

would seem to provide a provisional “yes, these different groups of signs refer to the same ‘person.’”

To Robert W. Witt’s queries, I can only answer the following: (1) Though other characters propose the prologues and explanations for the Mechanicals’ play, it is Bottom who sponsors them most vehemently, and who acts out for us most extensively the consequences of such sponsorship. (2) Snout and Quince are indeed victimized when they run in terror from the metamorphosed Bottom, and Quince also suffers an inability to get past the literal, step-by-step sequence of words in his reading of his prologue. As for Theseus and Hippolyta, they can see the play of Pyramus and Thisbe as nothing “but shadows,” and if “imagination” is to “amend them,” then as Hippolyta says, “It must be your imagination then, and not theirs.” An imagination, I might add, that they are most unwilling to bring to bear. Theseus, far from being “the one who is most willing to accept the story of the lovers, as well as the play, as metaphor,” in this passage actually discounts the play, reducing it to its literal dimension as mere “shadows.” In short, Theseus’ and Hippolyta’s literalism condemns them to suffer the complacent fiction of their one-dimensional sense of self: their inability to participate either in the preceding night’s dreams or in the doggerel before them.

MICHAEL MCCANLES
Marquette University

Measure and Symmetry in Literature

To the Editor:

I am writing to commend R. G. Peterson’s article, “Critical Calculations: Measure and Symmetry in Literature” (*PMLA*, 91, 1976, 367–75). It is a broad yet cogent survey of what has rapidly become a major industry in our profession. However, since Peterson misappropriates my recent book, *Touches of Sweet Harmony*, which he cites on page 371, I wish to modify the impression he gives of it.

Peterson says that in my study “there is offered no more direct a justification for large-scale use of number and pattern in literature than Thomas Campion (in 1602) making ‘the point that a poem must reiterate the universal harmony by means of poetic meter.’” I feel aggrieved by such a reductive conclusion. The last hundred pages of my book are largely an elaboration of a passage in Sidney’s *Defence of Poesie* (1595), which I must quote here for the sake of explicitness. Early in that most seminal of Elizabethan critical treatises, Sidney defines “poet” in terms of its etymology from the Greek word *ποιεῖν* and designates him “a maker.” Then shortly after comes this loaded assertion:

Give right honor to the heavenly maker of that maker, who having made man to his owne likenes, set him beyond and over all the workes of that second nature [i.e., the creation], which in nothing he sheweth so much as in Poetry; when with the force of a divine breath, he bringeth things fourth surpassing her [nature’s] doings. (C1)

Sidney’s meaning, it seems to me, is unequivocal. God created man in His likeness and made him lord of creation; and nowhere does man demonstrate this doctrine more directly than in the composition of poetry, when he imitates the method and contents of God’s creation.

We need only recall the ubiquitous sentence, a commonplace in both the theology and science of the period, that God created the universe according to number, weight, and measure, and we have an unmistakable poetics which expects a poem to reflect the patterned order of a divinely ordained cosmos. We then can substantiate this poetics by pointing to Spenser’s *Shepherdes Calender* and *Epithalamion* as obvious examples. Of course, Sidney is not suggesting that the poet employ complicated and arcane number symbolism, but merely that he repeat the simple patterns evident in nature, such as the two-part system of day-night, the four-part system of the seasons, the twelve-part system of the year, or the eight-part system of the diapason (which obtains in the music of the spheres, even though we cannot hear it).

Since my book is not likely to have come into Peterson’s hands until his article was completed, or nearly so, his vagary can be assigned to nothing more sinister than a lack of time for assimilating my argument. I do think it imperative, though, to keep clearly in view the theoretical basis for any analysis of design in literature, and therefore I want to rectify Peterson’s comment and reaffirm my findings.

S. K. HENINGER, JR.
University of British Columbia

To the Editor:

By attempting to assume a middle position on the highly controversial topic of numerical composition, R. G. Peterson’s cautiously worded article risks wrath from partisans on both sides. Since I am in accord with what I understand to be Peterson’s moderate position, my disagreements are meant to be constructive and ultimately supportive.

At issue are five of the theses Peterson treats: (1) There is compelling evidence that some major poets in our (Western) literary heritage used numerical patterns as one way of ordering the parts of their poems; these often involve concentric symmetry. (2) No specific theoretical treatments of this aspect of literary structure have come down to us, but surviving texts touching numerical structure and symmetry may

be mediately relevant to poetry by analogy from Pythagorean modes of thinking about the other arts, nature, or the universe. (3) Distinction should be made between “number symbolism,” which stresses the “properties and manipulations of the numbers themselves” (p. 372), and structural patterns, which focus attention “on the work” (p. 372). (4) Patterns involving number should be judged on the immediacy and self-evidence of their “esthetic impact” (p. 374, et passim) and the extent to which they are “in harmony” (p. 373) with our expectations about the work, its author, and its cultural ambience. (5) As to methodology, analyses based on content are easier to accept than those based on “purely formal elements” (p. 371).

