

ARTICLES

Provocative Atmospheres, Refracted Nations, and the Performance of Light

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130 searchlights touch the sky, enclosing thousands of uniformed bodies, flags, torches, and drums within the walls of an icy cathedral. The atmosphere is one of reverence, wonder, and celebration.

Light beckons, envelops, enfolds, excludes.

Hundreds of coloured lights advance up a hill, creating ever-shifting patterns that direct the bodies of moving participants and the eyes of intrigued spectators. The atmosphere is one of excitement, concentration, and play.

Light runs, choreographs, constellates, disperses.

Introducing Light

Light pervades. Whether signalling Truth, Reason, Progress, or Faith, or facilitating movement through the most banal of tasks in our everyday lives, light performs. It is perhaps the most ubiquitous physical phenomenon and one of the most frequently cited tropes of discovery, artistry, and invention in fields across the arts and humanities. How often have you seen (particularly in the performing arts) light operating through metaphors relating to its qualities or effects: spotlight, limelight, illuminate, flame, spark, bright, (out)shine, light up, radiate? Or noticed its invocation via its apparent absence: darkness, blind spot, shadow, dim, blackout? Light acts as the medium through which we access these written words, even before we enter the complex system of language. Given this condition, how can we write about light as the subject and medium of performance when we intimately rely on light to understand our worlds, all that occurs within them, and all that is written about them?¹

We ask these questions not simply because we aim to topple long-standing binaries that privilege the human over the nonhuman or more-than-human (though this continues to be an important goal for us), but because we want to understand how light as a performing entity has contributed to the production of provocative atmospheres at large-scale public events. Intrigued by the United Nations Educational, Scientific and Cultural Organization (UNESCO) designation of 2015 as the “International Year of Light and Light-Based Technologies,” we ask how light as both an immaterial and material phenomenon makes (visible) material relationships.² How does it direct human movement and work in tandem with other environmental factors to shape our appearance and experience of the surrounding world?

Our study draws on recent scholarship on “affective atmospheres,” a concept variously defined by cultural geographers and sociologists as “a quality of environmental immersion that registers in and through sensing bodies while remaining diffuse, in the air, ethereal” (McCormack 2008, 413),

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“assemblages of humans and the more-than-human [that] are greater than the sum of their parts” (Sumartojo 2004, 60), and an “indeterminate, spatially extended quality of feeling” (Böhme 2013, 118). Studies of affective atmospheres have investigated public festivals, civic celebrations, scientific expeditions, urban and domestic spaces, and nightlife, and have traced the various ways that architecture, technology, weather and moving bodies affect or even “perturb” one another, leading to the production of a distinctive atmosphere or geocultural environment (Anderson 2009; Ash 2013; Edensor 2012; McQuire 2005; Sumartojo 2004; McCormack 2008). Several of these studies explore the “materiality of atmosphere in terms that are simultaneously meteorological and affective” (McCormack 2008, 414). Such work addresses the tendency within the humanities and social sciences to treat meteorological phenomena (e.g., the sky) as immaterial or “sublimated to thought” and insists instead on “the *animate agency* of phenomena such as wind, frost, ice, and fog” (415).

Within theatre and performance studies, the “affective turn” has resulted in a number of important publications, including those by Erin Hurley (2010, 2012), Sara Warner (2012), and José Esteban Muñoz (2006), among others. For our purposes, Hurley’s term “feeling-technologies” is especially helpful in that it foregrounds the affective influence of theatrical “mechanisms” such as “lighting, architecture, and audience control,” all of which “orient the spectator’s senses—notably, her vision and hearing—to the action onstage by effectively reducing the number of stimuli competing with the onstage performance” (2010, 28). Although Hurley’s emphasis is less on light per se, her recognition that light directs how and what an individual feels, both sensually and emotionally, while watching a performance provides a valuable jumping-off point for our own considerations of light’s ability to stir emotion and guide human behaviour.³

Our essay extends these conversations by focusing a performance studies lens on light.⁴ Such a lens allows us to bring light to light, so to speak, to accentuate its role as medium, actant, and provocateur, and to trouble practices of seeing light as incidental rather than fundamental to all performance. Following Christopher Baugh’s compelling description of theatre as “fundamentally a place of darkness that is energized and brought to life by the performance of light” (2005, 135), our case studies focus specifically on nighttime performances where light figured prominently as an animating force. Though we hesitate to adopt the term “affective atmospheres,” due to what we perceive as an inclination to over-privilege the human as the (only) affected and feeling subject in some of the resulting analyses, we nevertheless find such cultural geography definitions useful for thinking about how collaborative, immersive performance events constitute a particular (sociopolitical, artistic, ecological, etc.) environment and climate. For that reason, we deploy the variant term “provocative atmosphere,” firstly, to describe situations where the atmosphere incites, stimulates, or goads action, where it compels bodies to move and “produces an action, reaction, condition” (*OED*) and, secondly, to characterize these captivating events as important contributions to performance studies. By concentrating on light’s role in generating provocative atmospheres, we suggest that the ubiquity of this seemingly banal phenomenon is precisely what makes it a crucial conditioning factor in performances of all kinds, whether they take place inside or outdoors, during the daytime or at night.

Like scholars in cultural geography and elsewhere, we approach light not as a passive entity that merely supports human performers but as an animating performer in its own right, one that manifests, shapes, and disperses provocative atmospheres. In this respect, we forward philosopher David A. Grandy’s astute observation about Einstein’s theory of special relativity and its

understanding of light speed as *the* constancy by which other phenomena are measured. Grandy asserts, “light speed constancy is a consequence of the fact that upon measuring the speed of light, we are already complicit with light” (2009, 4). We face the same compelling challenge and dilemma here: in approaching a performance of light, we must contend with light’s conditioning of our experience before, during, and after it, and our complicity with it.

By acknowledging light’s conditioning power, we do not claim that it is (necessarily) more significant than its human collaborators. Those who attack new materialist perspectives for discounting, dismissing, or even degrading the human fail to recognize that many (though admittedly not all) new materialist scholars remain deeply committed to the underlying politics of “old” materialism, especially where operations of power are concerned.⁵ Such scholars do not ignore the human subject, but rather aim to shrug off the racist, sexist, ableist, imperialist, and anti-environmental baggage of Western humanism in order to advance a more nuanced and complex understanding of the interdependency and inter(in)animation of all living and non-living entities.⁶ As Robin Bernstein argues in *Racial Innocence* (2011), this new materialism acknowledges that we cannot talk about race without talking about the objects that script human actions and work in tandem with human subjects to secure white hegemony. This new materialism offers critical tools for thinking about how human subjectivity is forged with and through an engagement with more-than-human entities, from the toothbrush that helps keep our teeth and gums healthy every day to the wind that shapes our physicality when we walk down the street. By turning to light, we work to reveal an integral part of everyday life that we too often take for granted or fail to acknowledge.

Yet despite our unabashed embrace of methods and questions active in new materialist analyses, we admit that there is nothing particularly new about recognizing the vital materiality of the nonhuman or more-than-human—indeed, as artists and theorists have shown, belief in the dynamism and liveliness of environments, objects, and forces has persisted for centuries in myriad cultures, religions, and societies.⁷ So, too, we recognize that there is nothing inherently progressive about identifying the dynamism and liveliness of the more-than-human world (as we demonstrate, Adolf Hitler’s belief in a mystic form of vital materiality undergirded his architectural vision for the Third Reich). Light emanates over and through all entities, and so the performance history of light is as complex, dynamic, and varied as the light spectrum itself.

