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'One and One are One'… and Two: An Inquiry into Dickinson's Use of Mathematical Signs

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In *The Dickinson Sublime*, Gary Lee Stonum notes,

> Mathematics occupies a distinctive place in Dickinson's work. Roughly two hundred of Dickinson's poems include some ref erence to mathematical terms and ideas, often in a precise and pointed way, and a number of others often implicitly depend on counting, measuring, and quantitatively assessing (133).

Stonum applies this observation to Dickinson's poems which include verbal references to mathematics in an attempt to uncover the meanings behind some of Dickinson's mathematically-oriented ideas, such as "ratio," "sum," or the geometrical "circumference" (133). Though Stonum's reading is insightful and valuable, it anticipates a more complete treatment of Dickinson's poems in their relation to mathematics, for, though Stonum notes that verbal reference to mathematics occurs in approximately two hundred of Dickinson's poems, verbal reference is not Dickinson's only reference to mathematics. Dickinson also makes *visual* reference to mathematics; Dickinson employs the signs of mathematics in her poems, including poems which do not make overt, verbal reference to mathematics. In the fascicles, besides the letters of the alphabet, the main signs Dickinson employs are mathematical. She uses minus signs (her dashes) to separate and join parts of sentences, plus signs to signal variants, and the line which concludes a list of numbers in a mathematics problem to separate and, perhaps, join poems.

If Dickinson is employing the signs of mathematics to construct the text of her poetry, mathematics would have more fundamental and far–reaching

effects on her poems than critics have thus far suspected.[1] This essay will take three steps to suggest the fuller mathematical inquiry operating in Dickinson's poems. First, the case will be made that in creating her fascicles Dickinson intentionally employs the signs of mathematics. Second, it will be shown that Dickinson seems to use the signs of mathematics in order to signify a constant critique of certain metaphysical claims prevalent in her lifetime. Third, a brief assessment will be given of the ways in which Dickinson's use of mathematical signs might effect further readings.

Emily Dickinson was familiar with the conventional symbols of mathematics, the minus and plus signs, and the summation line. Consider the following mathematical problems, excerpted from Jeremiah Day's *An Introduction to Algebra*:

$$\begin{array}{l} +\ 6b \\ \underline{-\ 4b} \\ +\ 2b \quad (31) \end{array} \qquad \begin{array}{l} 3bc - 6d + 2b - 3y \\ -\ 3bc - 3d \qquad\quad +\ \ x + bg \\ \underline{\qquad 2d \qquad + y + 3x \qquad + b} \\ \qquad -\ 7d + 2b - 2y + 4x + bg + b \quad (33). \end{array}$$

All of these basic arithmetic signs are present in Day's textbook, a textbook used, as Jack Lee Capps notes in *Emily Dickinson's Reading, 1836–1886*, during the time of Dickinson's study at Mount Holyoke (190). A glance at Dickinson's poems shows that all of these signs also are present in her work, and a consideration of the use of these signs suggests that they may be more than arbitrary or idiosyncratic forms of punctuation. Although Dickinson's use of the dash may be attributed to an allowable, though eccentric, use of punctuation and although her use of the line to mark the end of poems may be attributed to a rough approximation of printing conventions common in her day, Dickinson could have used any other sign besides the plus sign to mark her variants. This point becomes even more significant when one considers that Dickinson uses basically one sign, the plus sign, to note multiple variants. That is, Dickinson could have used multiple signifiers for her variants, and, in so doing, she could have greatly clarified and quickened the reading process, especially in poems which end with large clusters of variants. Of course, Dickinson did not choose multiple variant-signifiers. Dickinson chose a single variant-signifier that resembles a plus sign, and with that choice, Dickinson chose difficulty; investigation, searching, and choosing may be precisely what Dickinson is trying to evoke with her mathematical signs.

