



Open Library of Humanities



Part of the Ubiquity  
Partner Network

Digital Studies /  
Le champ numérique

---

## Research

**How to Cite:** Wikle, Olivia. 2020. "Listening at a Distance: Reading the Sound World of Gothic Literature with Topic Modeling and Text Analysis." *Digital Studies/Le champ numérique* 10(1): 9, pp. 1–33. DOI: <https://doi.org/10.16995/dscn.333>

**Published:** 15 October 2020

---

## Peer Review:

This is a peer-reviewed article in *Digital Studies/Le champ numérique*, a journal published by the Open Library of Humanities.

## Copyright:

© 2020 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

## Open Access:

*Digital Studies/Le champ numérique* is a peer-reviewed open access journal.

## Digital Preservation:

The Open Library of Humanities and all its journals are digitally preserved in the CLOCKSS scholarly archive service.

---

## RESEARCH

# Listening at a Distance: Reading the Sound World of Gothic Literature with Topic Modeling and Text Analysis

Olivia Wikle

University of Idaho, US  
omwikle@uidaho.edu

---

Traditionally text-focused digital humanities tools can assist in sound studies research by revealing patterns in how sound is described in historical text. When combined with close reading, these patterns facilitate insight into how sound was interpreted and communicated in time periods for which no sound recording technology existed. This article centers on the literary works of gothic author Ann Radcliffe (1764–1823), whose texts have been recognized for their inclusion of rich descriptions of sound. I examine the results of text analysis and topic modeling performed on Radcliffe’s corpus in the context of how contemporaneous aestheticians understood and wrote about sound. The results reveal that Radcliffe’s sonic language encompasses a comprehensive and calculated narrative use of sound, which reflects an understanding of theories on obscurity, sublime terror, and associationism put forward by aestheticians during her time. On a larger level, this article illustrates the mutual value that stems from integrating digital humanities and sound studies research: analyzing sonic language expands the types of questions to which visually oriented digital humanities tools can be applied, and digital tools aid in excavating otherwise silent sound worlds of the past.

---

**Keywords:** topic modeling; text analysis; sound; Ann Radcliffe; gothic; sublime

---

Les outils des humanités numériques qui sont traditionnellement focalisés sur les textes peuvent aider dans la recherche des sons en dévoilant des modèles concernant la façon dont le son est décrit dans des textes historiques. Une fois combinés avec la lecture attentive, ces modèles facilitent des aperçus de la manière dont le son a été interprété et communiqué pendant des époques où aucune technologie d’enregistrement sonore n’existait. Cet article se concentre sur les œuvres littéraires de l’auteure Ann Radcliffe (1764–1823), dont les textes sont connus pour l’inclusion de descriptions riches du son. J’examine les résultats d’analyses

de textes, ainsi que ceux des modélisations thématiques réalisées sur le corpus de Radcliffe, en prenant en compte l'interprétation et le traitement des sons d'esthéticiens contemporains. Les résultats indiquent que le langage sonore de Radcliffe inclut l'usage narratif étendu et calculé d'un langage sonore qui reflète une interprétation théorique de l'obscurité, de la peur sublime et de l'associationnisme que les esthéticiens avançaient à l'époque. À plus grande échelle, cet article présente la valeur mutuelle qui se produit grâce à l'intégration des humanités numériques et de la recherche des études de son : analyser le langage sonore enrichit les types de questions auxquelles les outils axés sur les aspects visuels des humanités numériques peuvent s'appliquer, et les outils numériques aident à extraire du passé des mondes sonores, qui seraient autrement silencieux.

---

**Mots-clés:** modélisation thématique; analyse de texte; son; Ann Radcliffe; gothique; sublime

---

## Introduction

But, if you be afraid to hear the worst,

Then let the worst, unheard, fall on your head.

—Shakespeare, *King John*.

what noise is that? did not you hear a sound, ma'amselle?

—Annette in Ann Radcliffe, *The Mysteries of Udolpho*.