Borrowing the metaphor of the light spectrum, this essay primarily, and self-reflexively, investigates light as a generator and mediator of two very different kinds of immersive public events separated by more than seventy years: the National Socialist party rallies in Nuremberg, Germany during the 1930s and the 2012 NVA (*nacionale vita activa*) performance installation, *Speed of Light*, in Edinburgh, Scotland. We realize that this comparison may seem unorthodox; however, as we pondered the performance history of light we were struck by the similarities and critical differences between these two events, which we might in fact place on opposite ends of a spectrum. Each large-scale, outdoor night assembly included hundreds of human “participant-observers” and featured light as a primary, central performer within a larger network of architectures, geographies, technologies, and human- and non-human bodies. Each performance worked to unite its participant-observers (however temporarily) and produce strong feelings of collectivity. But the performances varied greatly in terms of technology, dramaturgy, and, more significantly, the sociopolitical impetus for each, as well as the kind of “provocative atmosphere” produced. Whereas floodlights and verticality shaped the Nuremberg rallies, small LEDs worn on bodies and glowing walking staffs created a horizontalizing effect in *Speed of Light*. And whereas the “Cathedral of Light” that illuminated Zeppelin Field

enfolded Nazi celebrants within an icy embrace,⁸ the electric lights that moved with and alongside the *Speed of Light* participants invited them to reflect on athletic endurance and collective art making. Thus we offer less a straightforward comparison between the two events than a nuanced reading of the singularity of their material conditions and light's operation through/with/in them. We do this by focusing on how light performed and generated provocative atmospheres and how these atmospheres, in turn, assembled humans, objects, technologies, environmental forces, and political ideologies into a collective, if fleeting, expression of national belonging. In this, we follow the work of Shanti Sumartojo and others who have shown how the strategic “manipulation of the built environment [through illumination] helps to ‘engineer’ affect to official ends, and thereby construct the nation through spectacular events” (2004, 60).

Before we turn to our case studies, let us say a few words about the style and structure of this essay. At times we attempt to “inch closer” to light’s performance by addressing its various dimensions and directions; at other times we attempt to “step back” from the light to interpret and theorize its impact in a specific performance environment. Marlis begins this movement by probing the Cathedral of Light; Joanne follows by scrutinizing *Speed of Light*. In each section of the essay, we take turns forwarding our individual case studies, sometimes paragraph by paragraph. As we do so, metaphors—which we understand as a mode of translation—become our awkward dance partners, helping us to make sense of a certain rhythm or gesture within each performance event. We then offer our thoughts on the notion of a “refracted nation” as seen through the lens of each light performance. Just as the light in our case studies bathes humans, non-humans, and environments, so too does it suffuse our scholarly method of delineating its dynamic features. As you may have ascertained by this point, writing about light is tricky. Yet we embrace our missteps as a necessary methodological condition to investigating these performances through which we glimpse the “agency of light” (Bille & Sørensen 2007).

Light Generates Provocative Atmospheres

Marlis: Cathedral of Light

When the last rays of the September 1934 sun disappeared over the horizon, 130 anti-aircraft searchlights took their place, shining bright electric beams skyward to penetrate the blackness of night. Positioned along the periphery of Nuremberg’s Zeppelin Field, these beams illuminated the parade grounds where thousands of members of the *Nationalsozialistische Deutsche Arbeiterpartei* (NSDAP) or Nazi Party gathered to recognize their party’s past, celebrate its present, and anticipate its future. The annual rallies brought together hundreds of thousands of Party functionaries from across the country; these included “men from the SA and SS, the Labour Service, the Hitler Youth, and girls from the ‘Bund Deutscher Mädel’” (Thamer 1996, 172), all of whom made the journey to Nuremberg “to be protagonists or supernumeraries in the ornament of the masses or to form an applauding audience” (172). While many events occurred during the day, the most spectacular were those held at night, when the light emitted from the powerful searchlights not only marked but constituted the performance space of the Nazi rally. Reaching miles into the sky, this ghostly Cathedral of Light shaped the gathering’s atmosphere and the actions of those moving within it, enclosing all human and non-human entities within its blazing collectivity.



The Cathedral of Light above the Zeppelintribune, 1936. Bundesarchiv, Bild 183-1982-1130-502/CC-BY-SA 3.0

Joanne: *Speed of Light*

While light also directed the physical and emotional movements of *Speed of Light (SoL)*, the motivation behind this immersive event as well as the impact and nature of its light differed significantly from the Cathedral of Light. Inspired, in part, by the 2012 London Olympics, NVA artistic director Angus Farquhar and his team of human and non-human collaborators set into motion a network of activities—performances, exhibits, talks, workshops—that spoke across the arenas of science, sport, and art. The most visible elements of *Speed of Light* coalesced around the nightly walks and runs in Edinburgh’s 640-acre Holyrood Park, the apex of which is Arthur’s Seat, 251 meters (823 feet) high. By day the dormant volcano that is Arthur’s Seat resembles a crouching lion that neighbours a bank of cliffs, the Salisbury Crags. At night the distinct geological features fade into a darkened mass. Here, twice nightly during *SoL*’s three-week duration, small lights and the runners or walkers who carried or wore them coproduced a two-hour event for themselves and for all those who could see them.

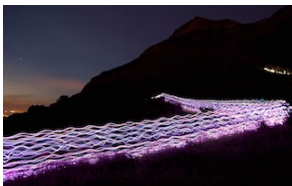
Marlis: Accessing the Cathedral of Light

Light poses unique challenges for performance historians because it is at once and always past, present, and future. The light that illuminates the room I am sitting in now has travelled 150 million kilometers (93 million miles) from the sun in just over eight minutes to reach me.⁹ And yet I cannot follow its trail back to its source. In the case of the Cathedral of Light, I can travel back in time via film to witness a highly mediated version of the spectacle in Leni Riefenstahl’s *Triumph of the Will* (1935), the infamous documentary film of the 1934 Nuremberg rallies specially commissioned by

Adolf Hitler. Watching a DVD version of the film on my laptop, I observe the beams of electric light as they scorch through the black and white film, casting an eerie glow over Zeppelin Field and a “sea of flags” flowing into the arena. Or I can refer to still photographs posted on websites and published in books, where the light beams appear as frozen white columns that illuminate the architectural forms of the parade grounds, diminishing the human participants who fill it. Or I can turn to the detailed account of this enthralling light in Albert Speer’s controversial memoirs, *Inside the Third Reich* ([1969] 1970), wherein the architect and the Nazi party’s “chief decorator” proudly describes his brilliant design innovation, first introduced in 1934.¹⁰ But while none of these sources affords direct access to the spectacle and its originating light source, they invite me to read through the gaps, to find the light radiating from the film or bouncing off the page. What is required, then, is not so much reading against the grain as reading through and with light. Such a reading must not only take into account light’s material characteristics—source/type (sunlight, fire, electricity), location, modes (bright vs. dim) (Bille and Sørensen 2007, 269)—but also acknowledge light’s immaterial or evanescent qualities.

