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**Musical Volcanoes:**

**The Aurally Sublime in Works by Jon Leifs and Robert Simpson**

 Every 20th century art form has undertaken an examination of the volcano. It has served as artistic inspiration to Andy Warhol, literary muse to Susan Sontag, and cinematic revelation to Werner Herzog. The world of music is not exempt from this theme; the volcano has inspired lyrical pop artists as diverse as Jimmy Buffett, Beck, Crowded House and Japanese speed metal band Sex Machineguns. Two mid-20th century orchestral composers, Jon Leifs and Robert Simpson, also embraced the volcano as muse. Their two pieces, entitled *Hekla* and *Volcano* respectively, share a remarkable number of moods and musical devices. I argue that both of these pieces create multi-dimensional space for the viewer, imitate various volcanic processes, and utilize a number of shared tactics to create for the listener an experience of the Kantian sublime. These pieces reveal a shared sense of wonder at the volcano, and elevate the volcano beyond the status of geologic feature into the realm of artistic muse.

 Jon Leifs and Robert Simpson were, in a rough sense at least, temporal and geographical contemporaries. Robert Simpson lived from 1921-1997.[[1]](#footnote--1) He spent his life in England, except for the period from 1986 to his death, when he lived in Ireland.[[2]](#footnote-0) Among his compositions are eleven symphonies, fifteen string quartets and several compositions for brass-only ensembles.[[3]](#footnote-1) Aside from his prolific music writing, Simpson worked as a producer and music broadcaster for the BBC.

 Jon Leifs was born in 1899 and died in 1968 in his native Iceland.[[4]](#footnote-2) He studied music in Germany and lived there with his family until 1944, when Nazi harassment forced him and his Jewish wife first to Sweden, and eventually back to Iceland.[[5]](#footnote-3) He remains famous for collecting Icelandic folk songs, and for using Iceland’s landscape and native music as inspiration for his composing.

 Leifs is also remembered for composing *Hekla*, a magnificent overture for orchestra, percussion, chorus and organ that is widely considered the loudest piece of orchestral music in existence. He composed *Hekla* after witnessing the massive Plinian explosion of the piece’s eponymous volcano in 1947. The piece was first performed in 1964, “baffling audiences and outraging critics.”[[6]](#footnote-4) The oversized and unconventional percussion section of *Hekla* includes "rocks with a musical quality, steel ship's chains, anvils, sirens, church bells, shotguns and cannons.”[[7]](#footnote-5) The piece includes a brief choral postlude that was not included at its 1964 premiere or in the recording I analyze in this paper.

 Without the postlude, the piece runs about nine minutes, though I also found a significantly faster version that runs closer to seven minutes and a slower one that clocks in at eleven. All in all, I was able to find only these three different recordings of Hekla; despite the piece’s fame, it seems that the logistical difficulties of its staging prevent it from being performed frequently. I have chosen to analyze the nine-minute version of Hekla, as it takes the middle path on tempo and was free to access via YouTube. The Helsinki Philharmonic Orchestra under the direction of Leif Segerstam released this version in 1997.[[8]](#footnote-6)

 Robert Simpson’s composition concerning volcanoes is significantly less well-known than *Hekla*. Simply entitled *Volcano*, the piece was written for the National Brass Band Championships of Britain in 1979. The little-known suite runs about twelve minutes and consists of seven short movements, noted simply by their tempos as follows: I. Calmissimo, II. Allegro, III. Meno mosso, IV. Allegroq, V. Meno mosso, VI. Allegro, and VII. Lento. Neither the piece itself nor my research suggests a specific volcano as Simpson’s inspiration for this piece. The version of *Volcano* that I analyze in this paper was the only recording of the piece I could find; the Desford Colliery Caterpillar Band, a brass ensemble founded in 1898 by miners in the English town of Coalville, performed it under the direction of James Watson. [[9]](#footnote-7),[[10]](#footnote-8)

 Several differences emerge from the biographies of these two compositions. First, *Hekla* was written about a specific experience of a particular volcano, while *Volcano* was not. Next, Simpson, despite writing many pieces for full orchestra during his life, chose to use only one section of the orchestra to reflect the volcano. On the other hand, not even an entire orchestra was enough for Leifs; he had to include additional and unconventional “instruments” to complete his desired soundscape. Third, there is a clear difference in the purposes of writing these two pieces. Simpson wrote his volcano piece to let brass bands compete and showcase their talents, while Leifs wrote his to express a personal experience. Finally, Leifs’ piece is one monumental work, while Simpson’s is a suite of seven pieces.