Employing a visual representation of mathematical signs in the construction of her poems is an activity similar to some of Dickinson's other methods

of construction. Dickinson might have been inclined to use those signs in her poetry as, according to some recent criticism, she often used visual effects and referents in her poems. Following the insights of Susan Dickinson, "Dickinson's most constant audience," Martha Nell Smith argues for "the importance of drawings and cartooning paste–ups to [Dickinson's] artistic objectives" (225). Although, according to Smith, the practice of cut–and–paste productions, including "handmade greeting cards" and "scrapbooks," was common during Dickinson's era, Dickinson's practice was uncommon; unlike those who turned to "shopping catalogues and popular magazines" for their material, Dickinson "turned to her Bible, her *New England Primer*, and her father's Dickens, texts considered to be . . . sacred . . ." (227-8). For Smith, using these "sacred" sources as material for collage–poems is not only irreverent but seems to signify "transformations, opportunities for Emily Dickinson and her readers to exert control over expression by remaking supposedly fixed utterances and thereby challenge conventional authorities in a constructive way" (228).

Dickinson, who was, as Cynthia Griffin Wolff notes, "fascinated with mathematics" (194), may have decided to use mathematical signs in the construction of her poems largely because, during her lifetime, mathematical signs also were considered a part of a "sacred" text and thus also subject to a refiguring in her work. During Dickinson's educational career, mathematics was not taught as a completely objective, value-free subject; mathematics was taught as a step in the proof of a divine plan. This is especially evident in reports of the educational goals at Amherst Academy, in particular when that institution was under the guidance of Edward Hitchcock. According to Wolff,

> [Hitchcock] proposed to strengthen and extend the College's mathematics and science departments; and he claimed that the study of these branches of learning, so often viewed as the enemies of revealed religion, would only fortify a belief in God's promised resurrection. "Mathematics . . . forms the very frameworks of nature's harmonies, and is essential to the argument for a God . . ." (79).

The result of such a view was that "[a]ll examinations of nature, then, made secular learning 'subservient to moral instruction'; and such was the assumption that informed Emily Dickinson's schooling. Students were taught to perceive . . . [God's] presence and promise in the laws of mathematics" (Wolff 94).

Not only was the instruction at Dickinson's school based on God's promises; the textbooks were, too. In a letter to Abiah Root, dated 14 March 1847, Dickinson, displaying some concern about her mathematical prowess, writes that she is "studying Algebra, Euclid, Ecc[lessiastical] History & reviewing Arithmetic again, to be upon the safe side of things next autumn" (L45). Capps suggests that "[b]ecause the Mount Holyoke catalogue is very specific in prescribing subjects to be mastered by prospective students and because of Emily's eagerness 'to be upon the safe side of things' when she arrived at South Hadley, she probably studied the books very carefully"(103). Included in the catalogue list of "Studies Required for Admission to Seminary" is "a readiness in Mental Arithmetic . . . Adams' New Arithmetic and Greenleaf's are particularly recommended" (Capps 103). "Mental Arithmetic" is, as Benjamin Greenleaf notes in the "Preface" to his textbook, *Mental Arithmetic*, a method for learning arithmetic "previous to the use of the slate" (Preface). However, a glance at Greenleaf's textbook shows that mathematics education is not just about mathematics; it is also about the values of the time, including Christian charity. The story problems that open that text include passages such as, "Thomas gave two biscuits to a poor man, and James gave him three" and, in one of the only two problems in the book's opening pages which requires an extra digit to solve, "Gave seven dollars to the Benevolent Society, and four dollars to the Temperance Society" (Greenleaf 3-4).