Joanne: Approaching *Speed of Light*

My access to *SoL* also comes at a distance in temporality and geography, as I was not in Edinburgh during its run. I approach this event through my embodied knowledge of walking, mostly during the day, on several occasions through the terrains that comprise Holyrood Park as well as through my scholarly curiosity about NVA’s multi-disciplinary public art projects over the years (Zerdy 2013, 2014). The videos, photographs, event program, web pages, and articles that I have consulted and the daytime conversations I have had about *SoL* shape my understanding of its nocturnal unfolding. In particular, the videos and photographs act as dynamic, if partial, vestiges of a performance whose recorded footage and disseminated images point to an intentional blurring of past, present, and future. By this, I mean that these archived visual traces often show wavy lines or streams of light piercing the dark summer night. As such, these recording technologies appear to privilege a lapsing of time over a distinct instant, a kind of refraction, in creating a dramatic artifact of this ephemeral performance. As with the Cathedral of Light, the nighttime darkness provides a crucial counterpoint to the multi-colored lights on the go on Arthur’s Seat. It mediates the light’s performance as the light itself mediates the larger performance project set into motion by NVA. The glowing screens of computers and smartphones reveal these lingering shapes today.¹¹



Click on the thumbnail to view a photo essay of NVA’s *Speed of Light*.

Marlis: Monumentality of the Cathedral of Light

As an evanescent architectural form, the Cathedral of Light departed from the stone buildings and marble monuments favoured by Adolf Hitler. In his memoirs, Speer describes Hitler’s fervent belief in architecture’s vital materiality, especially its potential to influence national feeling and “speak” to nations of their “former power” during periods of decline or weakness. Through stone and statuary, the Führer declared, the glory of the Third Reich would emanate forth for millennia and provide a “bridge of tradition” that would incite new deeds long after he and his followers were dead ([1969] 1970, 93).¹² In Hitler’s vision of the future, Germany’s physical foundation—the stone, marble,

wood, cement, and other materials that constituted the built environment— would exist in a state of perpetual movement, pushing the next generation ever forward (a process akin to the creation of land itself through geological forces). Although Speer notes that “naturally, a new national consciousness could not be awakened by architecture alone,” he nevertheless endeavoured to create long-lasting “architectural works” that would “speak to the conscience of a future Germany” (93).¹³

Given Hitler’s demand for architecture that would proclaim permanency and stability, the luminescent cathedral that brilliantly yet temporarily scorched the Nuremberg night sky might seem out of place within the broader frame of Nazi aesthetics. To fully appreciate the strategic purpose of this skyward-directed spectacle, then, I propose to read it alongside the other human and non-human entities performing within the Nuremberg parade grounds. Illuminated on the fifth night of the party rally, during the parade of the *Amtswalter*—the “middle and minor party functionaries” responsible for “various organizations affiliated with the NSDAP” (Speer 96)—the Cathedral of Light bound human participants through luminescence in an embodied declaration of national unity. But more than this, the bright light in its capacity as a “feeling-technology” upstaged the lacklustre performances of the *Amtswalter* men, whose “sizable paunches . . . could not be expected to line up in orderly ranks” (96), and who therefore undermined the Nazi party by failing to project unity, strength, and coordination. To prevent their embarrassing materiality from disrupting the solemnity of the rally atmosphere, Speer embraced light’s ability to disguise, manipulate, and redirect the human eye (Bille and Sørensen 2007, 271) and arranged for *Amtswalter* to enter Zeppelin Field at night. Under the brightly illuminated sky, the men marched down ten long lanes flanked by columns of flag-bearers carrying local flags from across the country. No longer visible as distinct individuals, the men’s disguised bodies merged with the flags, creating a potent assemblage of Nazi symbolism.

Worried that the “dramatic effect” of using spotlights to illuminate the flags and the “great eagle” mounted above the central podium was insufficient, Speer asked Hitler to let him use 130 aircraft searchlights for the rally. Hitler agreed to the request, suggesting that the lights could serve a valuable political purpose: “If we use them in such large numbers for a thing like this,” he reportedly insisted, “other countries will think we’re swimming in searchlights” (Speer 96). Hitler tellingly anticipates that the lights will not only affect the Nuremberg attendees but also evoke a powerful suite of emotions in other world leaders—awe, anxiety, fear—feelings that may lead them to think twice before questioning Germany’s military capabilities or challenging Hitler’s plans to establish a Third Reich.

Joanne: Designing *Speed of Light*

During this twenty-night event, light performed with and through the technology developed to create the runners’ light suits and walkers’ staffs. *Speed of Light*’s physical impact on the terrain was foremost in the minds of NVA. With the goal of creating a very small carbon footprint, they designed equipment that could self-generate the necessary electricity but they were only partially successful in implementing it. The runners’ light suits evolved through multiple prototypes and trials, details of which reside on NVA’s website.¹⁴ Ultimately, the team decided on a “stick man” design that consisted of LEDs (light-emitting diodes) on adjustable straps worn over a runner’s clothes. After testing various “power generating” techniques, NVA found that each hindered runners’ movements too much; they then incorporated a rechargeable battery pack (small enough to avoid discomfort) into the suit. Four thousand runners wore 120 light suits over the course of the event.

While the running suits were unable to generate their own electricity to produce the necessary light, the walkers' staffs accomplished this goal. Designer James Johnson walks us through the components:

As the walker strides along the impact of the stick striking the ground forces one of the magnets to oscillate through the copper coil, the movement generates a small electrical current on the down and up stroke within the coil. The oscillating magnet is held sprung within the coil by a second magnet at the base of the tube that acts as a return spring. (2012, n.p.)

These actions created an alternating current that powered the staff's glow. The generation of this radiant energy manifested through the collaboration between, among other elements, the staff's individual components, principles of physics, designer conceptualizations, labourers who assembled the staffs, equipment that manufactured each piece, vehicles that transported them, the walking *SoL* human bodies, the terrain, the changeable weather conditions, the intensity of the moonlight, and the nightly darkness that mediated participants' experiences. The currents of imagined design, creative problem-solving, and active implementation aligned as humans and technological movements fell into step. Reflecting on his participation in *SoL* as first a walker and then a runner, performance studies scholar Andrew Filmer observed that the light staff "drew my attention to the rhythm of my footsteps, to the tactile nature of my contact with the ground. The staff wasn't heavy, but it made the walk something considered" (2012, n.p.). The staff accentuated the act of walking. Light, as the mediator between ground, staff, and Filmer, fashioned a mobile, contemplative disposition. In photographs that show the staffs as a group of mobile supports that accompanied human walkers, I notice how their luminescence connected separate bodies spread across an expansive area. Peter Davey writes: "Without light, form and space have little meaning to most of us" (qtd. in Bille & Sørensen 2007, 265). Throughout *SoL*, light provided form and manipulated space. For example, the physical composition of the light staff worked in tandem with the luminescence produced by it to help shepherd these performers around this uneven and at times precarious terrain.

