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Jessie Leatham Wirkus
Brigham Young University - Provo

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Matthew Wickman
Nicholas Mason
Paul Westover

Department of English

Brigham Young University

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ABSTRACT

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Recently, literary critics have increasingly drawn on methods of quantitative analysis to understand the readers and literature of the eighteenth century. Ironically, however, the eighteenth century is home to debates concerning the nature and usefulness of number, counting, and therefore, on some level, quantitative analysis. Eighteenth-century questions of number form an important part of the intellectual history of this period; these questions of number, in turn, hold important implications for language and the period's literature. I argue that the far-reaching influence of eighteenth-century questions of number can be seen especially well in the nature poetry of James Thomson. To explore this influence, I first discuss the problems of number presented to eighteenth-century mathematicians and philosophers by George Berkeley's critique of the infinitesimal calculus popularized by Isaac Newton. I then further explain the problems of number for eighteenth-century thinkers by drawing on philosopher Alain Badiou's theorization of the collapse of number in the seventeenth and eighteenth centuries. This background brings to light connections between eighteenth-century questions of number and similar questions philosophers, such as John Locke, asked of language. These connections set the stage to discuss number in Thomson's *The Seasons*. Because of Thomson's rather unique exposure to the Newtonian tradition through his Edinburgh education, he was introduced not only to Newton's more popular discoveries, but also the mathematical and philosophical debates that swirled around Newton's methods. Coming out of this environment, Thomson's *The Seasons* display a particular kind of interest in number at its limits—infinity and zero. This paper will explore Thomson's tropological expressions of infinity and zero in the poem and note how these tropes replicate the logic of the sublime. Ultimately number at its limits in Thomson suggests the problems of expression, and, reading against traditional interpretations of Thomson, the limits of the Enlightenment project.

Keywords: number, Isaac Newton, James Thomson, sublime, eighteenth-century poetry

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Introduction

If the literary scholarship of the past ten years is any indicator, counting is in vogue. From Garside, Raven, and Schöwerling's survey of Romantic-era prose fiction to Franco Moretti's *Graphs, Maps, Trees*, literary scholars are turning to methods of quantitative analysis to take a different kind of look at the reading and publication habits in the eighteenth century. And from the attention texts such as *Graphs, Maps, Trees* and William St. Clair's *The Reading Nation in the Romantic Period* have garnered, it seems clear that number can tell literary scholars something new and exciting about literary history. Apparently, numbers talk. But what do numbers say, and how well do they say it?

It is perhaps ironic that literary critics and historians looking to better understand the eighteenth century would turn to numbers, as the eighteenth century was home to a debate about the reliability of number itself. Philosopher Alain Badiou recounts aspects of this debate in his book *Number and Numbers*, specifically describing the collapse of number during the Enlightenment. Badiou argues that number's collapse and its therefore precarious ontological footing has persisted to today, a time when we have forgotten to interrogate number even when our societies depend on number almost exclusively: "What counts—in the sense of what is valued—is that which is counted. Conversely, everything that can be numbered must be valued" (2). This failure to interrogate number, for Badiou, holds potentially serious consequences: "we don't know what a number is, so we don't know what we are" (3). Number, according to Badiou, is an ontologically vexed category that needs a sounder basis which he will provide through a radicalization of set theory, but not before he locates the beginnings of number's vexed ontology in the Enlightenment, in the midst of the texts, ideas, and concerns this paper will explore. In the wake of mathematical inventions such as negative numbers, imaginary numbers, and infinitesimal calculus, mathematicians and laypeople alike had to ask what Enlightenment science and mathematics could reliably communicate.

The question of what communicative power number and mathematics held forms an important pillar of the eighteenth century's intellectual history. Within a broader intellectual spectrum, questions of number influenced how people in the eighteenth century viewed symbols and language. The question of number's far-reaching influence can be seen especially in the nature poetry of James Thomson. Because of Thomson's rather unique exposure to the Newtonian tradition through his Edinburgh education, he was introduced to not only Newton's more popular discoveries, but also the mathematical and philosophical debates that swirled around Newton's methods. Coming out of this environment, Thomson's *The Seasons* display a particular kind of interest in number at its limits—infinity and zero. This paper will explore these instances of number at its limits, especially as they share the logic of the sublime which suggests the problems of expression, and—despite some of Thomson's other poems and critical interpretations—the limits of the Enlightenment project. Before discussing Thomson, however, it is important to grasp the problems that number presented to eighteenth-century mathematicians and philosophers via George Berkeley's critique of infinitesimal calculus and Alain Badiou's theorization of the collapse of number.

Bishop Berkeley's Objection to Newtonian Calculus

The development of calculus in the seventeenth century provided revolutionary ways to use number, but the calculus also prompted some troubling questions about number's foundations which contribute to a discourse on number in the eighteenth century. In 1734 Bishop George Berkeley published *The Analyst*, a critique of infinitesimal calculus, and initiated one of the more famous mathematical scuffles of the eighteenth century. *The Analyst; or, a Discourse*

Addressed to an Infidel Mathematician asked Newton-inspired proponents of the calculus to rigorously prove their methods—Berkeley objected to the use of infinitesimals in particular—or to admit that there was as much room for mystery in mathematics as there was in religion. [1] Berkeley's critique angered many a mathematician because he was questioning not only the rigor of their mathematics but also their religious devotion (Pycior 235). *The Analyst* provoked, by Berkeley's count, more than twenty (sometimes angry) responses and contributed to some negative reactions to Berkeley's other writings on mathematics and philosophy.[2]

To understand the intensity of this particular conflict, it's useful to think about the significance of Newton and his calculus to mathematicians and lay-people alike in the eighteenth century and beyond. Newton developed calculus while he was away from Cambridge during the plague years of 1665 and 1666. Though he privately circulated his mathematical ideas, he did not publish them until after Gottfried Wilhelm Leibniz had published his method of calculus in 1684 and 1686. A rather bitter debate over which of the two actually invented calculus ensued. Though the discoveries are now accepted as independent, the debate over their origin emphasizes the weight and importance of the invention of calculus. In his description of the debate between Newton and Leibniz, Jason Socrates Bardi calls calculus "one of the greatest legacies of the seventeenth century" (v) and the method responsible for "giving mathematics its greatest push forward since the time of the Greeks" (vi). Entire books, such as Frank Durham and Robert D. Purrington's *Some Truer Method*, track the influence of Newton's methods and discoveries on modernity. And while *Some Truer Method* deals mostly with Newton's heritage in mathematics and science, Durham and Purrington also argue that "poetry, painting, sculpture, music and the novel were all transformed" (4). Literary critics have particularly drawn on work by historians like Margaret C. Jacob, who has argued for the pervasiveness of Newtonian ideas and methods in

British Enlightenment culture.[3] Scholars have long been interested in Newton's impact on art and culture. Recently critics such as Robert Markley, James L. Paxson and Mitchell G. Reyes have begun to discuss the impact of the mathematics behind the ideas in Newton's writings such as *Opticks* and the *Principia* on language and culture.[4]