The narratives of eighteenth-century gothic author Ann Radcliffe (1764–1823) are composed of rich sonic worlds that include descriptions not only of music, but also of the larger soundscape that her characters inhabit. These descriptions of sound offer some perspective on how Radcliffe, her peers, and her readers understood and interpreted sound in the context of late eighteenth-century aesthetics. In addition to musical notation and aesthetic writings on sound, the narrative use of sound in literature can play an important role in interpreting the sound worlds of historical periods in which no recording technology existed. This method of investigating the acoustics of the past presents an intriguing opportunity for cross-disciplinary research in digital humanities (DH) and sound studies because it requires an analysis not of the medium of sound, but of sound expressed as text. Most commonly, sound

studies in DH focuses on sound as an audible medium, as an entity that can be captured, preserved, and replayed via digital and electronic means (Lingold, Mueller, and Trettien 2018; Clement 2016, 348; Sterne 2011). Despite the exciting potential that audio recordings allow for deeper investigation into sonic instances, such research is limited in historical scope by the fact that recording technology did not exist until the late nineteenth century. To seek meaning in the soundscape of an era for which no sound recordings exist necessitates exploring how sound is referred to or expressed in nonsonic historical artifacts, such as Radcliffe's texts. Text-focused DH tools can be especially suited to facilitating the interdisciplinary and intertextual exploration that historical sound studies research requires.

Interpreting soundscapes of the past via their silent remains is not a new concept. R. Murray Schafer has suggested that researchers turn to earwitness accounts from literary, historical, and anthropological documents in order to understand past soundscapes with no recordings (Schafer 1993, 8). Such earwitness accounts include not only explicit descriptions of sound, but also literature that exposes how people historically interpreted or reacted to sound. More recently, Noelle Louise Chao has advocated for thinking of such earwitness accounts as a type of recording technology in themselves. In doing so, she positions the readers of these documents as reader-listeners (Chao 2013, 258), acknowledging their complex and subjective interpretation of sound and text. These silent recordings should not be interpreted out of context, however; deciphering them requires the consultation of multiple historical artifacts. As Rebecca Dowd Geoffroy-Swinden recognizes, exploring a wide range of media types can lead to a better understanding of the "historical acoustemology of auditioning subjects" (2018, 239). This concept is derived from Steven Feld's term *acoustemology*, which denotes a person's sonic way of knowing or being in the world (Feld 1994, 11). Historical *acoustemology* refers to the listening experiences of individuals of the past who heard, produced, and interpreted sound differently than modern-day listeners, in accordance with their own experiences and social contexts. Sound worlds communicated via written text are an example of the earwitness accounts and contextual material that Schafer and Dowd

Geoffroy-Schwinden advocate exploring; in analyzing these silent representations of acoustics one can gain something in the way of a deeper, more intimate look into the cultural context around past sound and the historical acoustemologies of those who produced it and listened to it.

Following a similar rationale, in his analysis of the sound world of seventeenth-century England, Bruce Smith demonstrates that piecing together the remains of past soundscapes requires discerning how authors and readers historically interpreted descriptions of sound according to their own lived, auditory experiences (Smith 2004, 24). Smith terms this type of analysis “acoustic archaeology,” a process that invites the researcher to read between the lines in order to hear sonic evidence encoded in writing or imagery (Smith 2004, 36). Excavating historical soundscapes in this way requires the researcher to first catalogue written descriptions of sound, then turn to other contemporaneous historical artifacts to make sense of how those sounds were socially interpreted and understood.

Smith’s acoustic archaeology can be used as a guide to expand the potential for sound’s place in DH. Though he does not use digital tools to accomplish his research, Smith’s method of “excavating” descriptions of sound in primary source texts resonates in some ways with text mining, and text-focused DH tools have the potential to make this textual exploration easier. In this study, I have used text analysis and topic modeling to excavate the acoustic world of late eighteenth-century British gothic novelist Ann Radcliffe. The results of this text analysis and the topics generated serve as a catalogue of the sonic language in Radcliffe’s corpus, and the contextualized interpretation of this catalogue is facilitated through a close reading of contemporaneous aestheticians by whom Radcliffe was influenced in her understanding of sound and terror. Ultimately, the distant reading techniques applied here not only serve as further evidence of the overwhelming presence of sound in Radcliffe’s novels, but also illustrate various ways in which her use of sonic language was impacted by eighteenth-century conceptions of the sublime, including those of Edmund Burke and Archibald Alison.