Marlis: The Cathedral of Light's Provocative Atmosphere

Speer implicitly recognized light's agency and its "capacity to shape the relationships among people and between people and objects" (Sumartojo 2004, 62) when he turned to illumination as a strategy for disguising problematic human bodies. To accomplish this feat, he placed the 130 searchlights around the edge of the flat parade grounds "at intervals of forty feet" (Speer [1969] 1970, 96) to achieve what he hoped would be a balanced, harmonious effect.¹⁵ The result greatly exceeded his expectations. "The actual effect far surpassed anything I had imagined," he recalls. "The hundred and thirty sharply defined beams . . . were visible to a height of twenty to twenty-five thousand feet, after which they merged into a general glow" (96–97).¹⁶ The effect of the rigid, pillar-like beams disintegrating into a soft enveloping glow transformed the mood and the overall atmosphere at Zeppelin Field, not to mention the flag-bearing *Amtswalter*. As Speer notes:

The feeling was of a vast room, with the beams serving as mighty pillars of infinitely higher outer walls. Now and then a cloud moved through this wreath of lights, bringing an element of surrealistic surprise to the mirage. I imagine that this "cathedral of light" was the first luminescent architecture of this type, and for me it

remains not only my most beautiful architectural concept but, after its fashion, the only one which has survived the passage of time.¹⁷ (96–97)

Speer's account of the "luminescent architecture" emphasizes the searchlights' surprising power and their collective transformation of Zeppelin Field into a provocative atmosphere—"a vast room" upheld by "mighty pillars" that altered the bodies and other entities gathered within it by casting them, quite literally, in a different light.¹⁸ This effect becomes apparent in *Triumph of the Will* when the individual bodies of the *Amtswalter* entering Zeppelin Field at night dissolve into a "sea of flags" that appear to dance and wave in the glow from the lights. Here, the searchlights designed to quickly identify enemy threats do not mark threatening individuality but rather support a feeling of harmonious collectivity (Sumartojo 2004, 62). Indeed, I find it significant that while Riefenstahl spends considerable time focusing on the faces and bodies (individual and collective) of party celebrants in her recording of daytime festivities (see, for example, the Hitler Youth rally), her night scenes showcase the dynamic blurring of stone, body, flag, and light, with the telling exception of Hitler himself. Standing on a raised platform with shining microphones before him and the huge "great eagle" behind him, he appears as a singular demigod surrounded by a halo of light.

Speer's use of religious metaphors to describe the Cathedral of Light and its provocative atmosphere are also telling in this regard. While existing photographs of the cathedral's "sharply defined beams" suggest that the overall effect/affect may also have been like standing inside a military fortress surrounded by a force field of light, Speer avoids military metaphors altogether. Instead, he compares the spectacle by turns to a wreath and a cathedral, stressing the religious/ritualistic aspect of the experience in order (presumably) to impress on readers the magnificence and beauty of his "architectural concept." Yet Speer's "concept" was susceptible to unpredictable, unseen atmospheric forces, which meant that the provocative atmosphere it produced was likewise vulnerable. Whenever clouds moved through the "wreath of lights," they transformed the spectacular "mirage" into a "surrealistic surprise,"¹⁹ creating an almost dream-like vision. Here, the searchlights quite literally merged with the physical atmosphere, the "turbulent zone of gaseous matter surrounding the earth and through the lower reaches of which human and non-human life moves" (McCormack 2008, 413), provoking Speer and possibly others to reflect differently on their surroundings.²⁰ As they transformed the "mirage" into a "surprise," the clouds delighted onlookers and possibly even alerted them to the spectacle's precarity and impermanence. Significantly, as Speer's use of the word "mirage" implies, the unpredictability, ceaseless movement, and uncontrollability of the clouds and other weather (rain, wind) stood to disrupt or undermine the controlled choreography of the Nuremberg rally by emphasizing its illusory quality. Clouds passing through the searchlight beams pointed trailing fingers at the trickery of the Cathedral of Light and in so doing hinted at the impossibility of a three-thousand-year Reich. Writing decades later, Speer acknowledged the power of light to transcend time and human life (including his own) when he described the Cathedral of Light as not only his most beautiful architectural concept but also the only one that has "survived the passage of time" (Speer 97). Whereas Hitler longed for a glorious built environment that would provide a lasting source of inspiration for successive generations of Germans, it was the enticing potential of searchlight beams to transform the night sky into a magnificent cathedral that endured.

Joanne: *Speed of Light's* Provocative Atmosphere

Each night, walkers and runners assembled and then, moving at different paces, set off up paths led by guides. With light staffs in hand, walkers slowly ascended the hill en masse. At a certain altitude, each staff emitted a buzzing sound, creating a soundscape to accompany the evolving lightscape.²¹

Once they reached the summit, walkers handed the lit end of the staffs to volunteers who assembled them into a large structure that sent out flashes of light while emitting low sonic sounds. Walkers eventually made their way back down the hillside on their own. Meanwhile, maintaining equidistant positions along the route, runners coordinated their movements via silent hand signals from a run leader. With lighted batons in hand, they ran in straight lines, fanned out to make various geometric shapes, jogged in place, or stood still. As they did, the small lights worn on their bodies allowed the groups to generate striking images of varying colors as off-site designers communicated wirelessly with the suits. Theatre critic Joyce McMillan observed the movements as “pink-blue star-bursts, crosses and circles” (2012, n.p.). Critic Andrew Dickson described the choreography as “spinning slowly around in wobbly ellipses, clustering tightly in nodes, racing together to a single point then emitting outwards like a burst of energy into black space” (2012, n.p.).²² The runners’ movements were perhaps most compelling when seen from a physical distance such as elsewhere in Holyrood Park or on the city streets below.

The provocative atmosphere generated here was one of playful anticipation and, especially for the runners, measured endurance. This atmosphere provoked a reconsideration of, first, the individual human, and second, of humanist centrality within the wider world in which we live. *SoL* disclosed how the individual human ultimately yields to the primacy of the multiplicity around her. Both runners and walkers operated in groups, collectively forming geometric patterns. The atmosphere required humans to rely on one another to create a coherent artistic event and because of the physical conditions that could make their ascent a potentially dangerous series of steps. Dickson sees in *SoL* “a vast community-created spectacle that crossbreeds high-tech digital light show with ancient land art, robotic choreography with eerie sound installation” (2012, n.p.). This linking of “ancient land art” and “robotic choreography” suggests an out-of-timeness or a layering of embodied temporalities and histories within the performance that points to the event’s potential to exceed its present unfolding in 2012.

This provocative atmosphere goes beyond a marshalling of individual bodies into a creative and critical mass. Aided by the darkness of night, the light outshone and, in the recorded images, outlasted the human. Although human bodies wore the equipment that produced light’s luminescent quality, the materiality of the lights distanced the humanness of the participating humans. Not only did the individual human (designer, runner, walker) fade into the group, but also the human qualities of the group receded. Between the darkness of the night, the distance up and around the hill, and the functioning of the light suits, it was very difficult to discern the human, individual or otherwise, not completely unlike what happened to the portly *Amtswalter* bodies, as discussed by Marlis.²³ The same difficulty remains today if you view the event through photographs and video clips online. Indeed, NVA director Farquhar observed, “At distance, the runners lose a human scale and appear as pure points of light, angles distort and gravitate against single interpretation. They can be imagined as different phenomena within the visible universe” (2012, n.p.).²⁴ This marks one of several crucial differences between *Speed of Light* and the Cathedral of Light.²⁵ Whereas Speer and the searchlights worked together to amplify the rhetoric of the humans at the centre of the Nazi party (most notably Hitler), the *SoL* designers and Farquhar took an explicit step back and away from the event. Arguably, the runners and walkers played a supporting role in highlighting the spectacular nature of light—especially when it appears in nighttime’s darkness—as evidenced by the fact that the play of light and dark cloaked their identities during the event, and in many visual traces of *SoL*, I find it difficult to distinguish between the human participants.