Mental arithmetic is the controlling trope of Dickinson's poem, "'Tis One by One – the Father," which reads,

> 'Tis One by One – the Father
> counts–
> And then a Tract between
> Set Cypherless – to Teach
> the Eye
> the value of it's Ten
>
> Until the peevish Student
> Acquire the Quick of Skill –
> Then Numerals are dowered
> back –
> Adorning all the Rule –
>
> 'Tis mostly Slate and Pencil –
> And Darkness on the School
> Distracts the Children's fingers –

Still the Eternal Rule

Regards least Cypherer
alike
With Leader of the Band –
And every separate Urchin's
Sum –
Is +fashioned for his hand –
+fitted to_____

(*Manuscript* 752-3)

According to Stonum, this poem is a "profoundly democratic poem," in that it "insists upon a distinction between mathematical skill itself and the master . . . [who] exerts an oppressive, stifling authority," an authority Dickinson counters by presenting "mathematics itself as an impersonal, egalitarian rule and hence a realm into which power struggles and claims about superior authority need not enter" (140). Although Stonum notes that the "Tract" might be "a tiresome religious tract" (140), his reading is dictated by the notion that what is being taught really is mathematics. But what if Christian indoctrination is the true object of the lesson? Of course the "Ten" is the student's fingers, but, just as "Tract" has its, at least, two meanings, might it not also be, as Fordyce R. Bennett suggests, an allusion to the Ten Commandments (154)? Just as the eye is being taught to count by looking at a hand, just so the Eye, that visionary organ, is receiving instruction on the ways of Christian life. If so, then the dowering back of the numerals might not necessarily be, as Stonum thinks, a moment of empowerment for the student (140), but instead might be a reference to Christ's reduction of the Ten Commandments to two, "You shall love the Lord your God with all your heart, and with all your soul, and with all your mind," and "You shall love your neighbor as yourself" (Matthew 22: 37-39), for since whatever dowers must be dead, the numerals seem to be a symbol for the stuff of a dead dullness (the opposite of the living, "Quick of Skill"), perhaps the turgidity of law which Christ attempted to elude in his reduction of the number of commandments. The revealed "Rule" is, however, quickly passed over in favor of continued scholarly activity (the children have now moved on to slates), and a perhaps new "Eternal Rule" dominates which, in godlike fashion, regards the least as the greatest.

Although "'Tis One by One – the Father" suggests a mathematical and metaphysical education which promises, as Stonum argues, the great reward

of an equalizing mathematical skill, there is a remainder in this poem: the "Urchin." In Stonum's reading of this poem, the urchin of course is a metonym for the students; however, there is a difference between the urchin and the students. The students, those children of God, have their hands full with their pencils while the urchin presumably possesses what urchins possess, his own empty–handed "Sum." Even though the students may have been instructed to love their neighbor (the urchin), they may also be placated by their rule which tells them everyone is actually treated "alike" by the Eternal Rule, that everyone gets a somehow mathematically and metaphysically proper measure. Thus, though it is possible to read "'Tis One by One – the Father" as a Dickinsonian ode to the possibilities of mathematics, the poem also critiques mathematics and religious education. By encouraging students to see all things "alike," students are allowed to overlook obvious differences.

The tendency to see all things as a unity, as a whole, is a characteristic of two of the major worldviews of Dickinson's era: Transcendentalism and Christianity. In Transcendentalism, according to Albert J. Gelpi, though there are dualities of "Nature and Soul, matter and spirit, not–me and me, Understanding and Reason," these dualities are ultimately illusory; Transcendentalism holds that "the process of living was the opening out of one's self to discover 'an occult relation' with all things . . . Each and all, matter and spirit are One" (Gelpi 57-8). The Transcendentalist view is an echo of the Christian doctrine of the Fall. Though the Fall separates God and man, the separation is either temporary or else it is a part of the deeper unity of God's plan; even the damnation of the totally depraved is a part of a mysterious, divine design.

Perhaps somewhat paradoxically, the possibility for unity is sometimes suggested in mathematical terms. For Emerson, learning how to categorize, to divide, to count, can lead to a sense of oneness. In "The American Scholar," Emerson notes,

> To the young mind everything is individual, stands by itself. By and by, it finds how to join two things and see in them one nature; then three, then three thousand; and so tyrannized over by its own unifying instinct, it goes on tying things together, diminishing anomalies, discovering roots running under ground whereby contrary and remote things cohere and flower out from one stem (54).