Part of Newton's influence on eighteenth-century culture comes out of contemporary controversies surrounding the validity of calculus. Berkeley's *Analyst* provides a useful example of objections to Newton's calculus. To calculate the area under a curve, Newton essentially covers the area of the curve with infinitely small rectangles, the added area of which becomes closer to that of the area under the curve the more rectangles Newton employs. As the number of rectangles increases, the error in approximating the area under a curve (or the difference between the summation of the areas of the rectangles and the actual area beneath the curve) approaches zero. This error—symbolic in a sense of the infinitesimally small corners of the rectangles cut off by the line of the curve—is what Newton throws out of his calculations. Though this move may be practical, to Berkeley it was seriously illogical to simply throw them out, threatening the rigor of Newton's whole enterprise. Infinitesimals have some very small amount of quantity; therefore, Berkeley thought it was insensible on Newton's part to treat them like they have no quantity—as a zero for all intents and purposes. And so, Berkeley famously asks pertaining to the quantities contained in these tossed-out infinitesimals, "May we not call them the Ghosts of departed Quantities?" (18). Berkeley believed that Newton's use of the infinitesimal was, if nothing else, contradictory and, therefore, incoherent: "if we remove the Veil and look underneath, if laying aside the Expressions we set ourselves attentively to consider the things themselves, which are supposed to be expressed or marked thereby, we shall discover much Emptiness, Darkness, and Confusion; nay, if I mistake not, direct Impossibilities and

Contradictions" (4). With *The Analyst* Berkeley hoped to point out and warn against a lack of rigor in the use of infinitesimals, despite calculus's usefulness. However, Berkeley's critique of Newton's calculus also points to larger mathematical concerns of the period which in turn reflect on even larger ontological concerns. If mathematics is indeed the "science of quantity" (Pycior 4) as Newton thought of it, how would one express the infinitesimal, negative or imaginary numbers, or infinity in terms of quantity? What do these kinds of numbers and non-quantities mean? In suggesting these questions, Berkeley's critique of Newton's calculus signaled a much larger controversy concerning number—what is number and what can it reliably do?—in the eighteenth century.

Alain Badiou and the Enlightenment-era Collapse of Number

The controversy surrounding Berkeley's *Analyst* provides one very specific and lively chapter in the eighteenth-century debate concerning number. To gain a broader and more foundational understanding of Enlightenment-era debates surrounding number that will inform our reading of Thomson, we can turn to Badiou. Badiou argues that number loses a clear sense of ontology through numerical advances discovered during the Enlightenment. According to Badiou, the Greeks—including figures such as Euclid—conceptualized number in terms of a "procession" of multiplications proceeding from "the One" (7). According to this conception, one (1) is not a number, but an indication of existence, the signifier of a complete entity. Therefore, basing number on "the One" provides the Greek conception of number a kind of ontological stability. Locke, in *An Essay Concerning Human Understanding*, gives a description of ideas and, in extension, number that sounds very much like the ancient Greek conception Badiou recounts. Pycior notes that in Locke's philosophy numbers are based on the addition of whole, unified units (215). Locke explains number in this way: "By the repeating. . . of the Idea of an Unite, and joining it to another Unite, we make thereof one collective Idea, marked by the name Two" (205-06) and so on. In keeping with the Greek tradition, numbers, to Locke, were very clear and easy to understand. However, the modern number begins to change from the Greek number due to "three fundamental causes" that Badiou argues have resulted in the modern collapse of the Greek thinking of number (7). These three problems are one, "the problem of the infinite" (7); two, the problem of zero; and three, the problem of multiplicity.

First, and perhaps most closely related to Berkeley's distaste for infinitesimals and to the present discussion of concerns with number that will manifest themselves in Thomson's poetry, Badiou argues that the problem for number caused by the infinite is

> ineluctable from the moment when, with differential calculus, we deal with the reality of *series* of numbers which, although we may consider their limit, cannot be assigned any terminus. How can the limit of such a series be thought *as number* through the sole concept of a collection of units? A series tends towards a limit: it is not the addition of its terms or its units. It cannot be thought as a procession of the One. (7)

In addition to the problem of the infinite, Badiou suggests that zero complicates the idea of a unified one. The one is in part defined by zero—we understand what one is insofar that it is not zero, the void. "But then," Badiou argues, "the problem comes back to numerical one: how to number unity, if the One that supports it is void?" (7-8). In a counting system, one and zero are opposites; defining one with zero creates a problematic rift in the conception of one and its unified being. The third, final, and "most contemporary" problem is that, according to Badiou, "we find ourselves under the jurisdiction of an epoch that *obliges* us to hold that being is essentially multiple. Consequently, number cannot proceed from the supposition of a transcendent being of the One" (8). Like the unified one, and therefore its being, can be split, the being of everyday objects is expanded or split—in any case complicated—through discoveries made possible by telescopes and microscopes. Suddenly, much more exists beyond the earth, and much more exists within it as well. Even a drop of water hosts a multiple being; it is just a drop of water and also home to throngs of thriving microscopic organisms.

Badiou recalls the invention of differential calculus as a crucial moment when mathematicians started to see the significance of infinity for number; however, the infinitesimal was not the only mathematical innovation to complicate the nature of modern number. The same kind of discomfort Berkeley felt in connection with the infinitesimal, despite its usefulness, was felt by many mathematicians, including Newton, in connection with negative and imaginary numbers. According to Pycior, "Early modern algebra called mathematicians to reason on arbitrary symbols that supposedly stood for quantities, but some of the symbols stood for negative quantities that seemed to defy traditional definition and one symbol ($\sqrt{-1}$) seemed to stand for nothing at all" (7). Consider the problem negative numbers present to the idea of one as unity: is it possible to have a negative unity? Can one add negative units in the same way one adds positive ones? Most basically, can a negative number even exist? What is the nature of the being of a negative number? These kinds of numbers prompted big questions for the thinkers of the time and those questions had important ramifications for number and language in the twentieth century: "The debate over the foundations of algebra—especially over its symbolical style and its negative and imaginary numbers—forced British thinkers to reflect long and hard on symbolical reasoning. These thinkers—some were known for their mathematics, other for their philosophy—were so to speak," Pycior argues, "a 'test group' for the symbolical reasoning and later semiotics that would in the nineteenth and twentieth centuries so change not only mathematics but logic, philosophy and language studies as well" (7).

As we will see, numerical innovations and concepts such as infinity which complicate the foundation of number inform Thomson's poetical descriptions of nature. However, the destabilization of number in the seventeenth and eighteenth centuries, as described by Badiou, presents several corollaries to similar discussion taking place in the eighteenth century concerning an increasing cognizance of the instability of language. This is another route through which questions of numerical and linguistic instability and anxiety come to play a role in Thomson's poetry. As "the One" and zero—linguistic signs with an increasingly fuzzy referent—become increasingly complex, philosophers also turn their attention to the inconsistencies and unreliability of language. One place in which this manifests itself is in discussions of the conflicts between and the relative merits of the figural and the literal. That instabilities in language should trickle into scientific and philosophical domains and vice versa is perhaps not surprising, and different formations of intersections between the literal and figural both within the history of science, philosophy and literature have been described by scholars such as John Bender and contributors to *The Figural and Literal: Problems of Language in the History of Science and Philosophy, 1630-1800*.[5] In his introduction to this collection, John R. R. Christie states that the essays therein re-evaluate the "validity of the literal/figural dichotomies and their unproblematised role in the history of modern Western thought" (2). Christie describes the dichotomy between literal/figural as the basis of many dichotomies important to science and philosophy during the Enlightenment: "grammar/trope, truth/poetry, science/rhetoric, discovery/justification, philosophy/literature" (2). Christie's and his co-authors' exploration of the play between these categories in seventeenth-century texts suggests that science and mathematics formed an important axis in discussions about language instigated by figures such as Hobbes and Locke. Furthermore, thinking about number and mathematics in connection with language makes mathematics look less literal, and when mathematics begin to look figural, science also begins to look figural. Careful interrogation of the literal/figural suggests, if nothing else, that philosophers of language and mathematics have a common problem—how can mathematics or language be rigorous when the base units are changing, unknown entities?