SoL's light, amplified through the walkers and runners, performed at different scales and with different effects/affects. The apparatus within each staff generated a localized source of illumination that shone on the ground beneath its carrier's feet, warning the walker of potential hazards and creating a reliance on this glowing stick. The shifting choreographies emerging between the walkers and runners (whose light suits twinkled more than they glowed) called to mind confluences of radiant energy and humans in other kinds of artistic performance.²⁶ Here, individual will gave way to collective, synchronized movements. The moving light staffs and suits also drew the attention of people elsewhere in Edinburgh toward the park and Arthur's Seat, offering a curious, if not dynamic, experience of nighttime lighting away from the seemingly stationary light sources arranged on streets and buildings or the familiarity of snaking headlights of city buses and taxis.

Refracting the Nation

The Cathedral of Light and *Speed of Light* manifest illuminating collective performances that simultaneously form and refract national assemblages at two significant historical moments. Here, we draw on refraction's definition from physics: "The fact or phenomenon of light, radio waves, etc. being deflected in passing obliquely through the interface between one medium and another or through a medium of varying density" (*Shorter OED*). The multi-layered media of each performance described above contains its own built and sociopolitical architectures, geocultural terrains, and technological inputs (searchlights, walking staffs et al.) and outputs (videos, books, photographs, websites, etc.) that allow us to access it partially today. This process of refraction exists in and is performed through provocative atmospheres. Indeed, as the word refracted suggests, the performance of light at and within these large outdoor events ultimately reveals not a singular nation but an oblique contingent of nations, groups, and alliances that briefly share a moment of felt unity.²⁷

Marlis: On Zeppelin Field

The NSDAP rallies served many goals—marking key moments in the Nazi party's history, commemorating the fallen, inspiring the next generation, enhancing the power of the party's leaders, especially Hitler—but their primary purpose was projecting to Nazi party members, Nazi enemies, and the rest of the world a coherent image of a united Germany. As Hans-Ulrich Thamer writes, "The principle [*sic*] objective behind these massive spectacles was to offer visual evidence of the German community united behind its leader" (1996, 172). The Nazis required visual evidence of solidarity in order to expunge memories of economic hardship, the embarrassment of the Treaty of Versailles, and divisions within the ranks of the German government. It is significant that *Triumph of the Will* documents the 1934 Nuremberg rally, held less than three months after the "Night of the Long Knives," the period between June 30 and July 2, 1934, when politicians and leaders associated with the paramilitary unit *Sturmabteilung* (or the SA) were systematically murdered. As such, Riefenstahl's propaganda film offers a potent record of the efforts undertaken by Hitler, Speer, and the other Nazi leaders to project the image of a cohesive, legitimate whole after a period of intense inter-party violence. Hitler's speeches on the rally theme of "unity and strength," delivered over the course of the eight-day event, stress the importance of purification (i.e., eradicating the Jews and other "inferior" people) to the larger project of returning Germany to its glorious past. This project was far from completion, but the spectacle of Nuremberg in 1934, where Speer's "purposefully choreographed illumination" (Sumartojo 2004, 62) made its spectacular debut, offered visions of a glistening future within reach.

At Zeppelin Field, the admixture of anti-aircraft searchlights with red flags and golden ribbons, grey stones and grassy fields, and human bodies dressed in party uniforms produced a provocative atmosphere where feelings of excitement, pride, and devotion blurred with awe and even fear (Sumartojo 2004, 62) into one declaration of love for the nation and its demagogic leader. This was never clearer than on the fifth night of the rally when flags representing communities from across Germany entered the arena alongside hundreds of marching men as individual searchlights flooded the night sky until they blurred into a single blanket of light. Here was a refracted nation of bodies, flags, stone, united through illumination; in this case, the light quite literally moved through and around the various entities it encountered, “passing obliquely through . . . a medium of varying density” (*Shorter OED*). Indeed, Hitler’s evocative image (recalled by Speer) of Germany swimming in a sea of searchlights hints at the formation of a new kind of nation performed by and with light, with beams radiating throughout and above the country and far beyond its borders to illuminate all of Europe. The light beams, blazing out of the darkness, shone unidirectionally, not in a piercing quest for an invisible enemy above but in a collective gesture of strength and unity that showcased Germany’s technological athleticism and impressive military capabilities on the ground. These 130 light beams, each contributing to the greater whole, provided a metaphorical model for Hitler’s ideal Germany even as they collectively shaped the performances of the rally participants, producing an atmosphere that was reverent, intense, and blindingly clear. For those looking up from Zeppelin Field, the lights offered persuasive evidence of the Nazi party’s totalitarian reach into the lives and homes of all Germans, igniting feelings of pride, devotion, and love, feelings that would ideally continue to burn long after the rally had ended. Missing, of course, from this projection of a united nation was any hint of dissent, of disagreeing voices or nonconforming bodies (though Speer’s open admission that the Cathedral of Light was born out of a desire to hide the paunches of party functionaries is illuminating in itself). Such absences were critical to the Nazi’s larger political project. Thus in their capacity to disguise, redirect, or deflect spectators’ eyes, the searchlights encouraged a collective act of refraction, one that involved looking beyond or passing through undesirable bodies. At the same time, this act of refraction also invited participants to embrace key party ideas, to absorb something of the atmosphere into their bodies, to carry within themselves the promise and hope stirred by the light. In this way, the Cathedral of Light primed the Nazi party members to face the future, singly and together, as members of a refracted nation.

Joanne: In Holyrood Park

A strikingly different refracted nation shone quite brightly for three weeks in August 2012 through the prism of *Speed of Light*, a contribution to the London 2012 Festival and Cultural Olympiad. Other light performances competed for public attention in the weeks leading up to the Summer Olympics, none more spectacular than the Olympic torch relay, which journeyed nearly 8000 miles through the British Isles. Hundreds of human participants, vehicles, objects, and, of course, the torch’s blazing light collaborated to engender this public performance that sought to connect disparate communities across the UK while inviting them to watch the Olympic festivities and to demonstrate their pride for their homeland. Arguably, not everyone outside of (or even within) the metropolitan centre that hosted the Olympics felt unified in athletic and nationalistic kinship. While the relay afforded opportunities to relatively few people to participate as torch-bearers, *SoL* issued forth a much broader invitation to anyone who could make their way to Edinburgh. Whereas the Olympics prompt national pride for athletes repeatedly identified by their home country, *SoL* manifested a much more subtle, dispersed, blurry notion of nationhood and belonging.

If the Olympics contributed (in terms of creative impetus and funding) an international valence to *Speed of Light*, another supranational dimension took shape through *SoL*'s participation in the Edinburgh International Festival (EIF).²⁸ In the summer months, the EIF contributes to the Scottish capital's cosmopolitanism when artists, critics, tourists, and arts programmers from across the globe circulate through the city, seeking out performances and spectacles of all kinds.²⁹ *Speed of Light*'s placement within the cultural programming of the Olympics and the EIF ensured that non-Scots would perform alongside residents of Scotland as participant-spectators.