Although Dickinson's struggle with metaphysical questions, at times, seems to be similar to Emerson's in that it is located "between the need for integration with something else and the assertion of self-contained individu-

ality, between the need for union with or subservience to the not-me and the insistence upon the separate identity of the ego" (Gelpi 3), Dickinson seems unwilling to allow her questions the easy result of unity. Dickinson seems to have "understood skepticism all too well and she could not take the easy escape of merely dismissing the problems," that "[s]he could not ignore the presence of evil or the inhibition of limits, as Emerson tried to do" (Gelpi 53). In "Tis One by One – the Father," Dickinson clearly recognizes differences, including, especially in that poem, the differences between humans. Dickinson would not agree, at least without some irony, with Emerson who, in Gelpi's words, declares that "'man, though in brothels, or jails, or on gibbets, is on his way to all that is good and true,'" for, "[i]t was a more difficult world than that — truly a world of conflicting evidences" (53).

Dickinson cleverly questions such unqualified unity in "It troubled me as once I was – ," which reads,

> It troubled me as once I was –
> For I was once a Child –
> +Deciding
> +Concluding how an Atom – fell –
> And yet the Heavens – held –
>
> +were weightiest – far –
> The heavens weighed the most
> by far – +easy
> Yet Blue – and +solid – stood –
> Without a bolt – that I could
> prove –
> +Would Giants – understand?
> +did – might
> Life set me larger – problems –
> +save solve
> Some I shall +keep – to prove
> +where
> +Till Algebra is easier –
> Or simpler proved – Above –
>
> Then – too – be comprehended
> What sorer – puzzled me –

Why Heaven did not break away –
And tumble – Blue – on me –
(*Manuscript* 545)

The pun of "Atom – fell" and "Adam fell" is enough to recognize the religious and metaphysical import of this poem, showing the poem to be not only concerned with an inquiry into perhaps scientific or natural phenomenon (Guthrie notes that the atom might be "snow, ice, or rain" (126)) but also with inquiry into how a whole, or in this case, a divine plan, can be unmoved (how Heaven can stand) even when it seems that the whole, or a divine plan, has been disrupted. In fact, metaphysical inquiry may actually be the prominent form of inquiry in this poem, for there is an additional reference which stresses this poem's religious/metaphysical concerns; "Atom – fell" might be an allusion to Matthew 10: 29-31, which reads, "Are not two sparrows sold for a farthing? and one of them shall not fall on the ground without your Father. . . Fear ye not, therefore, ye are of more value than many sparrows."

The connection between "It troubled me as once I was –" and these verses from Matthew is an expected one. First, Dickinson was familiar with these verses; according to the *Mount_Holyoke Journal*, these verses were read during devotions on March 14, 1848, while Dickinson was at the Seminary (Leyda 140). Additionally, Dickinson herself links a bird and an atom in "Of course – I prayed – ," a poem in which the speaker compares herself to "[a] bird" which wishes to have been left "in the Atom's / tomb" (*Manuscript* 578). Lastly, in "The Life of Birds," an *Atlantic* essay which Dickinson probably considered memorable[4], Thomas Wentworth Higginson refers to a bird as an "atom" (369). Thus, though "It troubled me as once I was – " employs scientific terminology, that terminology is quite clearly conflated with religious and metaphysical concerns about the assurance that all things happen according to God's will.