Paul de Man's discussion of metaphor in "The Epistemology of Metaphor" provides a mirror into the concerns that three eighteenth-century philosophers held about just how figural and multiple language could be. De Man suggests that a discomfort with language and subsequent attempts to control language are articulated in the works of Locke, Condillac, and Kant. According to de Man, "there [is no] doubt about what it is in language that thus renders it nebulous and obfuscating: it is, in a very general sense, the figurative power of language" (35). However, de Man claims that "in each case," Locke's, Condillac's and Kant's, "it turns out to be impossible to maintain a clear line of distinction between rhetoric, abstraction, symbol, and all other forms of language" (48). Not one of these philosophers is totally able to control the tropes in language; language is always figural. De Man therefore exposes an inherent unreliability in language that eighteenth-century philosophers grapple with and that continues to destabilize discourse today: if language is always tropological, what we call one thing we could call something else. Language is slippery, always capable of multiplicity. Furthermore, de Man not only suggests the tropological nature of language, but argues for the importance of Enlightenment-era discussions of language in understanding contemporary concerns with language, much like Badiou argues for the importance of understanding the collapse of number in the eighteenth century. The first decades of the eighteenth century, then, become an extremely significant moment for systems of symbols from language to number, and the philosophers, mathematicians, and poets—including Thomson—that engage with and interrogate these systems.

James Thomson, Newtonianism, and Unity

James Thomson was not a mathematician or a philosopher per se; however, his poetry, especially *The Seasons*, is steeped in seventeenth- and eighteenth-century interrogations of language of number. Thomson was introduced to eighteenth-century numerical problems through his education at the University of Edinburgh, especially as it dealt with the works of Isaac Newton. On the whole, Newtonian methods were more quickly adopted and transmitted in schools in Scotland than in the rest of Britain. For instance, Colin MacLaurin, a dedicated Newtonian disciple whom Newton himself endorsed for a post at the University of Edinburgh in 1725, taught from Newton's *Universal Arithmetick* (Pycior 208) and wrote the *Treatise of Fluxions*, a defense of Newtonian fluxions from Berkeley's criticism. MacLaurin's predecessor and one of Newton's contemporaries, James Gregory, admired Newton's work and incorporated many of his discoveries into his lectures given at the University of Edinburgh. According to James Sambrook, one of Thomson's biographers, the inclusion of Newtonian ideas and discoveries in the university curriculum was facilitated by years of non-institutionalized support: "the new system had already been expounded for some years in optional arts lectures. This was first done by David Gregory; according to the DNB, he was 'the first professor who publically lectured on the Newtonian Philosophy,' and later by his brother James who succeeded him as Professor of Mathematics in 1692" (Sambrook 14-15).

Scottish supporters of Newtonian ideas were also among Thomson's professors at Edinburgh. Thomson studied at the university from 1715 to 1725; during this period, Newton's

Of Colors and *Principia* were most likely among his texts (Drennon 73). According to Douglas Grant, Thomson was introduced to some Newtonian ideas by Robert Stewart, who "slowly discarded Cartesianism and became a cautious convert to Newtonianism" (23). Grant supposes that Stewart's "lectures must have sown some of the seeds of James Thomson's deep interest in the modern scientific and philosophic changes which were altering man's whole conception of his universe" (23). Sambrook offers further evidence of this idea: "A transcript of Stewart's lectures in 1724 survives, giving clear evidence that he taught astronomy according to Newton's system and taught it in such a way as to demonstrate religious truths. This was the doctrine of Thomson's *Seasons*" (14). Taking these kinds of encounters with Newton as a basis, literary scholars such as Marjorie Hope Nicholson and Alan Dugald McKillop have discussed the influence of Newton's theories on Thomson's poetry, but few critics, if any, have discussed how Thomson's poetry speaks to the questions of modern number that permeate Newton's work and mathematics generally in the eighteenth century.

The *Seasons* and its individual poems are ambitious. Over five thousand lines long, *The Seasons* ranges in topic from natural descriptions to history and from current politics to scientific discoveries. James Sambrook claims that the poem, which was rewritten, revised, and expanded by Thomson for twenty years, "remains, in intention, a religious didactic poem" (xviii).[6] One of the key modes of Thomson's religious didacticism is the incorporation into *The Seasons* of many scientific discoveries of his day, which to his mind help to proclaim the goodness of the creator and glorify his works. In this way, Thomson's poems resemble to a degree other physico-theological poems written before *The Seasons* and inspired more thereafter.[7] According to William Powell Jones, starting with John Reynolds' *Death's Vision* (1709), the first "consciously scientific" (79) long poem of the eighteenth century, authors of physico-theological poems sought to convince their readers of the goodness and wisdom of God through a discussion of his creations. In his own words, Reynolds' goal was to demonstrate God's "'incomparable power and greatness'" through "'contemplating and rehearsing some of the Creator's works'" (qtd. in Jones 82). According to Jones, Reynolds' objective "set the pattern for many physico-theological poems of the century" (82). In 1712 Richard Blackmore published *The Creation* with the hope that his poem would "bring philosophy out of the schools and make it agreeable to general conversation" (86). Beyond popularizing scientific ideas, Blackmore also wished to respond to atheism and like Reynolds, suggest the presence and wisdom of God through the beauty of his creations from the order of the heavens to the wonders of the human body. In Blackmore's poem, even God's destructive creations ranging from storms to beasts are useful in some way (storms, for instance, clear the air), testifying to God's infinite wisdom. Jones explains that between the 1720s and the 1740s "a number of long serious political essays that copiously cited the new discoveries of science to illustrate, in a sort of encyclopedic manner, the wisdom of God in nature" (107) were written. Jones argues that Thomson was the "spark" for the interest in these subjects and influenced such poems as Mallet's *The Excursion*, Richard Savage's *The Wanderer*, Samuel Edwards' *The Copernican System*, and James Ralph's *Night*.

However, when reading a poem like Blackmore's *The Creation* and *The Seasons* side by side, there are clear deviations in Thomson's poem from earlier physico-theological works. First, Thomson's poem *describes* the seasons. By setting out to describe, Thomson's poems are much less overtly rhetorical than is *The Creation*, which starts out with Blackmore's clear goal: "I would th' Eternal from his works assert, / And sing the wonders of creating art" (I.12-13). Blackmore goes on to say that his poem will elucidate the "conscious, wise, and reflecting cause" responsible for everything in the universe, the cause "Which freely moves, and acts by

Reason's laws" (I.56-7).[8] In Blackmore's poem, there is a unified, divine logic behind all creation. Thomson's poem is not nearly so coherent. There are aspects of nature, such as its infinite multiplicity, that Thomson cannot so easily express and contain.

Physico-theology remains important to this study because, according to Sambrook, "Newton's discoveries and conjectures were used to support [Thomson's] physico-theological argument which was intended to demonstrate the existence and benevolent attributes of God on the evidence of the created universe" (Thomson xxii). Significantly, it is Thomson's interest in Newton and his methods and ideas that ties Thomson to contemporary debates about number. As Thomson describes God's creations, borrowing from Newtonian discoveries and ideas including a discomfort with the infinite, he begins to expresses his own problems with number. Though Thomson was not well-versed in the technical specifics of Newton's discoveries and methods, Newton's discoveries were a great source of inspiration. In the eighteenth century, Newton was *the* great source of inspiration: "To Addison he was 'the Miracle of the Present Age,' the man of godlike mind who strengthened men's religious beliefs as he enlarged their understandings, drawing from the system of the universe scientific 'Demonstrations of infinite power and Wisdom'" (Sambrook 57-58). Thomson himself called Newton "pure intelligence" (*Summer* 1560).[9] Newton's influence in *The Seasons* is a tie to the larger British culture of the eighteenth century and is key, I argue, to the question of number as it appears in the poem.