Another dimension of the refracted nation materialized through *Speed of Light* closer to the performance venue or "attuned space" that emerged nightly in Holyrood Park (Böhme [1993] 2013, 5). From Arthur's Seat, a walker or runner could apprehend the distinct outline of the Scottish Parliament buildings below. This government institution marks a devolved Scottish nation (a "stateless nation" as it is sometimes called) with partial autonomy over its domestic and (considerably less say over its) foreign affairs. The Parliament had designated 2012 as the "Year of Creative Scotland" (perhaps due to the increased visibility anticipated from the upcoming Olympics); staging *SoL* in 2012, then, meant that it would help to showcase the ingenuity of NVA and other Scotland-based arts organizations. While there would be no coherent, recognizable "Scottish" dimension to *SoL*, arguably its emphasis on exploring, investigating, and highlighting topological features in the Scottish capital could be understood as an emphasis on *Scotland* itself. Yet, NVA did not intend for the event to secure a contingent of devoted, national(ist)-minded Scots who would work together to unify their devolved nation into an independent state. Indeed, as the public referendum on independence held in Scotland two years later on September 18, 2014 revealed, the majority of Scotland's residents were unwilling to separate from the United Kingdom.³⁰ At least, not yet.³¹

From the perspective of the Scottish nation, I turn to the sociopolitical roots of NVA's work. Here the "*nacionale*" of their name (*nacionale vita activa*) jumps out, yet the first part of NVA's name deflects the idea of a clearly defined or stable *polis*. In NVA's words, the phrase "express[es] the Ancient Greek ideal of a lively democracy, where actions and words shared among equals bring new thinking into the world" (NVA 2015, n.p.). Manifesting "new thinking" is quite a provocative and potentially far-reaching artistic practice. NVA has worked with rural and urban communities and environments across Scotland to create arts projects that challenge habitual understandings of a place by foregrounding a particular locale (forest, hillside, urban square, garden, ruins of a seminary), and by working with and from the land in various shades of light and darkness. That anyone could take part in *SoL* suggests that while the event overlooked the Scottish Parliament, this was no single Scottish collective on the move. While most participants had the physical ability to walk or run in *SoL*, the immersive artwork also included opportunities for participants in off-road wheelchairs to take part. This inclusive ethos projected the idea that shifting relationships, alliances, and bodies were integral to the constitution of always unfolding political formations, even in the most everyday environments. This dimension of the event stands in sharp contrast to the image of able-bodied participants among the Nazi ranks at the Nuremberg rallies.

On completion of *Speed of Light* in Edinburgh, the light suits experienced a second life when *SoL* reappeared in Yokohama, Japan (October 2012); Salford Quays, Manchester, England (March 2013); and Ruhr, Germany (October 2013).³² With light and physical movement still key components, *SoL* then morphed into *Ghost Peloton*, which featured lit bicycles dancing in Leeds, England (May 2014) and then in NVA's home city, Glasgow (November 2015).³³ While delving into these iterations of *SoL* is beyond this essay's scope, I note how these international movements and artistic adaptations

tap into the horizontalizing effect of its genesis in Edinburgh. Moreover, the refracted nation in Edinburgh takes on a new dimension as these light suits connect the bodies of Japanese, Germans, English, and many other nationalities back to the contingent of bodies that wore them in 2012. Perhaps what *SoL*'s inter- and trans-continental movements make visible, then, is an artistic solidarity that exceeds the nation, refracted or otherwise.

Conclusion

Light, and therefore all light performance, moves continuously along a spectrum—embracing, enfolding, choreographing, running, unifying, dispersing, splintering. It affects humans and all other beings, entities, and forces that come within its seemingly limitless reach. Yet light's ubiquity, its throbbing omnipresence, means that we often fail to notice it; we take it for granted or simply ignore it while experiencing the world it mediates. Terms that operate as metaphors—such as illumination, spectrum, enlighten, spotlight, and refraction—help us to read and interpret collective cultural and artistic performances in a fresh, new way. Indeed, by deploying such metaphors, performance studies scholars can usefully bridge the arts and sciences, in keeping with the goals of many new materialist studies. Thus by attending to the scientific meaning of words such as “refraction” and by paying attention to the relationship between science, technology, and the natural world, we hope to have widened the scope of performance analysis and modelled new ways of reading with and through light.

While the Cathedral of Light and *Speed of Light* emerged from and responded to very different sociopolitical agendas at very different moments in history, each event drew attention to the power of light to shape collective action. And in framing and bringing together bodies, objects, and environmental and technological forces in close proximity, the light played a crucial role as agent in generating provocative atmospheres. Our hope is that by attending to light and its role in the production of these atmospheres, we might develop a more nuanced understanding of how light guides our everyday actions, our artistic creations, and our political alliances. And perhaps through this understanding, we might also develop greater compassion and respect for the rest of the human and more-than-human world that shares this light.

Notes

1. For example, light is often understood as an instrumentalized feature of a theatre production design that makes visible actors, sets, costumes, etc. The lighting designer also (ideally) supports the look or mood of a performance. Understood in this context, emphasis placed on a production concept or the functioning of instruments can quickly obscure the role of light itself. Even when artists challenge a simplistic or static understanding of lighting design and offer a more nuanced, interactive approach to lighting practice, the primacy of the designer may still take focus. See Hunt (2013).
2. We note that UNESCO's focus on light technologies emphasizes human innovation and technological mastery of lighting in “light science.” The official Year of Light website nevertheless acknowledges light's agentic qualities, observing how “Light plays a vital role in our daily lives and is an imperative cross-cutting discipline of science in the 21st century. It has revolutionized medicine, opened up international communication via the Internet, and continues to be central to linking cultural, economic and political aspects of the global society” (n.p.) See UNESCO (2015).

3. We also wish to acknowledge the July 2016 Performance Studies international conference, taking place in Melbourne, Australia, which centres on the theme of “Performance Climates” and included keynote addresses from Bruno Latour, Rebecca Schneider, and Peta Tait.
4. Gernot Böhme uses the example of the stage set to illustrate how atmosphere can be produced. Echoing early performance theorists, he notes that, “The art of atmospheres, as far as it is used in the production of open-air festivals or in the build-up to large sporting events such as the Football World Cup or the Olympic Games, is their staging” ([1993] 2013, 5). He continues, “staging has become a basic feature of our society” and “the paradigm of the *stage set* for the art of generating atmospheres therefore mirrors the real theatricalisation of our life” (2013, 6). He concludes by suggesting, “there is much to be learned from the great tradition of stage set design” (6), but he curiously fails to acknowledge any existing scholarship on the subject.
5. For a more extensive overview of new materialist scholarship and our perspective on the same, please see Schweitzer and Zerdy (2014).
6. We nod here to Rebecca Schneider’s use of the term inter(in)animation, which she borrows from Fred Moten and John Donne to “suggest the ways live art and media of mechanical and technological reproduction . . . cross-constitute and ‘improvise’ each other” (2011, 7).
7. See, for example, Cabranes-Grant (2014), Swift (2014), Vosters (2014), Werry (2010), and Willerslev (2007).
8. British Ambassador Henderson compared the experience to “being in a cathedral of ice” (qtd. in Speer [1969] 1970, 97).
9. Scientists estimate that it takes 8 minutes, 20 seconds for sunlight to travel from the sun to the earth, at a rate of 300,000 kilometers per second (Cain 2013, n.p.).
10. Most (if not all) historical accounts of the NSDAP party rallies make reference to the Cathedral of Light. Not surprisingly, these accounts tend to stress the creative mastery of the man and tend to overlook the directorial influence of the lights or other entities on the rally participants. Joshua Hagen and Robert Ostergren challenge these tendencies by demonstrating how spectacle and architecture combined at Nuremberg to “legitimate and glorify the regime, enhance the personal charisma of Adolf Hitler and imbue within the masses a strong sense of National Socialist community and purpose” (2006, 158). Yet while Hagen and Ostergren acknowledge the importance of light to the production of a “participatory landscape,” they focus primarily on the built environment of stone structures: podiums, grandstands, memorials, and auditoria.
11. For a slideshow of several of these captured movements, see Anonymous (2012).
12. In writing about the Cathedral of Light, I draw extensively from Speer’s memoirs. I realize the limitations of relying on such a problematic and controversial source, especially one that (as numerous scholars have pointed out) pointedly avoids discussing Nazi atrocities and omits answers to troubling questions about Speer’s knowledge of and/or involvement in such atrocities. On the problems of Speer’s account and Speer’s relationship with Hitler, see Sereny (1995) and Kitchen (2015). Other studies of Nazi theatre, performance, and spectacle include Gadberry (1995) and London (2000).
13. Speer redesigned Zeppelin Field by replacing temporary bleachers with a “permanent stone installation” featuring a “mighty flight of stairs topped and enclosed by a long colonnade, flanked on both ends by stone abutments” (Speer [1969] 1970, 92). The design for the Cathedral of Light came later.
14. For details about the technology development, see NVA, “Speed of Light Edinburgh” (2012a).
15. Speer does not explain why he decided that the forty-foot distance between lights was optimal, though presumably he experimented with other spacing options before settling on this one.
16. It is unclear how Speer knew that the lights would be visible at this height, though perhaps he gleaned this information from his military colleagues, who most certainly would know how high the beams could reach.