 Despite these differences in style, purpose and context, however, the musical choices made by the composers of *Hekla* and *Volcano* produce strikingly similar listening experiences. I have broken down this similarity into three elements that are particularly relevant to the exploration of volcano-as-musical-subject. First, these two pieces are both incredibly spatial, taking their listeners on 3-dimensional journeys through musical landscapes. Second, and related, much of the music in both pieces is imitative of volcanic processes. Finally, both composers seem interested in creating for their listeners an experience of the sublime.

 The opening moments of these two compositions immediately introduce the listener to a spatial world. Since “3-dimensional” is generally considered a visually oriented term connoting height, width and depth, it is a challenging prospect to translate this term into the world of sound. However, the beginnings of both *Hekla* and *Volcano* show this term to be equally applicable to aural experiences, if we are willing to reconsider how these three dimensions are defined. *Hekla* begins with one simple bassoon note, to which several more brass and woodwind notes are slowly added. These are added generally at a fifth above the previous notes, which are sustained over the first 30 seconds of the piece. The last thing to happen in this swell is the addition of low brass. The music becomes gradually louder, and the time intervals between note additions gradually shorten during this segment.

 This simple stack of instruments creates 3 distinct dimensions of the volcano for the listener. First, the increasing volume suggests slowly moving towards the volcano (first dimension: proximity). Second, the increasing speed of the swell evokes a feeling of greater intensity (second dimension: intensity of activity). Third, the addition of higher and lower sounds suggests looking up at the mountain and then looking down at the vast land below (third dimension: scale). The effect for the listener in these first few moments of *Hekla* is like slowly moving towards a vanishing point centered at the volcano, with everything around the listener growing in size and intensity.

 The next minute or so continue at approximately the same speed and volume as the first thirty seconds, but begin to explore the increasing range of Hekla’s “highs” and “lows” in a slow, atonal chord progression. Applying the musical dimensions here, it is as if the listener and mountain have reached equilibrium in terms of proximity and activity, and the listener is simply marveling at the scale of the mountain itself. This first 1:30 of *Hekla* constitute a remarkable musico-spatial experience, and establish the atonal musical language Leifs continues to use throughout the rest of the piece.

 The first movement of *Volcano* is eerily like the opening moments of *Hekla*. First, the instruments and general quality of sound are similar, as Leifs chose to open his piece using mostly brass and Simpson’s suite is written specifically for brass. Evidently, for these two composers, the brass section of the orchestra contains an especially appropriate set of sounds with which to discuss this majestic, geological subject. Second, the tempos at the beginning of these pieces are quite similar: Simpson entitles his first movement by its tempo, “Calmissimo” (extremely calm), which closely matches the mood of the first slow musical stack of *Hekla*. Like Leifs, Simpson also plays with quite low sounds (bassoons) and high piercing sounds (a solo trumpet line, among others) to introduce the massive scale of his subject. Through these remarkably similar tactics, the two composers introduce the listener to the volcano, setting a calm stage before the inevitable activity that is about to follow.

 The composers’ first moves following the initially calm moments of their respective pieces are also quite similar. Both begin to employ a sudden, startling strike of percussion and brass (and strings, in Leifs case). Simpson uses five of these figures in his first movement, which appear increasingly closer together; Leifs surprises the listener with just one, which then turns into an even louder swell driven by the addition of tympani. The effect in both is an increase of proximity and intensity of activity. It is as if the listener is now placed quite near the mountain, and the mountain itself is preparing for something.

 This first similarity between *Hekla* and *Volcano* is important because volcanoes are intensely dimensional objects. They are enormous landmarks that define the scientific and cultural landscapes of several world regions. Volcanoes are physically complex, containing matter that exists in all states. On the one hand, they are massive and solidly geologic, but they can also be unpredictably and violently active. Establishing a musical landscape in which the volcano is the central focal point of its surroundings and observer, as well as the chief producer of the activity in the scene, seems like the composers’ most important aim during the first few minutes of their pieces.