However, because *The Seasons* is so large and so broad in terms of content, it is hard to argue for one key influence on Thomson's poem or one clear reading of it; this becomes a common thread in Thomson scholarship. Many critics have pointed out size, complexity, and Thomson's revisions as contributing factors to the inherent difficulty in arguing for a unified interpretation of *The Seasons*. Most scholars seem compelled to start out their interpretations of

The Seasons with a concession, as Shaun Irlam does, to "how difficult and complex a poem *The Seasons* is" (113). However, few have connected this interpretive difficulty to the lack of unity found in the Greek "one" as it collapses in the eighteenth century. Further complexity, disunity, and interpretive difficulties come from Thomson's blending of many genres and voices into *The Seasons*. Cohen's *The Unfolding of* The Seasons suggests that the poem's "'unifying vision' appears in the manner in which it joins eulogies, elegies, narratives, prospect views, historical catalogs, hymns, etc." (3). In large part because of this interpretive difficulty, scholars have constructed very different readings of the poem. For instance, in contrast to the general overview Sambrook offers, Blanford Parker argues that "The least important and the least representative qualities in Thomson are those of moral generalization, classical abstraction, and Christian theodicy. The existence of organic and moralizing elements points in the end to the inefficacy of teleological morality in an empirical poem" (159). Parker may have a minority opinion, as most critics argue for, if not the importance of Christian theodicy in the poem, a sense of moral instruction by the poet. Earlier readings, such as Patricia Meyer Spacks' "The Poet as Teacher: Morality in *The Seasons*," make the case for this kind of interpretation. More recently, Irlam argues that like "Dennis, Addison, Watts, Hughes, and others. . . . Thomson was concerned with reinvigorating the poet's moral authority and thus his social efficacy" (113).

Another point on which critics of Thomson seem to disagree frequently, adding to the disunity and multiplicity of Thomson scholarship, is the extent to which *The Seasons* is purposefully and usefully unified. In defending *The Seasons* against critics who found it flawed and disunified in the 1960s, Ralph Cohen argues that Thomson's unifying vision "is that God's love and wisdom, only fragmentarily perceptible in the beautiful and dangerous aspects of man and nature, will become fully perceptible in a future world. Thomson's 'vision' evokes sentiments of beauty, sublimity, benevolence, fear and anxiety so that the reader may be led to believe in, to love, to trust, and to fear God's power"(3). Cohen goes on to suggest that in *The Seasons* "organicism becomes merely another type of fragment" (3). Cohen argues for a kind of unity in *The Seasons*, but it is a unity of fragmentation through a kind of collage of many literary and religious modes and otherwise disparate visions of Nature and the nature of God. The appearance of unity is itself an illusion. And, according to Irlam, such illusions cannot sustain critical inquiry: "the diversity of [proposals for unity in Thomson] seems the best argument for the inadequacy of this line of inquiry and has for the present brought that critical history to a close" (116). Critics, then, have found immense opportunities for criticism arising out of the poem's many internal consistencies and inconsistencies of language and content. Some very recent Thomson criticism demonstrates this, as Heather Keenleyside argues that personification in *The Seasons* illuminates the complex relationship between persons and things in the eighteenth century. Hence, "the eighteenth-century predilection for personification reveals modernity to be marked less by the clear distinction between persons and things than by the persistent instability of these terms" (448).Thomson criticism, especially as it revolves around unity and fragmentation and the interpretive ramifications for *The Seasons*, reflects the terms of the problem of number in the eighteenth century. Unity and fragmentation are themselves part of the historical and ontological problem of number. Unity gives the Greek "one" its ontologically stable standing. Fragmentation is one of the key problems in the collapse of the Greek "one" and the Greek conception of number. Infinitesimals, for instance, contribute to the collapse of the unity within number when a number is split into smaller—infinitely, immeasurably smaller—pieces which have no unity of their own. Infinitesimals cannot be understood. Nor can number.

Unity constitutes a major aspect of the problem of number and Thomson scholarship, and it informs the problems of number as they appear inside the poem as well. Thomson's poem struggles with number especially as it tries to express concepts which destabilize number, such as infinity and zero. These instances and the way the poet responds to these concepts replicate the logic of sublimity and emphasize the inexpressive nature of Thomson's tropes. In these veins of inquiry, the problem of number is brought forward in the poem in two major ways. First, to glorify the Creator's creations, or at least just to enumerate them, Thomson counts. Not only is Thomson continually cataloging creations in *The Seasons*, but these catalogs portray Thomson's anxiety with the idea of infinity and God's infinite creations as well as the void. These descriptions of Nature draw attention to Nature's multiplicity or absence and, hence, its incoherence. Secondly, the speaker's resistance to the "light" of mathematical knowledge heightens the anxiety created by number and provides Thomson with a way to avoid rigorous reflection. The analysis that follows will focus first on Thomson's seasons of abundance—spring and summer—as they contain most of Thomson's catalogs and Thomson's most explicit incorporations of Newtonian concepts. It will then turn to the mathematically sublime scenes of *Winter*.

Infinity and the Void in *The Seasons*

Thomson's *Spring* displays an obsession with counting and cataloging, specifically cataloging to infinity. Paul de Man argues through a discussion of Pascal's *Réflexions* that "Man is like the *one* in the system of number, infinitely divisible and infinitely capable of self multiplication" ("Pascal" 64). Man is capable of self-division and multiplication, and is also attuned to these divisions and, especially in Thomson's poetry, the related multiplications in nature. In Thomson's poetry, the speaker often describes spring in terms of infinite multiplication. In recognition of this multiplication, the author catalogs the bounty of spring.[10] First, the speaker evokes the many different kinds of plants that the arrival of spring brings: "Then spring the living Herbs, profusely wild, / O'er all the deep-green Earth, beyond the Power / Of Botanist to number up their Tribes" (222-24). The botanist "Bursts his blind Way" through dale, forest, and mountain (225-28), but despite his efforts he cannot "number up their Tribes" or "pierce / With Vision pure, into these secret Stores / Of Health, and Life, and Joy" (234-36). Man would like to carefully catalog the many plants, but there are simply too many—an infinity. There is also an inner infinite divisibility in this passage. Even if the botanist could number all the plants, or if he just focused on one, he would not be able to access the "secret stores," the inner multiplicity of properties that the plant holds. Plants, then, in their infinite tribes and internal secret stores are multiplied to incoherence. This catalog not only suggests the infinite multiplicity of the plants, but the anxiety that is created in the recognition of plants as objects that cannot be known as thoroughly unified objects; they cannot be numbered, and they cannot be internally understood.