(1) Peterson cites several seminal studies of numerical structuring in Greek, Roman, and Renaissance English works, although even here his list is highly selective. Most of the scholars cited are from England or North America. The resulting gaps—medieval literature (beyond the showpiece Dante) and continental European scholarship—are surprising because the original of the book by Curtius (1948), which Peterson cites among pioneers in the field, inspired many studies in Europe, mostly on medieval German literature. From this research too the results are mixed, but there are enough firm findings to show that some medieval poets—and for the most part precisely those who have been valued all along for their other poetic virtues—saw in numerical designs either an essential quality of their art or an expedient of their craft, or both. Fortunately, three detailed surveys of this scholarship have been published by Horst Schümann (1968), Michael S. Batts (1969), and Ernst Hellgardt (1973). The most recent is a book-length undertaking: *Zum Problem symbolbestimmter und formalästhetischer Zahlenkomposition in mittelalterlicher Literatur: Mit Studien zum Quadrivium und zur Vorgeschichte des mittelalterlichen Zahlendenkens* (Munich: Beck, 1973). Hellgardt’s topical, fifty-page bibliography, though selective on antiquity and the Renaissance, is nearly comprehensive for the centuries and languages Peterson does not mention.

(2) The lack of explicitly mathematical lore in Western poetic theory is perhaps regrettable, but no more an obstacle to literary study than the early theorists’ silence on most other aspects of composition that go beyond prosodies, rhetorical figures, and commonplace distinctions of *invocatio* and *narratio*. Peterson observes that “ancient literary criticism is shot through with the analogy to painting” (p. 369) and infers that quantitative principles native to painting were therefore probably often applied to the written and spoken arts. An example deserving study on both counts is Horace’s remarkable blend of theory and poetry, the *Ars Poetica*. Not only does its treatment of literary art begin by juxtaposing painting and poetry,

painter and poet, but its text structure is shaped by the Golden Section ratio so prevalent in Greek and Roman Art and architecture. As George Duckworth showed (1962, p. 76; cf. Peterson’s n. 6), Horace divided the text into two fundamental parts such that the smaller is proportionate to the larger as the larger is to the whole. The larger section, the one on poetry proper, has 294 lines (1–294), while the remainder, concerning poet and critic, spans 182 lines (295–476): $182 \div 294 = 294 \div 476 = .618$, the celebrated *sectio aurea*. The very presence of this consciously numerical element in the poem—widely held to be the culmination of the vast Hellenistic literature on poetic theory which has meanwhile been totally lost—should make us both more aware of the limits of arguing *ex silentio* and more receptive to the analogical case Peterson advocates.

(3) The distinction between number as symbol and number as structural scaffold is of analytical value, although some poets might have viewed such a distinction as artificial, even slightly heretical. As Peterson rightly stresses: “number symbols and structural patterns . . . may both be present and related, but they also may not” (p. 373). I would add to this a methodological suggestion: that analysis of possible numerical structure generally go first. Symbolism, numerical or otherwise, is typically hard to *verify*, text structure (numerical or otherwise!) less so.

(4) The criterion of self-evidence or immediate “esthetic impact” is appealing, but holds little hope of being satisfied in practice. One must ask realistically: How many of the major poets we esteem for other aspects of structure have typically preferred unity in simplicity over unity in *complexity*? The “impact” of the cosmology in Spenser’s *Epithalamion* (Peterson’s keynote case) or of the structural symbolism discovered in several of Bach’s works is necessarily a function of the perceiver’s capacity for that impact. Peterson’s own apparent preference for bilateral symmetry, clearly “significant” (p. 370) centers, and other “large-scale effects” (p. 372) over what he calls “arcane . . . arithmetical relationships” (p. 372) should hardly be imposed a priori on all past poets, however salutary it may prove as a caution to overzealous critics. Our ignorance on this subject has only begun to recede. Preconceptions cannot be eliminated, but they need not be encouraged.