## Methodology

### Data

My analysis was performed on a corpus composed of Radcliffe's novels and travel journals. Radcliffe wrote six novels during her lifetime, five of which were published while she was alive (a rather short publication period spanning 1789 to 1797) and one which was published posthumously in 1826. I obtained a text file of the first edition of *The Castles of Athlin and Dunbayne* (1789) as well as HTML files of the first editions of *A Sicilian Romance* (1790), and *The Romance of the Forest* (1791), through the Oxford Text Archive. Also from the Oxford Text Archive, I acquired HTML files of the first American editions of Radcliffe's *The Mysteries of Udolpho* (1795), and *The Italian* (1797), and I attained a text file of the first edition of her posthumously-published novel, *Gaston de Blondville* (1826), from Archive.org.

Radcliffe's travel writing consists of *A Journey Made in the Summer of 1794*, a 1795 publication recounting an excursion she and her husband made to Germany and Britain's Lake District, in addition to posthumously published journal entries included in *Memoir of the Life and Writings of Mrs. Radcliffe*, a forward in *Gaston de Blondville* written by Thomas Noon Talfourd. The journal entries in this memoir describe various travels she and her husband took after 1797. I obtained the HTML file of *A Journey Made in the Summer of 1794* from the Oxford Text Archive and extracted the journal entries from the text file of *Gaston de Blondville* that I acquired from Archive.org. After extracting them, I placed these journal entries into a text file titled *Memoir* so that they could be analyzed as a single text. Due to the length of their titles, in the analysis below, I refer to these two files of Radcliffe's travel writing as *Journey* and *Memoir*, respectively.

I have chosen not to include Radcliffe's poetry in this study because I feel it deserves more specific attention than can be given here. Beyond an analysis of its sonic language in the broader context of eighteenth-century discourse on the sublime, a thorough examination of sound in Radcliffe's poetry should be considered alongside an investigation of the presence of sound in the works of contemporaneous poets and compared with the poetry in her novels' epigraphs. Because poetry was not

considered as a discreet entity in this research, I removed Radcliffe's metrical tale, *St. Alban's Abbey*, from the *Gaston de Blondville* text file prior to my text analysis and topic modeling because it does not exist as part of the novel's narrative. The poetry that occurs within Radcliffe's novels *The Castles of Athlin and Dunbayne*, *A Sicilian Romance*, *The Romance of the Forest*, and *The Mysteries of Udolpho* has been left in these text files because it is integrated into these novels' narratives.

The novel and travel journal text required some light cleaning, which I accomplished by using regular expressions to strip away front matter and chapter titles and correct OCR mistakes. Additionally, in all of my analyses, I utilized a stopword list that I created specifically for Radcliffe's text by combining the contents of the Buckley-Salton Stopword List (Buckley and Salton 2000) with the names and titles of the characters that populate Radcliffe's novels.

### **Tools**

To explore contexts as well as raw and relative frequency of words in Radcliffe's writing, I used Voyant Tools (Sinclair and Rockwell 2012). Additionally, I utilized the LDA implementation provided in the Mallet toolkit (McCallum 2018) to apply topic modeling to these texts. I set my parameters at 5,000 iterations with a topics threshold of 0.05, optimized interval 30, and Gibbs sampling for 30 topics. These settings ensured that the resulting topics had at least a 5% representation in the texts being analyzed.

Deciding on an optimal Gibbs sampling number for this corpus took time and experimentation. I ran Mallet several times with the "number of topics" parameter set to 10, 20, 30, 40, 50, 60, and 70 topics and studied the outputs. When the value of this parameter was increased, more specialized topic descriptions were produced. Many of these topics were understandable and coherent, but they tended to have a lower presence across the corpus as a whole, remaining limited to one text. I settled on a number of topics parameter of 30 because this struck the right balance between specificity and generality, outputting a mixture of topics that maintain a presence in multiple texts over the course of Radcliffe's writing career along with those that are only relevant to specific works.