Although the poem's speaker, in the child's voice, asks if adults know how the heavens can hold even when parts of it fall away, asking, "Would Giants – understand," and although the speaker seems to assert that this problem may be solved "Above," this does not necessarily mean that Dickinson supports such a view. In fact, it seems the adult speaker of this poem is either incredibly dimwitted or else is wonderfully witty and ironic, for the answer to the child's question is already embedded in the poem. Heaven could hold if there actually were differences; if the atom/bird and heaven could be understood as separate entities, then one would not necessarily have to suffer the loss of the other. The heavens might hold, that is, if there were two. The poem hints that whereas "to" might solve this

problem and "too" would allow the problem to "be comprehended," nonetheless "two" is missing. This problem arises either because one does not catch on (and therefore believes naively that heaven is necessary for answers) or because one does catch on, moves on to other problems, and lets others toy with minor, already-solved dilemmas. Dickinson employs the child, at once the lowly learner and the one who Jesus says should be emulated for entrance into the kingdom of God (Matthew 18:3), to critique the heavenly mathematics, setting simple questions against too–easy answers, setting the fundamental against the firmament.

In the "Preface" to An Introduction to Algebra, Jeremiah Day states that although mathematics may be used for practical ends, such as "transacting business,"

> a higher purpose is proposed . . . to call into exercise, to discipline, and to invigorate the powers of the mind. It is the *l*ogic of the mathematics which constitutes their principal value . . . The time and attention devoted to them, is for the purpose of forming sound reasoners, rather then expert mathematicians (3-4).

Day continues,

> Mathematical studies are particularly fitted for the study of the mind. They are calculated to form it to habits of fixed attention; of sagacity, in detecting sophistry; of caution, in the admission of proof; of dexterity, in the arrangement in arguments . . . When a habit of close and accurate thinking is thus acquired; it may be applied to any subject, on which a man of letters or of business may be called to employ his talents. 'The youth,' says Plato, 'who are furnished with mathematical knowledge, are prompt and quick, at all the other sciences' (8).

According to Day, mathematics is a good subject for the training of young minds because it is based upon distinction and definition. Day states,

> The science of the pure mathematics has long been distinguished, for the clearness and distinctness of its principles; and the irresistible conviction, which they carry to the mind of every one who is once made acquainted with them . . . The foundation of all mathematical knowledge must be laid, in definitions and self–evident truths . . . It is essential to a complete definition, that it perfectly distinguish the

> thing defined, from every thing else. On many subjects, it is difficult to give such precision to language, that it shall convey, to every hearer or reader, exactly the same ideas. But, in the mathematics, the principal terms may be so defined, as not to leave room for the least difference of apprehension, respecting their meaning (2-3).

Dickinson critiques precisely these ideas in her references to and uses of mathematics and metaphysics in her poems. Dickinson questions how "sound" the "reasoners" could be who are produced in a system in which the method of their instruction engages in the constant transgression of its own rules; she can "detect sophistry" in a method that conflates mathematics, the most abstract and definite of the fields of knowledge, with metaphysics, perhaps the least definite. That is, mathematics, holds identity to be absolute (for example, "one" is what, if another one is added to it, makes a "two"), whereas metaphysics, understands identity to be problematic ("one" could be anything from a singular essence to the "oneness" of all things). Dickinson questions a system in which the most elementary of mathematical propositions, that one and one are two, can be mistaken for the most dimwitted and/or the most exuberantly mystical, the most dangerous and/or the most promising metaphysical proposition that all things added up are one. Dickinson inquires into that metaphysical assertion in the poem, "One and One – are One –."

> One and One – are One –
> *T*wo – be finished using –
> Well enough for Schools –
> But for +Minor Choosing –
>
> Life – just – Or Death –
> Or the *E*verlasting –
> +More – would be too vast
> For the Soul's Comprising –
>
> +inner +two
> (*Manuscript* 531)