(5) Analyzing from content rather than from form may seem a reasonable way to proceed, in both time and priority of proof. Paradoxically, the research experience of the past twenty-five years has taught us that the opposite course is, in most instances, more reliable. Two reasons stand out in hindsight: Formal divisions (lines, stanzas, cantos, books, etc.) characteristically provide a direct link to the poet and challenge specific explanation relative to more abstract levels of structure; groupings of content (setting, character,

plot, theme, etc.) tend to vary from one critic to the next in both placement and weighting. Since any but the most rudimentary of suspected numerical patterns would hardly have structural value unless somehow intended by the poet—typically, one expects, by dint of rather unrhapsodical computation—textual evidence of the poet’s “intentions” will probably prove more crucial in identifying a poem’s numerical design than has been our experience with the structural features traditionally studied. Closer attention to such (more objectively verifiable) evidence, especially the *formal* clues the poet left behind, may help future research avoid some of the excesses which have marred the fledgling years of this promising but exacting new field of literary scholarship.

THOMAS ELWOOD HART
Syracuse University

To the Editor:

I would like to comment on R. G. Peterson’s article. How is it possible for a discussion of such topics as “concentric structure,” “chiasm,” “symmetry,” etc. to ignore the numerous structuralist and semiotic investigations into these very topics? Jakobson’s path-breaking papers, which were required reading when I was a graduate student in Slavic studies, deserve at least some acknowledgment. Riffaterre’s disagreement with Jakobson on the relevance of numerical calculations and structural symmetries is notorious. Herman Weyl’s classic treatise on symmetry is fundamental reading for anyone who is interested in the subject and implicitly refutes Peterson’s excessively narrow idea that “the only possible expression of symmetry is in relation to a center” (p. 370). I venture also to mention my own paper on automorphic structures which proposes a classification of the symmetries and anti-symmetries and offers a psychological interpretation of symmetrical structures in poetry.

DANIEL LAFERRIÈRE
Tufts University

Mr. Peterson replies:

Although these letters raise a variety of important questions, Laferrière and Hart mention works I might have included. The bibliography of so large and imperfectly defined a subject is of alarming size and shape. Where are its limits? What use of measure and symmetry would qualify for inclusion? What would not? I tried to describe—within the limits of my own interests and abilities, no less than the general expectation that *PMLA* will contain something in addition to footnotes—a large subject, and I thank these writers (as well as

many who wrote me personally) for information about relevant studies.

More fundamental in Laferrière’s letter is his attempt to force my article into conflict with Hermann Weyl’s classic *Symmetry* (Princeton: Princeton Univ. Press, 1952). I can avoid that simply by quoting the part of my sentence Laferrière has omitted: “Because the work of literature is apprehended in time. . . .” My idea would be “excessively narrow” if it were as he claims, but it referred to *literature*—to which symmetry is applied by metaphor—and not to geometry, mathematics, nature, and the visual arts (the subjects of Weyl’s book). Why this must be so becomes obvious on a moment’s reflection or a reference to Lessing’s *Laocoön*.

It was possible and necessary for me “to ignore” structuralism and semiotics. Their object, after all, is to study not measure and symmetry but the processes of communication. Of the many “systems” and “structures” discussed (see, e.g., Riffaterre’s criticism of Jakobson and Lévi-Strauss, *Yale French Studies*, 36–37, 1966, 200–42), a few are concentric, but that, like number symbolism, is really incidental to these disciplines, as well as to the arguments made by their critics. A serious difficulty arises, moreover, when we talk about “structuralism” in literature, and that Laferrière writes as he does suggests that I should have emphasized it. The concept involves us in a visual metaphor and the risk of analyzing characteristics not of the work but of the metaphor, of treating the literary work, made up of sequential elements, as if it were something visible, made up of coexisting elements. It is, of course, possible mentally to see a poem or novel in retrospect—and this (what we do when we diagram structure or describe a work as “concentric”) has utility for analysis and teaching—but we should not mistake the poem or novel thus recollected for the original, nor the recollection for the sequential esthetic experience.

I accept Hart’s “methodological suggestion” that analysis begin with number. This is consistent with the sequential quality of literature and may help avoid distortion of the work to make it fit some visual metaphor. I agree in general with his comments on the fourth and fifth theses, though I think number symbolism should have some connection with manifest content and esthetic ambience. Observation that a modern poem, e.g., has 100 lines should include more than the reminder that 100 has long been a significant number, if we are not to be given a critical truth that is both trivial and esthetically irrelevant. Even though “esthetic impact” is hard to satisfy in practice, it is not impossible. Each of us can think of a few cases where criticism has renewed or intensified esthetic responses.

Hart and Heninger speak about the warrant we can