As Graham, Milligan, and Weingart note, the process of settling on a “best” amount of topics for a corpus is an iterative one that cannot be decided for the researcher by the computer, and is a procedure that hopefully encourages a deeper understanding of the data by the researcher when searching for patterns across topics (2013, 79). Additionally, in much the same way that the presence of sound in gothic literature necessarily draws upon a reader’s remembered sonic experiences, using topic modeling to “hear” text requires that a researcher bring past experiences and biases to bear on interpreting the results of such analyses. With this in mind, I proceeded with the understanding that the topics produced provide one particular lens through which to explore this corpus, and with the knowledge that other researchers may find in these topics other ways to understand this body of text.

## **Discussion**

### ***The gothic genre and Radcliffe’s sonic language***

The gothic imaginary of late eighteenth-century Britain is characterized by a fascination with the supernatural and with excess. Many of the gothic tropes established in the literature of this period, including abandoned abbeys, castle ruins, autumnal landscapes, and dark dungeons, have maintained a persistent presence in popular culture through the present day. Gothic authors used more than this visual imagery, however, to generate the sensations of excess and terror so crucial to the gothic novel. Another important, though often overlooked, trope of the gothic is its use of sound. Despite a substantial tradition of research into the visual aesthetics of the gothic genre, scholars have only recently begun to turn their attention to the historically neglected yet compelling acoustics of gothic narrative. This oversight reflects a scholarly tendency to understand the gothic genre’s visual emphasis as being in direct opposition to Romantic texts’ sonic excess. As one of the first to acknowledge that this binary framework is not a truism for all gothic text, Dale Townshend reframes Radcliffe’s incorporation of sound as an anticipation of the aesthetic of Romantic writers such as Wordsworth and Coleridge (2005, para. 9). According to Townshend, the gloominess of the gothic, which so often strips



characters of their powers of sight, created an opportunity for authors to begin exploring and exploiting the sense of hearing.

Radcliffe's incorporation of acoustics was successful in part because written descriptions of sound are exceptionally suited to the gothic narrative: as Isabella Van Elferen recognizes, the already-enchanting and spectral qualities of sound and music are enhanced through its manifestation as a virtual, written sonic event rather than a literal, audible sonic event (Van Elferen 2012, 3). In literature, written descriptions of sound can convey soundscapes, but these are silent soundscapes, sonic environments that must be remembered or imagined by the author and reader in order to be heard. Written sound's inherently gothic quality stems from the fact that its existence relies on readers being able to piece together the "ruins," or fragments of their own memories of sound in order to imagine the sound described in writing. Understood in this way, the act of inscribing sound as written word bears some resemblance to what Schafer has termed schizophonia, the separation of a sound from its living source through technology (Schafer 1993). When sound is mediated through literature, it is separated from its source not through the audible technology of sound recording, but through writing. The distance created between sound and source via the silent representation of writing becomes especially apparent and unsettling to the reader, and in turn can be implemented as a narrative technique to intensify the supernatural excess that permeates gothic literature.

Existent research exploring sound in the Gothic novel almost always includes Radcliffe as an example because of the strong presence that sonic language holds in her gothic narratives (Townshend 2005; Foley 2016; Van Elferen 2012). She is notable not only for her methods of incorporating sound, but also for the influence she imposed and the admiration she gained from many writers who came after her, including Walter Scott and John Keats (Townshend 2005, para. 10). Radcliffe's characters move through a rich sound world of castles, abbeys, and forests in which their ears encounter echoing steps, moans, whispers, ringing convent bells, and disembodied music. Additionally, music plays a crucial role in the plotline of two of her novels, *The Mysteries of Udolpho* and *The Italian*. Even a simple analysis of word frequency in Radcliffe's corpus demonstrates the significance of acoustics to