17. What Speer neglects to mention is the extent to which his use of light drew on earlier civic light spectacles created with the goal of uniting mass audiences in a singular expression of social harmony. For example, between 1915 and 1918, Claude Bragdon, an architect and critic in Rochester, New York, produced a series of “Festivals of Song and Light,” wherein thousands of lights and lanterns transformed city parks into a joyful atmosphere of civic unity at night. Bragdon characterized his designs as a “cathedral without walls.” Through the synthesizing of colour, light, and music, he sought to unite huge crowds in a collective performance that surpassed differences of age, class, and religion (though presumably not race). Such spectacles, he argued, offered powerful demonstrations of “the rule of a people by its *demos*, or group soul” (qtd. in Massey 2006, 579).
18. Hans-Ulrich Thamer describes the “rampart of flags and beams of light [that] shielded the inner circle from the darkness of the outside world” as a “symbolic expression of the Manichean conception of the National Socialist world” (1996, 182).
19. I wonder whether Speer is referencing Buñuel and Dalí’s film *Le Chien Andalou* (1929), where the image of a cloud’s movement across the moon is spliced with the apparent cutting of a woman’s eyeball. If Speer intended this comparison, was he trying to situate the Cathedral of Light within a surrealist genealogy? I find this rather peculiar, though fascinating, given the Nazi designation of artworks and movements such as surrealism as “degenerate art.”
20. Böhme defines physical atmosphere as “the earth’s envelope of air which carries weather” ([1993] 2013, 2).
21. Although I am focusing on the light that shaped *Speed of Light*, it’s important to mention the audio component. Andrew Filmer describes the effect as “an auditory equivalent to the individual runners responding to each other to make patterns of light” (2012, n.p.).
22. For full reviews of the event, see NVA, “Speed of Light Edinburgh Reviews” (2012).
23. Observes Filmer: “The lights indicated where [the runners’] bodies were, but abstracted their actual physical presence. Just the outline of a form, moving” (2012, n.p.).
24. Farquhar’s use of “distortion” recalls for me the contraction of space and time that occur at the speed of light. Travelling at this rate, one would no longer see distinct boundaries, unfolding in chronological time, in objects or environments. For further reading on Einstein’s theory of relativity as it relates to the arts and humanities, see Grandy (2009) and Shlain (2007).
25. I have used capitals throughout to mark the Cathedral of Light as a distinct spectacle.
26. Here I am thinking about dance company Chunky Move’s *Mortal Engine* (2008).
27. Sumartojo has similarly shown how, after D-Day, the British government “used urban space [including floodlights] to fashion a narrative of national unity, timelessness and stability for public consumption” (2004, 65).
28. The festival commenced in 1947 with hopes that it would enrich the cultural life of the UK and Europe in the aftermath of the devastation caused in large part by Germany’s military might that rained down from the sky during WWII.
29. For analysis of the Edinburgh festivals as national and globalizing, see Harvie (2005).
30. With a turnout of 84.59% of the electorate (which included enfranchised sixteen- and seventeen-year-olds), 55.3% voted against and 44.7% voted for independence. For more on the referendum and Scottish devolution, see Scottish Parliament (2014).
31. It will be very interesting to see how the progressive energy galvanized by the referendum materializes in Scotland in the coming months. While the Scottish National Party achieved a third victory (46.5% of the constituency vote share) in the May 2016 parliamentary elections, they did lose six seats. The following

month, a majority of voters in the UK voted to leave the European Union; however, 62% of voters in Scotland voted to remain. These results are already fuelling talk of a second independence referendum.

32. For information about and images of the different performances of *Speed of Light*, see NVA “Speed of Light” (2013).

33. For information about and images of *Ghost Peloton*, see NVA, “Ghost Peloton” (2014).

References

- Anderson, Ben. 2009. “Affective atmospheres.” *Emotion, Space and Society* 2: 77–81.
- Anderson, Benedict. 1991. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. ed. London: Verso.
- Anonymous. 2012. “Edinburgh Festival 2012 to Open with NVA’s Speed of Light Art Installation.” *The Telegraph*, n.p. Accessed 31 March 2016. telegraph.co.uk/culture/culturepicturegalleries/9464166/Edinburgh-Festival-2012-to-open-with-NVAs-Speed-Of-Light-art-installation.html?frame=2304852.
- Ash, James. 2013. “Rethinking Affective Atmospheres: Technology, Perturbation and Space Times of the Non-human.” *Geoforum* 49: 20–28.
- Baugh, Christopher. 2005. *Theatre, Performance and Technology: The Development of Scenography in the Twentieth Century*. Basingstoke: Palgrave Macmillan.
- Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.
- Bernstein, Robin. 2011. *Racial Innocence: Performing American Childhood from Slavery to Civil Rights*. New York: New York University Press.
- Bille, Mikkel, and Tim Flohr Sørensen. 2007. “An Anthropology of Luminosity: The Agency of Light.” *Journal of Material Culture* 12 (3): 263–84.
- Böhme, Gernot. (1993) 2013. “The Art of the Stage Set as a Paradigm for an Aesthetics of Atmosphere.” *Ambiances*: 2–7.
- Cabranes-Grant, Leo. 2014. “Translocalized Drums: Mobilizing the Intercultural in the *Cantares Mexicanos*.” In *Performing Objects and Theatrical Things*, edited by Marlis Schweitzer and Joanne Zerdy, 214–27. Basingstoke: Palgrave Macmillan.
- Cain, Fraser. 2013. “How Long Does it Take Sunlight to Reach the Earth?” *Universe Today*, April 13, n.p. Accessed January 11, 2015. <http://www.universetoday.com/15021/how-long-does-it-take-sunlight-to-reach-the-earth/>.
- Chunky Move. 2008. *Mortal Engine*. n.p. Accessed March 31, 2016. vimeo.com/11767805.
- Dickson, Andrew. 2012. “Edinburgh Sees the Light in Show that Will Run and Run.” *The Guardian*, August 10, n.p. Accessed March 31, 2016. <http://www.theguardian.com/culture/2012/aug/10/edinburgh-run-speed-of-light?newsfeed=true>.
- Edensor, Tim. 2012. “Illuminated Atmospheres: Anticipating and Reproducing the Flow of Affective Experience in Blackpool.” *Environment and Planning D: Society and Space* 30: 1103–22.
- Farquhar, Angus. 2012. “State Art and Spiritual Collectivism.” *Speed of Light Programme*. n.p.
- Filmer, Andrew. 2012. “Re: Following Up from PSi. . .” Message to the author. September 27.
- Gadberry, Glen W. 1995. *Theatre in the Third Reich, the Prewar Years: Essays on Theatre in Nazi Germany*. Westport: Greenwood Press.
- Grandy, David A. 2009. *The Speed of Light: Constancy + Cosmos*. Indianapolis: Indiana University Press.
- Hagen, Joshua, and Robert Ostergren. 2006. “Spectacle, Architecture and Place at the Nuremberg Party Rallies: Projecting a Nazi Vision of Past, Present and Future.” *Cultural Geographies* 13: 157–81.