 The creation of multi-dimensional space continues throughout both pieces, with various changes in proximity, activity, and directionality. However, after the opening moments discussed above, the music shifts somewhat from landscape-creation to eruption-creation. Both *Hekla* and *Volcano* begin to develop musical themes that are imitative of various volcanic processes related to eruption; this is the second aspect of these pieces that produce such similar listening experiences.

 The specific narratives these pieces tell of volcanic processes diverge somewhat, though this is unsurprising considering their contexts. Jon Leifs is attempting to narrate a single eruption that he personally experienced; to that end, after the relatively quiet opening two minutes, his monolithic work continues to expand in volume and types of sound until the end of the nine minutes. On the other hand, Robert Simpson was composing for a competition setting. It seems that his goal was to create a variety of difficult pieces that would demonstrate the strengths and weaknesses of a brass ensemble; to this end, his seven movements alternate in intensity of tempo and are quite different in character. The pattern of the suite mimics a volcano with intermittent eruptive activity: the second and fourth movements are signs of increased activity by the volcano (faster and louder), but they are interspersed with periods of tentative calm (movements three and five). The peak of the eruption is reached in the penultimate movement, which is also the longest, fastest, and loudest movement of the piece. Despite the different stories established in *Hekla* and *Volcano*, however, both composers find ways to musically mimic volcanoes.

 Simpson and Leifs share several tactics in the pursuit of mimicking volcanoes. First, the sheer amount of sound produced by performers of these compositions is one way that these pieces imitate actual volcanic eruptions. In literal volcanic eruptions, a tremendous amount of pressure is relieved; part of this pressure is released as sound waves, which is the source of most of the noise associated with volcanic eruptions. Much of this “noise” has too low a frequency to be audible to human ears, though it can be felt in the body; to that end, both composers use low rumbling percussion to imitate these vibrations. However, volcanoes can also produce 100 to 120 decibels of audible sound.[[11]](#footnote-9) Reflecting this fact, both *Hekla* and *Volcano* have sustained periods of extreme sound. It is difficult to find a volume setting that can accommodate both the gentle openings and the later “eruptions” of these two pieces, and performers of *Hekla* reportedly wear earplugs during rehearsals of the piece.[[12]](#footnote-10)

 Second, the wide range of sounds produced, from the single opening note to the cacophony of multiple instruments (especially in *Hekla*) is also a physical imitation of the volcano itself. A literal volcano has a range of physical actions, from complete dormancy to increasingly violent levels of eruption. The juxtaposition of the quiet introductions and the overwhelmingly loud climaxes of these pieces reflect this fact.

 Third, there are several specific musical themes in both pieces that imitate the eruption of a volcano. For instance, both use a variety of ascending and descending runs in the brass lines. In *Volcano*, a striking ascending line appears in the first 20 seconds of movement four, while the descending figures show up in :29-1:00 of the same piece. I consider these and other similar runs in the “Allegro” movements to be imitative of lava rising within the volcano and then falling on the slopes of the mountain. These rising and falling figures start to appear in the second and fourth movements, but become fully developed and begin to run in both directions at the same time in movement six, signally the peak of the eruption.

 The percussion section in *Volcano* also aids in the production of explosive sounds. For instance, a particularly unique percussion noise comes from the tympani at :49 of movement six. The drum is struck heavily, but immediately dampened. This produces an aural effect like a bursting bubble, and evokes the boiling of volcanic rock. Other unique effects include frequent underlying tympani to lend more depth to the “explosive” movements, and a snare drum that creates a march-like sensation and drives the forward motion of those movements.

 Finally, *Volcano* ends with a recapitulation of the first movement’s solo trumpet theme. It seems that the last movement could easily lead back into the first, suggesting that the volcano is a cyclical and persistent place-event. Movement one drew the listeners into the volcanic landscape with this theme; hearing it again allows the listeners to return to their original vantage point, though changed by the explosive journey on which they were led.

 In even more exaggerated terms, *Hekla* also showcases several musical ideas that mimic the volcano. As this piece was written about a specific eruption, it is perhaps easier to connect certain musical choices with the actual event. For instance, the initial swell of the music happens without warning, breaking through the otherwise calm landscape. This is quite similar to the initial 1947 eruption of Hekla, which occurred unexpectedly.