Summer also contains many catalogs, some recording physical wonders, others the virtues of human existence. And while the catalogs in *Summer* may seem to have a greater range, they also suggest that Thomson is trying to control his catalogs, to make them terminable and therefore manageable. The catalogs in *Spring* may only try to record British herbs or birds in one season— and yet Thomson's parade of birds still suggests infinity: the lark, thrush, wood-lark, blackbird, bullfinch, linnet, jay, rook, and daw—"Innumerous Songsters" (*Spring* 608). In *Summer*, however, Thomson catalogs "greats," exercising his gift of taste to limit the catalogs. For instance, Thomson's account of the "torrid" zone includes descriptions of many topographical figures of the lands he describes but also includes a specific catalog of great rivers in this zone, including the Nile, Gojam, Dambea, Ind, Menam, Indus, Oronoque, Orellana, and Plata Rivers (805-43). Perhaps the best example of a list of greats is also one of Thomson's most talked-about catalogs: "the numerous Worthies of the MAIDEN REIGN" (1498). This catalog extends for some eighty lines and includes figures of importance from Raleigh to Newton to the Earl of Shaftesbury. But the list does come to an end, and Thomson moves on to a different topic without equivocating about the completeness of the list. Thomson's list of worthies is closely followed by a catalog of virtues loved by the British, including peace, love, charity, truth, dignity of mind, courage, temperance, chastity, industry, activity, and public zeal (1604-19). Again, Thomson confidently ends the list, but this confidence betrays a larger anxiety: man may be able to set up limits to what is great or worthy, but nature knows no such bounds. Blanford Parker calls *Summer* Thomson's masterpiece because "it most perfectly embodies the ever expanding margins of the empirical project." Parker argues, "In such a floating panoply the intellect, the choosing power, is maddened. The eye, once the window of the soul, is now at turns ardent, nervous, feasting, hungry, roving, tired, and, at last, anxious. It has become a metonymy of the uncontrollable variety of the empirical poetic" (173). The human eye cannot take in infinity. It is this difference between man and Nature that makes the multiplicity of Nature and concepts like infinity—and the infinite multiplication or division of man and number—all the more troublesome. This multiplicity is perhaps the most troublesome aspect of nature in the poem, even compared to the moments of terrifying sublime that Thomson offers in Winter: "It may seem an inversion of common sense, but of the two evils—the boundless variety of summer or the sublime obscurity of winter—the summer is the more unsettling" (Parker 171).

Perhaps Thomson's best elucidation of an anxiety of infinity follows a catalog of spring and summer flowers: snowdrop, crocus, daisy, primrose, violet, hyacinth, jonquil, carnation, and rose. The speaker then declares: “Infinite Numbers, Delicacies, Smells, / With Hues on Hues Expression cannot paint, / The Breath of Nature, and her endless Bloom” (*Spring* 553-55). Here infinity is explicitly stated and so embodies an inherent contradiction. Thomson’s catalogs are a kind of hyperbole. They hope to express infinity, but his words, finite as they are, do not express that infinity. “Expression” is unable to express infinity; the catalogs become their own kind of series that hopes to be equivalent to infinity. Infinity can neither be expressed nor perceived in the poem and this inherent contradiction within this passage of the poem creates anxiety in the poet and renders the trope of infinity, of the catalog, incoherent. Like Newton’s approximate, fictive calculation of the area under a curve, Thomson relies on an approximation to try to encapsulate the idea of infinity.

Thomson also includes a catalog that prompts the poet to think about the other end of the numerical spectrum—zero. This catalog creates a similar kind of hyperbole and incoherence as the poet tries to evoke the void and rejoices in the fact that he has never seen it. Towards the beginning of *Summer*, Thomson describes the wondrous proliferation of creatures in the microscopic kingdom: “Gradual, from These what numerous Kinds descend, / Evading even the microscopic Eye! / Full Nature swarms with Life; one wondrous Mass / Of Animals, or Atoms organiz’d” (287-90). In the next few lines, Thomson describes many homes of microscopic life including “subterranean Cells,” “flowery Leaf,” “Stone,” “Forest-Boughs,” “downy Orchard,” “the melting Pulp / Of mellow Fruit,” and the pool which “Stands mantled o’er with Green,” where “invisible, / Amid the floating Verdure Millions stray” (304-05). This particular catalog invokes the infinite numbers of microscopic organisms, but the minuteness of the creatures leads Thomson to a discussion of nothing, the void. Thomson writes that man is lucky that he cannot see the microscopic world because he would be overwhelmed and “would abhorrent turn” (316) from the infinite amount of creatures he would see and hear; in this passage we see another manifestation of the sublime incomprehensibility of infinity and the poet's distaste for infinity.

Yet, despite this reaction to infinity, Thomson celebrates the fact that the creation is marked by (controlled) multiplicity, and asks rhetorically,

Has any seen
The mighty Chain of Beings, lessening down
From INFINITE PERFECTION to the Brink
Of dreary *Nothing*, desolate Abyss!
From which astonish'd Thought, recoiling, turns? (333-37)

The answer, apparently, is no, and Thomson urges his reader, "Till then alone let zealous Praise ascend" (338). In this passage, as Thomson discusses "Infinite Perfection" being whittled down to "the brink / of dreary *Nothing*," he replicates in poetry the logic of Newton's ultimate ratios, through which Newton explains the methods of calculus not in terms of infinitesimals, but through ratios which diminish to zero. Furthermore, "Nothing, desolate Abyss" functions much like Thomson's evocation of "infinite numbers" (*Spring* 553). Nothing and its metaphor, a desolate abyss, is not the void itself. It is something—an expression—which emphasizes the shortcomings of that expression. Again, in trying to express the opposite end of number's spectrum, poetry is thrown into incoherence.

The catalogs in *Spring* and *Summer* show one way in which number, especially the difficulty involved in conceptualizing and expressing number's greatest limits and number's absence, causes the poem to slip into tropological incoherence. As they do so, Thomson's catalogs, particularly as the poet reacts to the concepts of infinity, also embody aspects of the popular eighteenth-century aesthetic category of the sublime. Thomson has long been acknowledged as a sublime poet, and Thomson's sublimity is significant to this discussion because the aesthetics of the sublime dovetail with eighteenth-century crises over number, as the sublime signifies some immeasurable greatness—something like infinity. Thomson's reaction to infinity embodies the logic of the sublime: in sublime poetry, something incomprehensibly great is contained by language, made pleasurably accessible in Thomson's catalogs of infinity by a kind of hyperbole. This analysis will now turn to the sublime as it appears in *Winter* to explore infinity and the void within this aesthetic framework. Thomson's reactions to infinity or the void—his tropes—recall the sublime, while his reactions to the reality of the void or infinity recall the sublime's more horrifying counterpart—the terrible. Ultimately, looking at number in Thomson's poem in terms of the aesthetics of the sublime allows us to see the extent to which the sublime—the encapsulating of these terrifying categories—excuses the poet and the reader from rigorous reflection.

Number and the Sublime in *The Seasons*

Though *Spring* and *Summer* portray Nature as vigorous and benevolent, *Winter* portrays Nature as more dangerously sublime, as many critics have noted.[11] In the early eighteenth century, the sublime began to emerge as a separate aesthetic category. Figures such as John Dennis, the Earl of Shaftesbury, and Joseph Addison had begun to think about the sublime in relation to the beautiful. Thomson draws from these early writers to include sublime elements in *The Seasons*, also helping to popularize the sublime in poetry. Sambrook suggests in his introduction to *The Seasons* that Thomson thought of the sublime as the most important aesthetic in *The Seasons*, especially in *Winter*. Furthermore, Sambrook argues that Thomson's description of one of his contemporaries' poems, David Mallet's *The Excursion*, also describes Thomson's own poem: "'My Idea of your Poem is a Description of the grand works of Nature, raised and animated by moral and sublime Reflections. . . Sublimity must be the Characteristic of your Piece'" (Thomson xvii). Many of Thomson's reviewers, including Lyttelton, Holmes, and Warton, marked the presence and excellence of the sublime in his poems (Cohen, "James Thomson and The Vocabulary of the Sublime"). For instance, in his *Essay on the Writings and Genius of Pope*, Warton declares *Winter* the best poem of Thomson's *Seasons* because of its sublime elements: "Winter is in my apprehension the most valuable of these four poems; the scenes of it, like those of Il Penseroso of Milton, being of the awful, solemn, and pensive kind, on which a great genius best delights to dwell" (50). The categories mentioned here, especially the awful, refer to sublime elements of *Winter*.