- Harvie, Jen. 2005. "The Edinburgh Festivals: Globalisation and Democracy." In *Staging the UK*, 74–111. Manchester: Manchester University Press.
- Hunt, Nick. 2013. "Exosomatic (Light) Organ: Creating and Using an 'Expressive Instrument' for Theatre Lighting Control." *International Journal of Performance Arts & Digital Media* 9 (2): 295–313.
- Hurley, Erin. 2010. *Theatre & Feeling*. Basingstoke: Palgrave Macmillan.
- Hurley, Erin, and Sara Warner. 2012. "Affect/Performance/Politics." *Journal of Dramatic Theory and Criticism* 26 (2): 99–107.
- Johnson, James. 2012. "Technology." *Speed of Light*. Accessed March 31, 2016. nvaspeedoflight.org.uk/#!/page/21/Technology.
- Kitchen, Martin. 2015. *Speer: Hitler's Architect*. New Haven: Yale University Press.
- London, John. 2000. *Fascism and Theatre, Theatre Under the Nazis*. Manchester: Manchester University Press.
- Massey, Jonathan. 2006. "Organic Architecture and Direct Democracy: Claude Bragdon's Festivals of Song and Light." *Journal of the Society of Architectural Historians* 65 (4): 578–613.
- McCormack, Derek P. 2008. "Engineering Affective Atmospheres on the Moving Geographies of the 1897 Andrée Expedition." *Cultural Geographies* 15: 413–30.
- McMillan, Joyce. 2012. "Review: Speed of Light, Arthur's Seat, Holyrood Park, Edinburgh" *The Scotsman*, August 10. Accessed March 31, 2016. <http://www.scotsman.com/what-s-on/theatre-comedy-dance/review-speed-of-light-arthur-s-seat-holyrood-park-edinburgh-1-2461185>.
- McQuire, Scott. 2005. "Urban Space and Electric Light." *space and culture*: 126–40.
- Morris, Nina. 2011. "Night Walking: Darkness and Sensory Perception in a Night-time Landscape Installation." *Cultural Geographies* 18 (3): 315–42.
- Muñoz, José Esteban. 2006. "Feeling Brown, Feeling Down: Latina Affect, the Performativity of Race, and the Depressive Position." *Signs* 31 (3): 675–88.
- NVA. 2012a. "Speed of Light Edinburgh." Accessed March 31, 2016. nvaspeedoflight.org.uk/#!/location/edinburgh/.
- NVA. 2012b. "Speed of Light Edinburgh Reviews." Accessed April 21, 2016. nva.org.uk/artwork/speed-light-edinburgh/#tab-4.
- NVA. 2013. "Speed of Light." Accessed April 21, 2016. nvaspeedoflight.org.uk/.
- NVA. 2015. "About." Accessed April 21, 2016. nva.org.uk/about/.
- "Provocative." 2007. *Oxford English Dictionary*, 3rd ed. Accessed January 11, 2015. <http://www.oed.com.ezproxy.library.yorku.ca/view/Entry/153510?redirectedFrom=provocative-eid>.
- "Refraction." 2002. *Shorter Oxford English Dictionary*, 5th ed., Vol. 2. Oxford: Oxford University Press.
- Riefenstahl, Leni. (1935) 2001. *Triumph of the Will*. DVD. Bloomington: Synapse Films.
- Schneider, Rebecca. 2011. *Performing Remains: Art and War in Times of Theatrical Reenactment*. London: Routledge.
- Schweitzer, Marlis, and Joanne Zerdy. 2014. "Introduction: Object Lessons." In *Performing Objects and Theatrical Things*, edited by Marlis Schweitzer and Joanne Zerdy, 1–17. Basingstoke: Palgrave Macmillan.
- Scottish Parliament. 2014. "Referendum on Independence." Accessed March 31, 2016. <http://www.scottish.parliament.uk/parliamentarybusiness/67687.aspx>.
- Sereny, Gitta. 1995. *Albert Speer: His Battle with Truth*. London: Methuen.
- Shlain, Leonard. 2007. *Art & Physics: Parallel Visions in Space, Time, and Light*. New York: Harper Perennial.

- Speer, Albert. (1969) 1970. *Inside the Third Reich*. Translated by Richard and Clara Winston. New York: Avon Books.
- Sumartojo, Shanti. 2004. "Dazzling Relief: Floodlighting and National Affective Atmospheres on VE Day 1945." *Journal of Historical Geography* 45: 59–69.
- Swift, Christopher. 2014. "Technology and Wonder in Thirteenth-Century Iberia and Beyond." In *Performing Objects and Theatrical Things*, edited by Marlis Schweitzer and Joanne Zerdy, 21–35. Basingstoke: Palgrave Macmillan.
- Thamer, Hans-Ulrich. 1996. "The Orchestration of the National Community: The Nuremberg Party Rallies of the NSDAP." In *Fascism and Theatre: Comparative Studies of the Aesthetics and Politics of Performance in Europe, 1925-1945*, edited by Gunther Bergaus, 172–90. Providence, Oxford: Berghahn Books.
- UNESCO. 2015. "About the Year of Light." Accessed January 11, 2015. <http://www.light2015.org/Home/About.html>.
- Vosters, Helene. 2014. "Military Memorialization and Its Object(s) of Period Purification." In *Performing Objects and Theatrical Things*, edited by Marlis Schweitzer and Joanne Zerdy, 104–17. Basingstoke: Palgrave Macmillan.
- Werry, Margaret. 2010. "Interdisciplinary Objects, Oceanic Insights: Performance and the New Materialism." In *Theatre Historiography: Critical Interventions*, edited by Henry Bial and Scott Magelssen, 221–34. Ann Arbor: University of Michigan Press.
- Willerslev, Rane. 2007. *Soul Hunters: Hunting, Animism, and Personhood among the Yukaghirs*. Berkeley: University of California Press.
- Zerdy, Joanne. 2013. "Ecological Re-Orientations in NVA's *Half Life*." *TDR* 57 (4): 157–63.
- Zerdy, Joanne. 2014. "The Unfolding Roles of a Walking Map in NVA's *Half Life*." In *Performing Objects and Theatrical Things*, edited by Marlis Schweitzer and Joanne Zerdy, 91–103. Basingstoke: Palgrave MacMillan.