A glance at this poem might make it seem as though the poem supports the mystical mathematics of its opening line, especially when it is pitted against the "Two" learned in schools which is required for small decisions ("Minor Choosing"), perhaps the result of a child's mathematics which could

only hope to lead to insignificant, everyday business transactions; however, at least three terms and/or relations are reversed in the second stanza. First, what is being limited is not the stuff of business transactions, but instead is the stuff of metaphysical concern: "Life," "Death," and the "Everlasting." Second, the way in which the soul is offered its options indicates that in fact one and one are not one, for the soul must choose from various ones. For example, the soul must choose either life (that is, "just" "Life," or only "Life") or death. The soul is not even given the option of unifying those supposed opposites. Third, largely because of the limitations on the soul's choosing, Dickinson makes the choice, or the solution, "One," impossible. For example, if the soul chooses "Life," the soul does not attain everlasting life, for "Everlasting" is a part of the trinity from which the soul must choose. And yet the soul cannot receive life and then die, for "Death" specifically is separated from "Life." So what can the soul achieve from its choosing? If the soul chooses "Life," it gains a life that at once cannot die but that also cannot last forever. Thus, as with the other poems already examined, Dickinson makes reference to oneness while simultaneously questioning that oneness.

A reading of the variants of "One and One – are One –" further supports the notion that Dickinson is problematizing oneness. If the "Two" is inserted, "Two – would be too vast" sounds ironic; seemingly important issues are reduced to aural games. This degree of punning also primes the ear for the last line's "For," making the poem read, perhaps, "Four [is] the Soul's Comprising," suggesting, in a final twist to this tricky poem, that though the soul might not be that big, it can manage a "one," leaving for itself a proportionally larger ratio of emptiness or possibility.

Although the point here is not to claim that Dickinson is dealing in numerology or that all of her poems secretly are story problems, it is worth noting that Dickinson often puns with numbers, and especially with the very important "two." For example, after noting the proliferation of "to" in "I tie may Hat – I crease my Shawl – ," Vivian Pollak claims that from the speaker's "emphasis on two," "[t]he speaker feels like a split personality," that "[w]e have encountered two characters" (204-5). The tendency to pun is significant for two reasons. First, it adds support to the basic notion that Dickinson constructs her poems with some attention directed toward mathematical elements. That is, if it is agreed that there is verbal play in Dickinson's poems which link words and numbers, there may be more agreement as to whether or not Dickinson's non-alphabetical signs are to be understood as resonating with mathematics. Second, as singular aural signifiers of multiple meanings, puns embody problems and questions of identity, the types of problems and questions avoided by precise, mathematical terms. Thus, to

some extent, Dickinson's number puns enact her inquiry into the metaphysical claims and uses of mathematical signs and assertions.

Another poem which uses both mathematical terminology and puns is "Unto the Whole – how Add?" It reads,

> Unto the Whole – how Add?
> Has "All" a further Realm –
> Or Utmost an Ulterior?
> Oh, Subsidy of Balm!
> (Fr1370)

In this poem, limitation is expressed mathematically, as an inability to add. Nothing can go beyond "the Whole" in which everything is incorporated; even the poem itself is stalled, thrice repeating its single question. Because the inability to move beyond in metaphysical realms is enacted in the rhetoric of the poem, the inability seems a direct result of the poem's initial premises; it may be that there is no way to add to a whole because a whole simply is a concept which removes any possibility for difference or multiplicity, because a whole is a concept which is precisely "un-two." Ultimately, no result is calculated from this poem's speculation; there is only the exclamation, "Oh, Subsidy of Balm!" However, this exclamation is ambiguous. Though initially it might be assumed that the subsidy is the realm, perhaps a paradise somehow outside of totality, "Subsidy" is not a word of strong praise. "Subsidy" implies that the "further Realm," the "Ulterior," is minor compared to "the Whole" which perhaps does the subsidizing. These complications allow for the possibility that the exclamation might be aimed at the idea of a whole; perhaps the idea of a whole, a oneness, is the small comfort, the little "Balm." Whether hoping for heaven or a sense of the oneness of all things, the speaker of this confused metaphysical inquiry ultimately is left without answers, crying out only for or against the pittance of comfort.