After Thomson's death, Edmund Burke would further theorize the qualities of the sublime as a distinct aesthetic category in his 1757 *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful*. While the beautiful evokes pleasure through correct proportions and unity amidst variety, the sublime evokes feelings of pleasure through incomprehensibility, immensity, extreme greatness, or even terror. In describing the sublime in the *Philosophical Inquiry*, Edmund Burke writes, "Whatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the *sublime*; that is, it is productive of the strongest emotion with the mind is capable of feeling" (36). This description explains the sublime in terms of its near kinship to terror. While the sublime is the strongest emotion the mind can feel, the terrible is beyond comprehension. Later in this same section, Burke elaborates briefly on the important difference between the sublime and the truly terrible: "When danger or pain press too nearly, they are incapable of giving any delight, and are simply terrible; but at certain distances, and with certain modifications, they may be, and they are delightful, as we everyday experience" (36-37). As Thomson describes sublime objects, including winter, storms, and Nature, we will see that his descriptions encapsulate what is sublime, but often also signal what is truly terrible as well.

Winter is described in terms of the sublime throughout the poem. During winter, "The *Year*, yet pleasing, but declining fast, / Soft o'er the secret Soul, in gentle Gales, / A Philosophic Melancholy breathes" (64-66) on the observer of Nature.[12] This "Philosophic Melancholy" suggests the solemnity and pensiveness that Warton praises as sublime. Winter is also ruled by the sublime "kindred Glooms" and "Horrors" (5-6). After inviting the "kindred Glooms" and "Horrors," Thomson presents Nature in even more sublime terms:

> Nature! Great Parent! whose directing Hand
> Rolls round the Seasons of the changeful Year,
> How mighty! how majestic are thy works!
> With what a pleasing Dread they swell the Soul,
> That sees, astonished! and astonish'd sings! (106-10)

The "pleasing dread" and astonishment in this passage are key characteristics of the sublime. However, Nature's sublimity comes in part from her multiplicity—the infinite number of faces Nature wears throughout the year. Furthermore, as Nature changes, she is not always benevolent. In contrast to the benevolent Nature of abundant spring, the "Great Parent" of winter displays might and majesty, which inspire astonishment and "a pleasing Dread." This sublime moment embodies a logic similar to that which drives Thomson's dealing with infinity. Nature is a concept which is not easily contained. Both in its power and its immense variability, it is sublime. Thomson can only hope to express Nature to his readers by encapsulating its infinite faces and immeasurable power in a trope: the "Great Parent." In doing so, readers of the poem experience the pleasing dread the sublime supplies. However, as Burke's description of the sublime suggests, the terrible, the incomprehensibility and inexpressibility of the infinite or Nature's power which inspires the containment of these terrible ideas in a sublime trope, always lurks in the sublime. The sublime in *Winter* makes Nature enumerable, whereas the terrible in *Winter* points to Nature's incomprehensibility, man's inability to number the creations of Nature. Alternatively, the terrible here includes the possibility that the features of Nature are not numberless. Sublimity, then, saves the poet and the reader from truly engaging with the terrible aspect of infinity or the void.

The sublime and the terrible in Thomson's *Seasons* bear some resemblance to the symbolic and the Real in Slavoj Žižek's *The Sublime Object of Ideology*. First, the Real in Žižek resembles the terrible. It is what cannot be articulated or symbolically represented: "the Real is nothing but this impossibility of its inscription: the Real is not a transcendent positive entity, persisting somewhere beyond the symbolic order like a hard kernel inaccessible to it, some kind of Kantian 'Thing-in-itself'—in itself it is nothing at all, just a void, an emptiness in a symbolic structure marking some central impossibility" (173). The real, then, also uncannily resembles the zero, the void, which Thomson evokes again and again in *Winter* as he describes the landscape as a "glittering Waste" (798) with "desolate. . . Fields" (791). Thomson begins the conclusion of *Winter* with a description that culminates in a sense of emptiness:

> 'Tis done!—Dread Winter spreads his latest Glooms,
> And reigns tremendous o'er the conquer'd Year.
> How dead the vegetable Kingdom lies!
> How dumb the tuneful! Horror wide extends
> His desolate Domain (1024-28)

Note that in these descriptions, Thomson still encapsulates the void in language like “wintry Waste” while the terrible concept of absolute nothingness remains unexpressed. Turning back to Žižek, one might productively ask, what “central impossibility” do moments of sublimity in *The Seasons* mark? Perhaps the central impossibility of *The Seasons* is expression, the failure of language to encapsulate some concepts and, by extension, the impossibility of holding some concepts within the mind. Under this logic, it is Nature’s terribleness that keeps the poem from a unified depiction of Nature. Perhaps the recognition of the illusion of unity, initiated in part by the collapse of the Greek unified “one,” contributes to Žižek’s enthusiasm for Badiou’s *Number and Number*.[13]

An additional passage in *Summer* emphasizes the terrible, unspeakable aspects of Nature, the “Great Parent.” Thomson describes two lovers, Celadon and Amelia, who are caught in a storm while on a walk. Amelia becomes frightened, but Celadon assures her, “‘He, who yon Skies involves / In Frowns of Darkness, ever smiles on thee / With kind Regard’” (1206-8). However, only lines later, at the end of Celadon’s speech, Amelia is struck by lightning: “From his void Embrace, / (Mysterious Heaven!) that moment, to the Ground, / A blacken’d Corse, was struck the beauteous Maid” (1214-16). The actions of Nature, of the great parent, are incomprehensible to Celadon: “But who can paint the Lover, as he stood, / Pierc’d by severe Amazement, hating Life, / Speechless” (1217-19). According to Celadon’s view of Nature, Amelia does not deserve to be struck by lightning. Celadon’s confident speech and then complete speechlessness suggest the terrible behind the metaphor—Nature is no great parent for Celadon. The description of Celadon at Amelia’s tomb suggests not the sublime—a trope of containment—but the terrible. Celadon has not recovered from his brush with the terrible; instead of usefully containing the experience, he is “pierced,” irreparably damaged by severe amazement. Perhaps nothing conveys his inability to contain the terrible as well as his speechlessness; Celadon's speechlessness reduces him to a void, a kind of waste in the middle of summer. Furthermore, Thomson emphasizes that Celadon's grief cannot be "painted." His own attempt to convey Celadon's situation gives the reader a sublime portrait of Celadon's grief, but the terror inherent to Celadon's situation, the rewriting of his own natural theology, is inexpressible.