 *Hekla* also shares *Volcano*’s ascending and descending motifs that sound like lava rising up through the mountain’s cone into the air, before falling on the mountainside. A tremendous amount of material was expelled from Hekla during the 1947 eruption. This event added 14 meters to the mountain’s height and produced a 28,000-meter ash column that would eventually affect areas as far away as Russia.[[13]](#footnote-11) It is appropriate, then, that Leifs would imitate this impressive upward motion in his music; he uses high and low brass, as well as the siren for the ascending motifs. The descending motion is less pronounced, and is generally left to the string section, except for one section starting at 4:00 during which the entire orchestra descends and ascends as one.

 The percussion section also aids greatly in Leifs’ pursuit of volcanic noise. The undampened cymbals around 5:20, for instance, evoke the hiss of fire and water colliding. As the lava flows of the 1947 eruption did not reach the ocean, perhaps this is meant to recall the molten rock meeting the snow and ice on Hekla’s flanks. Also, the low tympani, drums and cannons produce subterranean sounds that, even on a recording, are felt more as vibrations in the body than as sound waves.

 Besides these varied musical motifs, Leifs also wanted to be more literal about his interpretation of volcanism. To that end, his score provides lines for rocks, an anvil, cannons and a siren. The clanging of (what I assume is) the anvil and the siren are incredibly alien sounds in the midst of the orchestra. These unconventional instruments evoke the otherworldliness of a volcanic eruption. Witnessing an active, violent volcanic eruption is a rare experience, akin, one might suppose, to placing an anvil in an orchestra.

 These composers employ several similar figures and themes in their volcano compositions, most of which mirror the processes of volcanoes themselves. In both pieces, the combined effect of these and other musical choices create a listening experience that lands squarely in the realm of the *sublime*. Kant’s consideration of the sublime provides a definition that is particularly appropriate to this analysis. His simplest definition for sublime is something compared to which “everything else is small” and that “to which the imagination fruitlessly applies its entire ability to comprehend.”[[14]](#footnote-12) In Kant’s judgment, humans consider “sublime not so much the object as the mental attunement in which we find ourselves when we estimate the object”; clearly for him, the sublime is not the thing itself, but the observer’s experience of it.[[15]](#footnote-13)

 The Kantian sublime is a concept that is easily applied to literal volcanoes; in fact, he includes volcanoes and “all their destructive power” on a list of natural objects that constitute his ideal of the sublime in nature.[[16]](#footnote-14) In a similar way, the musical volcanoes created by Simpson and Leifs can be considered sublime experiences. The two composers use several similar choices to achieve this sense of the sublime. These include the afore-discussed opening motifs, the nontraditional chord structure and intervals employed in the pieces, and the use of unexpected variations in tempo.

 The first similar tactic in creating the musically sublime appears in the foreboding rise of music and sudden swell of sound found during the first moments of both *Hekla* and *Volcano*. This musical figure speaks directly to another of Kant’s observations concerning the sublime; he writes that the sublime “is produced by the feeling of a momentary inhibition of the vital forces followed immediately by an outpouring of them that is all the stronger.”[[17]](#footnote-15) In *Hekla* and *Volcano*, the vital forces are the musical instruments, which are initially calm, but then “outpour” suddenly and loudly at the beginning of each piece’s “eruption”. This musical motif is a metaphor for a literal volcanic eruption in which the vital force is the geological material that is suddenly expelled. For the human observer of either a musical or literal volcano, the vital force is one’s emotions that are first inhibited through fear of the sublime object, but then overflow during the observation. In this Kantian way, the quiet swell and sudden release into intense noise employed by both composers draw together the sensory, metaphorical and emotional experiences of the sublime.

 Second, both Simpson and Leifs employ musical patterns that sound dissonant and strange, especially to the Western ear. Both pieces are generally atonal, meaning they are not written in any distinguishable key. The lack of key signature means there is never a feeling of resolution, or returning home to the tonic chord; the listener cannot predict where the piece is going to “end up” tonally. The development of atonality is a major divide between 19th and 20th century orchestral music, and both composers use it to their advantage.

 Atonality also means the pieces are not major or minor. Leifs and Simpson do not shy away from this fact; they both draw attention to it by using several repeated open fifths in their opening themes. In Western classical music, a simple triad consists of the tonic (home key), dominant (fifth above the home key), and a third between them; the placement of the third determines whether the chord is major or minor. The bold omission of the third in the introductions of both pieces draws attention to the fact that composers do not want to classify their pieces as either major or minor, and that conventional musical language is insufficient to adequately express the volcano.

