

5. Some Retrospective Observations

Unit of Measure

Search for the unit of measure in various works of early Insular art—manuscript illuminations, Irish high crosses, ornamental metalwork—has not made much progress. It has seldom been undertaken in high cross design and metalwork. In the case of manuscript illumination, it has been misled by forced correlations with text-space dimensions which, again and again, can be demonstrated to be unrelated to the measures and ratios of the artwork. In the case of poem forms the presence of a metrical unit (the ‘line’), not to mention romantic notions of organic form, short-circuited any attempts to find the unit of measure for whole texts.

The situation in the study of this art is unlike the situation in the study of mensuration at large in the middle ages. For the latter there is a long, rich, and still unconcluded tradition of historical study. The metrology emerging from land survey, architecture, and trade, though, has not yet been shown to be helpful in analysis of Insular art. I think it is unlikely to be very helpful because of two major differences in the things to be measured. One is scale. The other is differences in their essential natures.

When measuring is undertaken to determine quantity in terms that can be communicated in numerals, spoken or written, a unit of measure is mandatory, and it must be recognised by anyone with an interest in knowing what that quantity is. Silver is measured in units of weight, cloth in units of length (on a bolt of constant width), grain in units of volume, land in units of area (usually square). In this kind of measuring, each quantity is determined separately from all others. Two dimensions of an object may be equals, doubles, fifths, seventeenths, cube roots—but such relational measures are not part of measuring of this kind. The ‘value’ of any measure, that is, consists of its relation to a measure (the unit) that exists entirely independent of any other measurement of the object being described in quantitative terms. This is the case even when terms within a system of measure may be related by geometrical or numerical ratio, either one. In short, measuring of this kind relates quantities of silver or woolen cloth or barley or plowland to an external intrinsically unrelated system of expressing quantity. The measuring serves social functions of trading,

selling, taxing, and the like.

When measuring is undertaken in the creating of design, nothing external to the undertaking is relevant. The overall size may have been set by reference to an external unit of measure: 'Make it 12 grains in diameter,' or 'Make it 27 palms high.' From that point on, the design need not make further use of the unit of measure unless it is conceived in modular terms of that measure (such as 13×18). Even so, a modular plan can make a number of equal divisions such that the resulting units do not correspond to recognised subdivisions of the external unit of measure. Most often in Insular art the plans are not modular, as we have seen, and the measures within the design—many of them not expressible in integers in any case—are all in relation one to another and the given measure from which they have been derived. Most will have little possibility of corresponding to recognised subdivisions of the external unit of measure. With all this, there can be no social function such as exchange or tithing served by any of the measuring that goes on in the creation of the design.

Mistaken identifications of the unit of measure have been made, for example, when regular divisions appear in the surface plan or in the construction of a design. One is the ostensible 'grid of squares' in the central rectangle of the carpet page standing at the beginning of *The Book of Durrow*; another is the supposed square grid underlying the ostensibly square cross at the center of *Lindisfarne Gospels* fol. 138v; the grid pattern at the center of the back cover of the *St. Cuthbert Gospel* of *St. John* is yet another. In each instance, if the grid units were in fact square, the shapes of the designs would be different. The unit of measure in these three designs differs along the horizontal and the vertical axes of the grids. There is no explaining away these differences by calling them 'minor,' while trying to maintain the position that there is a single unit measure for the whole plan. Worse still is to invoke fractions. Too often the differences have not even been noticed. The fact is that the plans of these designs were not constructed according to a grid based on a single unit of measure (13×17 or 11×15 or whatever), but were made instead from geometrical derivations involving irrational numbers. A rectangular area thus derived was *then* divided into integral numbers of segments to set a grid for the design: the horizontal extension of the area was divided into units of one

size, the vertical extension into units of a different size. The units of measure, that is, have no independent status; they are limited in domain, resulting from dividing a portion of a particular plan.

There are examples that involve entire designs constructed according to grids whose units on both (or all) dimensions are the same. These stand to scrutiny in a few instances such as the Book of Durrow evangelist symbol page for St. Matthew's gospel (7×4), or for the carpet cross-page preceding St. John's Gospel in the Lindisfarne Gospels (15×19). They are relatively rare in the manuscript illuminations, at least.

The long poems in Old English illustrate a different aspect of the question of unit measure. The texts are written in metrical lines, about which there is no question or debate. Rules of the meter may still be a topic of passionate argument from time to time, but these concern the internal structure of the metrical line. The identity of the line is agreed on universally. But that is hardly the unit for constructing the forms of long poems which run into hundreds or many hundreds of lines. There is in fact no larger unit such as a stanza—four lines, seven lines, nine lines, fifteen lines—to be found in the forms of any of the poems extant. On the contrary, it is rare to find the same number of metrical lines in any two divisions of a single poetic text. There are several instances of the count of lines in a manuscript division of text being a prime number. So no one even claims a unit of measure in the design, or form, of English vernacular verse at this time.

The reason that a large unit of measure (beyond the metrical line) is not found in verse texts, and the reason that a single unit of measure is illusory in so many manuscript illuminations and other artefacts, is that the thorough forms of many of these works can be shown to have been created without them—and thus obviously without need of them. They were in fact created in a way entirely independent of them. (Ironically, modular groupings of sections of poems had been overlooked until work began on the coherent designs in Insular bookarts—the recurrent line sums of 600 in *Andreas*, of multiples of 84 in *Phoenix*, for example.)

Why should an architect—whatever the medium of his creation—use a small-unit measure in constructing a design? The dimensions of a design may set units of interlace or grille or step pattern, or they may set the size of parts

of a church, or set a frame and its parts enclosing an illumination. And so on. A fixed unit has its use in keeping consistency—in controlling the fit—among parts of a design which is constructed in multiples, that is to say, made up in measures understood by counting (bricks, tiles, panels, columns, and such). In a regular design, one that is laid out by a ruler, the fixed unit is the basis of the plan.

When it comes time to lay out the plan, the question that must be answered first is ‘What size?’ or ‘How big?’ or some other variant of the query concerning overall extension. If the question is answered with ‘ n units high, or long, or wide,’ then the design probably will be modular— 5×8 , 15×21 , 8×18 . Commonly there will be a single module, a simple unit of measure if the units are used in all the dimensions. Public buildings and land grants call for this kind of determination. If the question is answered with ‘This big,’ or ‘As wide as X,’ or the like, then the design does not need a ruler, and a measuring scale (a ruler) may be more hindrance than help unless ‘this big’ happens to coincide with unit measures of the ruler. On the small scale of carpet pages and especially of fine metalwork, modular subdivision will probably not correspond to sub-units of a customary measure, and will limit severely the ingenuity of design.

Of course, a plan can usefully be described, for comparative purposes by its measure according to a standard scale—130 mm high, for example, 87 mm in diameter, or 1.23 m across.

A (fixed) unit of measure in fact is unneeded in creating a plan that begins with a given magnitude. Put another way, a unit of measure is not part of the concept when ‘What size?’ is expressed as magnitude extension that is determined first, which is to say, is the ‘given’. It *is* the unit (or its double), and as the given measure has no need to be defined by reference to some independent system of measuring. The given is usually the width of text-space in an elegant manuscript (which is not measured in units smaller than itself), or the overall diameter of the ring of a sculptured cross, or the diameter of a circular brooch, or the full length of a verse composition. In any of these media, if the overall size is the starting point, if that size is selected as an extension to be divided, then it is beside the point to conceive the dimensions as a count of units of some independent fixed measure. There is no way to count up to one.