Celadon's speechlessness recalls the moments at the end of Thomson's catalogs in *Spring* where the poet can no longer describe, no longer speak as poet. His words and metaphors cannot account for the infinite: "Infinite numbers, delicacies, smells, / With hues on hues expression cannot paint, / The breath of Nature, and her endless bloom" (*Spring* 553-55). In light of these passages, perhaps the infinite multiplicity is not just anxiety producing, it is terrible, and language cannot adequately respond. Thomson bemoans the limitations of language earlier in *Spring* as well: "If Fancy then / Unequal fails beneath the pleasing Task; / Ah what shall Language do? Ah where find Words / Ting'd with so many Colours" (473-76). Note that here again part of the speaker's problems with language is that it cannot do enough—like the imagination, it cannot contain all the colors, all the multiplicity. The reader of the poem may get the sense that Thomson tries to contain the seasons' incredible multiplicity and arguable incoherence with the idea that Nature is amazingly and coherently sublime; however, the aggregate of these sublime containments yields disunity and incoherence and suggests the more terrible alternative—that there is no unity in fragmentation. As Žižek writes, "the Sublime is an object whose positive body is just an embodiment of Nothing" (206).

Retreating from Reflection

Irlam suggests that the poet in *The Seasons* is able to recover from offsetting moments of sublime epiphanic excitement partly by retreating “into ‘the quenching Gloom’ and the attendant pleasures of darkness” (141). Several scholars have noted the fact that the speaker often disappears into shades in *Summer*, as the light and heat of the Sun becomes too oppressive. I argue these moments show the poet’s unwillingness to rigorously reflect on the sublime moments he encounters. For instance, the poet flees the sun in the opening lines of *Summer*: “From brightening Fields of Ether far disclos’d / Child of the Sun, refulgent SUMMER comes” (1-2), and from the “Child of the Sun” the speaker escapes, explaining, “Hence, let me haste into the mid-wood Shade, / Where scarce a Sun-beam wanders thro’ the Gloom” (9-10). It is in this space that the speaker calls, “Come, *Inspiration*!” (15). The poet spends much of *Summer* in a shady gloom; the fact that he does so becomes more significant in terms of what the Sun, poetically, represents. When Thomson welcomes the rising sun to *Summer*, he hails it “the powerful King of Day,”

> Of all material Beings first, and best!
> Efflux divine! Nature’s resplendent Robe!
> Without whose vesting Beauty all were wrapt
> In unessential Gloom; and thou, O Sun!
> Soul of surrounding Worlds! In whom best seen
> Shines out thy Maker! (81, 91-96)

This passage draws attention to the relationship between the essential efflux of the sun, needed both for plant and animal life and for knowledge (“In whom best seen / Shines out thy Maker!”), and “unessential Gloom” which may be superfluous but is where the poet spends much of his time and seeks inspiration. The speaker wishes to avoid the direct knowledge provided by the sun, and instead prefers the gloom, which offers its own knowledge. On the speaker's propensity to dwell in gloom in *Summer*, Parker writes, "Without [the sun] every object would be 'wrapt in inessential Gloom,' the same 'Gloom' which the poet escapes to at line nine (and throughout the poem) and which holds the secret of the Creator at the end of the poem" (164). But if the Gloom holds the key to the Creator, what kind of knowledge does the essential sun impart?

For Thomson, the power of the sun is twofold. It gives light, and it also holds the solar system together. Part of the glory or power of the sun that the poet is continually trying to escape in *Summer* is that great Newtonian conceptualization: gravity. Closely following this passage, the poet describes the "Planets launch'd along / Th' illimitable Void!"(see lines 32-42) to describe the idea of gravity. In the same vein Thomson continues, "'Tis by thy [the sun's] secret, strong, attractive Force, / As with a Chain indissoluble bound, / Thy system rolls entire" (97-99). Like Thomson describes gravity as a secret, mostly unobservable force behind the "motion of bodies" (as Newton puts it in the *Principia*), so might Thomson or any other reader of the *Principia* describe the underlying mathematics that inform Newton's calculations and discoveries. Gravity is not the key "Informer of the planetary Train!" (104); instead, mathematics informs methods of the *Principia*, the discoveries therein, and the discoveries as they enter other works such as Thomson's poem. Perhaps one could argue, then, that when the poet takes refuge from the sun in *Summer*, he takes figurative refuge from mathematics, numbers—the informing methodology behind any science and physico-theology—as much as he takes refuge from the heat. Ultimately, the poet must "hide" from number and the anxiety number has caused him both in hyperbolic encapsulations of infinity and nothing and their terrible realities.

Thomson’s sublime and terrible depiction of nature emphasizes the deep sense of anxiety that the poet associates with inexpressible concepts of infinity and the void, and therefore, the shortcomings of the mind and of expression. Thomson’s inability to adequately express these concepts in tropes is resonant of other eighteenth-century concerns with controlling language, especially figurative language. At the same moment in history, mathematicians are coming closer and closer to the idea of number as a trope: a sign independent of actual quantity.[14] In this cultural moment, especially as we understand contemporary questions of number, it is possible to re-read the relationship between *The Seasons* and a larger Enlightenment project which Newton comes to symbolize. Thomson's poem, at some level, is an attempt to order the universe, to celebrate Man’s ability to understand and glorify it. For Thomson, science and therefore number is key to this project. *The Seasons*, then, articulates the inefficacy of the tools through which we harness, understand, and explain the power of Nature. Largely because of Thomson’s mostly celebratory use of science, *The Seasons* is usually seen by scholars as part of a discourse on the masterful effectiveness of Enlightenment science and rationalism; however, the poem exhibits the poet’s failure to control or explain Nature through number or word. In aesthetic terms, *The Seasons* is, therefore, not simply sublime in that it offers a way of encapsulating that which is not expressible. Instead, the poem suggests that which it cannot articulate, which is bound up in the problem of number. The problem of number offers literary critics a perspective from which to better and more fully understand the ways texts uphold and critique the Enlightenment tradition out of which they come.

Notes

[1] According to Pycior (see p. 232 and n. 62), scholars continue to debate who could be the infidel in the title. Arguments are made for Edmond Halley, who was apparently responsible for a loss

of faith in one Sir Samuel Garth; Newton himself; or mathematicians who supported the calculus generally.

[2] Pycior argues that “Berkeley’s philosophy of arithmetic and algebra was, to a certain extent, a casualty of *The Analyst*” (240). Berkeley’s most widely read works among mathematicians were *The Analyst* and its follow up, *Defense of Free-thinking in Mathematics*. These works prompted many mathematicians to focus on defending the calculus. These works also overshadowed some of Berkeley’s other works, including *Alciphron, or the Minute Philosopher* (1732), in which Berkeley describes arithmetic and algebra as “‘sciences of great clearness, certainty, and extent, which are immediately conversant about signs’” (Pycior 227).

[3] See chapter four, “The Newtonian Enlightenment,” of Jacob’s *Scientific Culture and the Making of the Industrial West*.

[4] Markley’s *Fallen Languages: Crises of Representation in Newtonian England, 1660-1740* complicates the idea that the formation of modern objective prose occurred in step with the formation of modern science. He argues this by looking at representational crises in physico-theological texts which underscore the impact of theology on modern prose. Paxson’s “The Allegory of Temporality and the Early Modern Calculus” discusses the allegorical features of early calculus as a way of understanding the semiotic and tropological aspects of early modern mathematics. Mitchell’s “The Rhetoric in Mathematics: Newton, Leibniz, the Calculus and the Rhetorical Force of the Infinitesimal” explores the rhetorical substance created for the otherwise substance-less infinitesimal through discourse surrounding early versions of calculus. Reyes argues that the rhetorical substance of the infinitesimal contributes to an epistemic shift in science and mathematics.