In its portrayal of an attempt to engage in metaphysical inquiry, in its use of mathematical terminology to express its problem and its hope, and in its ultimate failure to find a comforting answer, "Unto the Whole – how Add?" is similar to a number of Dickinson's poems in which speakers try unsuccessfully to come to terms with loss by means of mathematical problem solving. In "As by the dead we love to sit," the speaker tries to sort out the value of life "in broken mathematics" while at the funeral of a loved one (*Manuscript* 46). In "The days that / we can spare," the death of a friend can result in the desire to be rid of "Time" "without / Arithmetic of him" (*Manuscript* 1317). Likewise, "I reason, Earth is short – ," evokes the genre

of popular funereal verse.

> I reason, Earth is short –
> And Anguish – absolute –
> And many hurt,
> But, what of that?
>
> I reason, we could die –
> The best Vitality
> Cannot excel Decay,
> But, what of that?
>
> I reason, that in Heaven –
> Somehow, it will be even –
> Some new Equation, given –
> But, what of that?
> (*Manuscript* 442)

"I reason, Earth is short – " appears to be a very predictable poem. When its brief meditation on life's hardships is questioned, the poem moves to death, for death is the answer to, or at least marks the end of, life's hardships. When its brief meditation on death is questioned, the poem moves to heaven, for heaven is the answer to the inevitability of death; traditionally, heaven makes death seem trivial enough to dismiss with a curt question. However, when this poem arrives at heaven, the point where most questioning ceases, this poem repeats the same question. The same skepticism which was applied to the vagaries of life and death in order to allow for speculation regarding heaven is applied to the promise that heaven will sort everything out, will make all things "even." What seemed to have been a poem following that line of thought a Christian "sound reasoner" might follow in the end is a poem which privileges a process of skeptical inquiry over any results. Again, a mathematically expressed metaphysical idea is rejected in favor of further questioning.

Because, for Dickinson, the evocation of mathematics is precisely an evocation of critique and inquiry, it would be foolish to attempt to spell out a detailed notion of exactly what Dickinson means by the use of mathematical signs in her poems. Also, any attempt to decipher the specific meanings of all of Dickinson's mathematical signs seems highly problematic for two reasons. First, some of the mathematical signs have more than one meaning. For example, the line which concludes a list of numbers to be added might

also be understood as the line which separates numerator and denominator in fractions. Thus, even though read solely within a mathematical context, the line could have two very different meanings. Second, the mathematical signs mentioned in this essay are not the only mathematical signs in existence, and nor are they the only mathematical signs Dickinson might be using. For example, Dickinson's occasional use of the period could be a reference to the decimal point, the use of the colon could be a reference to the mathematical sign used to signify ratio, and the use of the letter "x" could be a sign for multiplication or could be (along with any other letter) an algebraic unknown. Thus, though there may be a pattern to Dickinson's use of mathematical signs for which some may want to search, the sheer quantity of those signs should make such a search seem questionable.

Any attempt at discovering the ultimate meaning of Dickinson's use of mathematical signs would also have to wrestle with the fact that at best Dickinson employs mathematics suggestively, impressionistically, more as a collage than as a definitive structure. Every one of Dickinson's poems, for example, does not end with a line after it. The suggestive nature of Dickinson's mathematics, however, may be just the point of the use of mathematical signs. That is, Dickinson may be referring to a human "broken mathematics" which is impossible to transcend or escape. Visually, Dickinson's poems are not examples of the formal, abstract, distinction–driven, transcendent mathematics.

