culmination of this striving for form, balance, and harmony. This type of numeric intricacy has long been taken for granted in the design of Gothic cathedrals, but only now are we discovering it in the literature of the same era.

Tschirch's view, namely that the structure of the poetry is solely directed toward the attention of God, does not wholly stand up to the light of historical evidence. It is true that gematria had been handed down through centuries as secret knowledge, but at the same time the understanding of simple associations of numbers and their qualitative meanings had been made

[22] Tschirch, pp. 202-203.

[23] Hellgardt, Zum Problem . . . , p. 262.

available to anyone willing to learn by various groups of teachers such as the Pythagoreans, the Gnostics, and the Church Fathers. Whereas the cultic practice of gematria was passed on only from the teacher to his disciple, from the priest to his successor, the insights into number associations were laid down in written treatises and letters and even preached from the pulpit. "Es ergibt sich aus den Stellensammlungen augustinischer Zahlendeutungen, . . . daß der eigentliche Ort der Zahlenexegese in der Predigt ist."[25] The entire system of medieval theological interpretation was based on the traditions handed down from the Church Fathers, and St. Augustine was regarded as the authority on number exegesis. His views and practices were considered sacred and worthy of emulation. In contrast to the shamans who did not divulge the secrets of their magic practices, medieval poets took pride in explaining the reasoning behind the framework in which their work was enclosed. Where this framework was an acrostic, it was often made apparent by large decorated letters. Where it was a symbolic number, the stanzas were at times numbered so as to leave no doubt about the author's intentions. This is the case in the Ackermann aus Böhmen.[26] Otfrid explains his choice of the number 5 for the organization of his Evangelienharmonie in a letter to Bishop Liutbert:

> Hos [libros], ut dixi, in quinque, quamvis evangeliorum libri quatuor sint, ideo dis-

[24] Hellgardt, p. 260.

[25] Hellgardt, p. 271.

[26] See Tschirch, p. 197.

> tinxi, quia eorum quadrata aequalitas sancta nostrorum quinque sensuum inaequalitatem ornat, et superflua in nobis quaeque non solum actum, verum etiam cogitationum vertunt in elevationem caelestium.[27]

Admittedly, some of the works written at the height of the Middle Ages exhibit such an interweaving of designs that only the well educated minority would have been able to perceive it, and then only if it were explained to them. The reason for these lofty artistic endeavors need not lie in the poet's attempt at obscuring the design. He may simply have been overwhelmed by the vastness of possibilities open to him and been unable to resist the understandable urge to incorporate them all in his one work. Like the mathematics teacher who avers that it was never his intention to talk above the heads of his students, that he simply got carried away, it may well be that the author of an epic became so engrossed by his medium that he almost lost sight of his audience. Since medieval man envisioned the universe as arranged "in measure and number and weight," the artist modeled his work on the same basis, and he expected it to be judged by the same criteria as the universe either by his audience, or by his peers, or by God.

[27] O. Erdmann, ed., Otfrids Evangelienbuch (Tübingen: Niemeyer, 1962), p. 5, lines 46-51. Quoted by Heinz Klingenberg, "Zum Grundriß der ahd. Evangeliendichtung Otfrids," Zeitschrift für deutsches Altertum und deutsche Literatur, 99 (1970), p. 35.

CONCLUSION

> What the modern mind denominates . . . as "symbol" was often . . . the result of an inevitable association of ideas.[1]

In Hebrew, the meaning of a number was equivalent to what we now designate as its symbolic meaning, because in Hebrew the number word expresses the qualities inherent in the symbol.[2] As we leave the Semitic languages, this equivalence of ideas disappears and is gradually replaced by an association of ideas such as we encounter in the Middle Ages. This association of a number with a certain meaning was not necessarily common knowledge. Certain simple correlations were understood intuitively by men since the dawn of civilization, but certain codes, such as the involved system of gematria, which we have studied in the context of runic inscriptions, were not comprehended by the illiterate masses, and even of those who were literate, only a few may have been initiated into its hidden implications.

In the Christian tradition, however, symbolic meanings of numbers were deliberately explained. Augustine considered the interpretation of numbers a helpful tool in the understanding of Scripture and of a universe patterned on order. Likewise poets have

[1] V. F. Hopper, Medieval Number Symbolism, p. vii.

[2] See p. 1 above.

been employing the universal principles of design to give validity and beauty to their creations.

In the Bible we saw number inseparably linked with the meaning of the word. In bracteate inscriptions, the correlation between word and number was negligible and at times nonexistent. Number served the purpose of magic and not of communication. Of that period in the development of number symbolism, only faint images have remained in magic spells and incantations and in popular superstitious practices which have survived under Christian whitewash. In the later runic inscriptions based on the younger futhark, the emphasis had shifted from magical symbolism to structural design. In the Middle Ages, under the auspices of the church, an attempt was made to apply the number symbolism of the Bible to works in the German language, but here, too, as in the runic inscriptions, the emphasis was gradually moved away from the meaning of the numbers to the beauty of design. Where originally, as in the Semitic languages, number carried a message which was universally understood, the numerical design of the Middle Ages became so complex that, like the gematria of the pagan age, it could be understood only by those who possessed the key to its interpretation.

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