[5] See John Bender’s “Enlightenment Fiction and the Scientific Hypothesis.”

[6] See also Ralph Cohen's *The Unfolding of* The Seasons (1970).

[7] Works of physico-theology were popular in Thomson's day and were usually published either as a kind of textbook, such as John Ray's *Wisdom of God Manifested in the Works of Creation* (1691) and William Durham's *Physico-Theology* (1713) and *Astro-Theology* (1715), or as poems, such as Richard Blackmore's *Creation* (1712), Richard Collin's *Nature Display'd*, Henry Baker's *The Universe*, Samuel Bowden's *Political Essays*, David Mallets' *The Excursion*, and Bengaleel Morrice's *An Essay on the Universe*.

[8] This is precisely the kind of "natural theology" that David Hume would attack in his *Dialogues Concerning Natural Religion* (published posthumously in 1779). According to Hume's critique, natural religion is altogether too anthropomorphic and suggests a teleological view of God. Also fundamental to Hume's critique is the question of how man's reason can conceive of a fundamentally inhuman God, like Newton interestingly attempts in the "General Scholium" of the *Principia*. If the divine is not human, man cannot make a priori assumptions or assumptions based on natural evidence that would not be based in his own humanity.

[9] All citations for *The Seasons* refer to line numbers in Sambrook's edition.

[10] Surprisingly little criticism explores the use of the classically-rooted catalog in eighteenth-century poetry. However, scholars of eighteenth-century literature have shown interest in the list as it functions in the novel, especially the lists Crusoe makes of supplies in *Robinson Crusoe*. Recently, Wolfram Schmidgen discusses how lists in *Robinson Crusoe* provide support for a mercantilist conception of economy in the novel. Ian Watt also takes up these lists to discuss formal realism in *The Rise of the Novel*. Michael McKeon also uses lists as evidence that novels demand a higher level of detail in *The Origins of the English Novel, 1600-1740*.

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[11] Parker, among other scholars, makes this distinction. As Sambrook suggests, Thomson himself claims that the sublime is the chief aesthetic quality of the entire poem. More recently, Evan Gotlieb discusses the simultaneous rise of the aesthetic category of the sublime and significance of sight in a reading of *Winter* in "The Astonished Eye: The British Sublime and Thomson's 'Winter.'"

[12] These line numbers refer to Thomson's original version of *Winter*, which is also printed in Sambrook's edition.

[13] Zizek blurbs *Number and Numbers*: "Breathtaking. . . Badiou announces a new epoch in philosophy."

[14] According to Pycior, Bishop George Berkeley was the first to suggest that mathematicians treat numbers as pure signs. Unfortunately adverse reactions to *The Analyst* kept mathematicians from engaging this idea.

Works Cited

Badiou, Alain. *Number and Numbers*. Trans. Robin Mackay. Cambridge: Polity, 2008. Print.

Benjamin, Andrew E., Geoffrey N. Cantor, and John R.R. Christie, eds. *The Figural and The Literal: Problems of Language in the History of Science and Philosophy, 1630-1800.* Manchester: Manchester UP, 1998. Print.

Berkeley, George. *The Analyst; or, a Discourse Addressed to an Infidel Mathematician*. Ed. David R. Wilkins. 2002. Web. 10 September 2009.

Blackmore, Richard, Sir. *The Poetical Works of Sir R. Blackmore: Containing Creation; a philosophical poem, in seven-books.* London: Cooke, 1797. *ECCO*. Web. 6 Feb. 2010.

Burke, Edmund. *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*. Ed. Adam Phillips. Oxford: Oxford UP, 1990. Print.

Cohen, Michael M. "James Thomson and the Vocabulary of the Sublime." *The McNeese Review* 31 (1984): 50-57. Print.

Cohen, Ralph. *The Unfolding of* The Seasons. Baltimore: John Hopkins UP, 1970. Print.

de Man, Paul. "The Epistemology of Metaphor." *Aesthetic Ideology*. Ed. Andrzej Warminski. Minneapolis: U of Minnesota P, 1996. 34-50. Print.

---. "Pascal's Allegory of Persuasion." *Aesthetic Ideology*. Ed. Andrzej Warminski. Minneapolis: U of Minnesota P, 1996. 51-69. Print.

Drennon, Herbert. "James Thomson's Contact with Newtonianism and His Interest in Natural Philosophy." *PMLA* 49.1 (1934): 71-80. Print.

Durham, Frank and Robert D. Purrington. *Some Truer Method: Reflections on the Heritage of Newton*. New York: Columbia UP, 1990. Print.

Gottlieb, Evan. "The Astonished Eye: The British Sublime and Thomson's 'Winter.'" *Eighteenth Century: Theory and Interpretation* 42.1 (2001): 43-57. Print.

Grant, Douglas. *James Thomson: Poet of* The Seasons. London: Cresset, 1951. Print.

Irlam, Shaun. *Elations: The Poetics of Enthusiasm in Eighteenth-Century Britain*. Stanford: Stanford UP, 1999. Print.

Jacob, Margaret C. *Scientific Culture and the Making of the Industrial West*. New York: Oxford UP, 1997. Print.

Jones, William Powell. *The Rhetoric of Science: A Study of Scientific Ideas and Imagery in Eighteenth-Century English Poetry*. Berkeley: U of California P, 1966. Print.

Keenleyside, Heather. "Personification for the People: On James Thomson's *The Seasons*." *ELH* 76 (2009): 447-72. Print.

Locke, John. *An Essay Concerning Human Understanding*. Ed. Peter H. Nidditch. Oxford: Clarendon, 1975. Print.

McKillop, Alan Dugald. *The Background of Thomson's "Seasons."* 1941. Hamden: Archon, 1961. Print.

Moretti, Franco. *Graphs, Maps, Trees*. London: Verso, 2005. Print.

Nicolson, Marjorie Hope. *Newton Demands the Muse: Newton's Opticks and the Eighteenth-Century Poets*. Hamden: Archon, 1963. Print.

Parker, Blanford. "Thomson and the Invention of the Literal." *The Triumph of Augustan Poetics*. Cambridge: Cambridge UP, 1998. 136-73. Print.

Paxson, James L. "The Allegory of Temporality and the Early Modern Calculus." *Configurations* 4.1 (1996): 39-66. Print.

Pycior, Helena M. *Symbols, Impossible Numbers, and Geometric Entanglements: British Algebra through the Commentaries on Newton's* Universal Arithmetick. Cambridge: Cambridge UP, 1997. Print.

Reyes, G. Mitchell. "The Rhetoric in Mathematics: Newton, Leibniz, the Calculus and the Rhetorical Force of the Infinitesimal." *Quarterly Journal of Speech* 90.2 (2004): 163-88. Print.

Sambrook, James. *James Thomson 1700-1748: A Life*. Oxford: Clarendon Press, 1991. Print.

Sitter, John. "The Long Poem Obstructed." *Literary Loneliness in Mid-Eighteenth-Century England*. Ithaca: Cornell UP, 1982. 157-88. Print.

St. Clair, William. *The Reading Nation in the Romantic Period*. Cambridge: Cambridge UP, 2004. Print.

Thomson, James. *The Seasons*. Ed. James Sambrook. Oxford: Clarendon, 1981. Print.

Warton, Joseph. *An Essay on the Writings and Genius of Pope*. 4th ed. 2 vols. London: Dodsley, 1782. *ECCO*. Web. 6 Feb. 2010.

Žižek, Salvoj. *The Sublime Object of Ideology*. London: Verso, 1989. Print.