 Similarly, both pieces use tritones frequently. The tritone is an interval composed of three whole tonal steps, and is usually employed by Western composers to denote rare moments of dissonance and tension. However, *Hekla* and *Volcano* are crammed with tritones. The most interesting tritone example comes in the last seconds of *Volcano*’s final movement, during which Simpson sneaks in a single descending tritone in the lowest regions of the bass line. It seems as though he wants the last word on the subject of volcanoes to be one of foreboding instability.

 In the midst of all this dissonance, however, both composers create familiar moments that contrast the strange instruments and musical patterns employed. *Hekla* for instance, has glorious moments of major and minor that alternate during the height of the musical eruption. The effect on the listener is one of not knowing from second to second what is going to happen next, even though every chord is more beautiful and more resolute than the last. Creating grand and familiar musical moments in the midst of chaos, while never letting the audience know when one is coming or what it will sound like is crucial to the creation of an aurally sublime experience. The strange and unfamiliar instruments and chord structures make the piece a bit incomprehensible, while the familiar moments and majestic, roaring sound make the piece a rich, sensory entity that is easier experienced than understood. Here, again, we encounter the musically sublime.

 Finally, Simpson and Leifs treat rhythm in their volcano pieces similarly to how they handled tonality. At times, very conventional march rhythms anchored by percussion drive on the musical eruptions. However, both composers also employ syncopation at irregular intervals. Overall, both pieces have multiple and inconsistent senses of rhythm, leaving the listener constantly curious for the next move. Emblematic of Kant’s sublime, the irregularity and unpredictability of both tone and rhythm in these pieces render the listener’s mind “fruitless [in] its ability to comprehend.”

 Kant could very well be describing either a literal or musical volcano when he writes that the sublime “elevates our imagination, making it exhibit those cases where the mind can come to feel its own sublimity."[[18]](#footnote-16) There is clearly something about the volcano that cannot be entirely comprehended, and it seems that the composers of *Hekla* and *Volcano* were trying to express just that in their musical reflections of the object. Through their creation of dynamic musical space, mimicry of volcanoes, and unconventional choices in chord structure, rhythm and volume, both Jon Leifs and Robert Simpson create sublime musical experiences for their listeners.

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3. "The works of Robert Simpson." *Robert Simpson*. The Robert Simpson Society, n.d. Web. 12 May 2010. <http://robertsimpson.info/works.html>. [↑](#footnote-ref-1)
4. Benson, Robert. "Music of Jon Leifs." *Classical CD Review*. N.p., n.d. Web. 12 May 2010. <http://www.classicalcdreview.com/leifs.htm>. [↑](#footnote-ref-2)
5. "Jon Leifs." *Wikipedia: The Free Encyclopedia*. Wikimedia Foundation Inc., 24 Apr 2010. Web. 12 May 2010. <http://en.wikipedia.org/wiki/Jon\_Leifs>. [↑](#footnote-ref-3)
6. Benson. [↑](#footnote-ref-4)
7. Ibid. [↑](#footnote-ref-5)
8. Leif Segerstam & Helsinki. “Hekla.” Earquake. Ondine, 1997. [↑](#footnote-ref-6)
9. James Watson & the Desford Colliery Caterpillar Band. “Volcano.” *Simpson: Music for Brass.* Hyperion, 1991. [↑](#footnote-ref-7)
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11. Vergniolle, Sylvie. "Volcano Music." *Acoustics.org*. N.p., 2008. Web. 12 May 2010. <http://www.acoustics.org/press/155th/vergniolle.htm>. [↑](#footnote-ref-9)
12. Benson [↑](#footnote-ref-10)
13. "Iceland: Hekla Volcano." *Iceland on the Web*. N.p., n.d. Web. 12 May 2010. <http://iceland.vefur.is/iceland\_nature/Volcanoes\_in\_Iceland/hekla.htm>. [↑](#footnote-ref-11)
14. Kant, Immanuel. *Critique of the Power of Judgment*. Trans. Werner Pluhar Indianapolis: Hackett, 1987. 105. [↑](#footnote-ref-12)
15. Ibid. 110. [↑](#footnote-ref-13)
16. Ibid. 120. [↑](#footnote-ref-14)
17. Ibid. 98. [↑](#footnote-ref-15)
18. Ibid. 121. [↑](#footnote-ref-16)