However, this does not mean that Dickinson's use of mathematical signs is without its effects. Instead, the observation that Dickinson is using mathematical signs in her poems might be compared to the observation which many critics have which claims that Dickinson's poems have hymns for aural resonance. On the one hand, such an observation does very little. It does not, for example, mean that all of Dickinson's poems are veiled praises to Calvin's God. And yet, on the other hand, that observation is incredibly suggestive. It might allow one freedom to investigate Dickinson's manipulation of a received form. It might concentrate readerly attention in poems which specifically mention hymns. Similarly, on the one hand, the observation that Dickinson's poems have mathematics for visual resonance provides readers very little. Because Dickinson makes visual reference to mathematics does not mean that every one of her poems entails a mathematics problem. However, on the other hand, seeing mathematical signs in Dickinson's poems is a suggestive and potentially productive insight.

Mathematical signs can attract possibility and further the range of readerly choice. For example, the presence of mathematical signs perhaps could serve to call for new, closer looks at poems which seem in some way

to highlight numbers. For example, the poem "At Half past Three" might be read anew in light of an emphasis on mathematics in Dickinson. Though "At Half past Three" does not employ the mathematical signs discussed in this essay, the new attention to the presence of mathematics caused by noting the larger role mathematics might play in Dickinson's poems might lead readers to note that that poem does signal its mathematical nature by including numbers in the opening line of each of its three stanzas, which read, "At Half past Three," "At Half past Four," and "At Half past Seven" (Fr1099). Perhaps it is not coincidental that seven is the hour chosen for the last stanza. It takes the poem's conclusion out of a purely chronological development (which presumably would have the last stanza begin, "At Half past Five") and places it within mathematical realms (three plus four equals seven). Of course, the mathematics is inaccurate in this poem; three-and-a-half plus four-and-a-half equals eight, not seven-and-a-half. Attending to arithmetic might be enough to call into question a reading of "At Half past Three" like Douglas Anderson's which argues that the "circumference" mentioned in the poem's last line is "exultant" because it can contain within it the "flight" of the stanza's "units of time" (210-11). A focus on mathematics shows that, at least in this one poem, Dickinson's circumference might also take place in the realm of a mathematical mistake, or at least in the realm of a problematic mathematical resonance. Circumference, therefore, may not be completely "exultant."

That questions arise as a result of applying mathematics to Dickinson's poems seems fitting, for Dickinson seems to appropriate the signs of mathematics, that supposedly precise art, to allow for choice and indeterminacy. The minus sign separates *a*nd joins words. The plus sign marks variants. In large part, the question–raising role mathematical signs play in Dickinson's poems parallels and supports Sharon Cameron's argument in *Choosing Not Choosing: Dickinson's Fascicles*. Cameron notes that "what is more radically revealed [by the study of the fascicles rather than single poems] is a question about what constitutes the identity of the poem," concluding, "[t]hus, although it will become apparent that some of Dickinson's poems raise the problem of identity by thematizing it, Dickinson's fascicles can rather be seen to *em*body the problem of identity" (4). In a parallel fashion, if some of Dickinson's poems raise the problems of mathematics and its relation to metaphysical questions (of definition, identity, unity, and otherness) by thematizing it, Dickinson's poems, as collages which employ the signs of mathematics, might also be understood as embodying the problems of the shifting values of mathematics and metaphysics. Present throughout a vast number of fascicle pages that continuously raise metaphysical questions, the use of mathematical signs can be seen as evidence for Cameron's notion

that "the scenes and subjects [of Dickinson's fascicles] can be said to unfold between and among the poems as well as from within them" (4).

According to Gelpi, in "The Poet," Emerson states that "the genius is 'an organic agent;' the poet's eye 'can integrate all the parts'" (3). Although in her use of mathematical signs Dickinson proves herself a genius by visually integrating poetry and mathematics, the purpose of that integration is not the certainty of knowing many associate with genius, but is instead the installment of a profound skepticism regarding the integrating tendencies of her era. In "The Poet," Emerson also claims, "We are far from having exhausted the significance of the few symbols we use. We can come to use them yet with a terrible simplicity" (11). Dickinson activates this idea in her employment of mathematical signs as signifiers of an ongoing, profound metaphysical inquiry.

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