her writing, especially in her novels. The most frequently occurring word across Radcliffe's entire corpus of novels and travel writing is *heard*, with a frequency of 1203 (**Table 1**). The word *voice* is also near the top, in 15<sup>th</sup> place with a count of 772. Notably, both of these words appear more frequently than the more visually oriented terms *see* and *eyes*, which are situated in 20<sup>th</sup> and 25<sup>th</sup> places, respectively. When word frequency is analyzed in her corpus of novels only (**Table 2**), *voice* is ranked even higher, at 13<sup>th</sup> place, while *heard* still retains its first-place position. An analysis of the co-occurrence of *heard* with neighboring words within Radcliffe's novels illustrates that the words Radcliffe chooses to use in close proximity to *heard* further reveal a rich sound world in her fictional narratives. Examples of *heard*'s use are "heard a bell toll," "heard a bolt drawn," "heard a chorus of voices," "heard a clashing of swords," "heard a deep voice murmur," and "heard a distant chanting." Radcliffe's characters also hear rustling, sudden sounds, voices, moans, steps ascending, footsteps approaching, music, trumpets, and doors locked, unlocked, fastened, bolted, and unbolted.

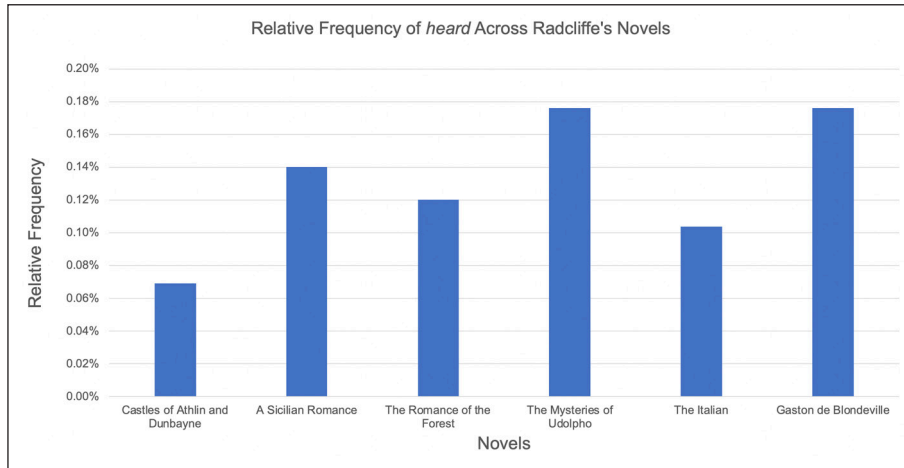
**Table 1:** Top 15 Most Frequent Words in Radcliffe's Novels and Travel Journals.

Most Frequent Words: All Texts		
	Term	Count
1	heard	1203
2	time	1200
3	appeared	1113
4	long	1031
5	mind	1029
6	heart	1001
7	door	982
8	night	970
9	passed	925
10	castle	918
11	made	885
12	thought	837
13	place	882
14	length	778
15	voice	772

**Table 2:** Top 15 Most Frequent Words in Radcliffe's Novels.

<b>Most Frequent Words: Novels</b>		
	<b>Term</b>	<b>Count</b>
1	heard	1149
2	time	1077
3	appeared	1009
4	mind	1002
5	heart	992
6	door	947
7	night	897
8	long	848
9	castle	796
10	made	792
11	passed	789
12	thought	780
13	voice	767
14	chamber	727
15	moment	715

Mapping the relative frequency of *heard* across Radcliffe's novels is revealing: the word has the highest relative frequency in *The Mysteries of Udolpho*, but this frequency is only slightly higher than in *Gaston de Blondeville*. Noticeably, Radcliffe's first novel, *The Castles of Athlin and Dunbayne*, uses *heard* the least, suggesting that as her style developed, she incorporated the term more often (**Figure 1**). Finally, it is worth noting the discrepancy between the high frequency of the word *heard* in Radcliffe's novels when compared to the word *listen*. Even combined with its past participle, *listened*, *listen*'s raw frequency is 433, not even close to *heard*'s total count of 1149 for Radcliffe's novels. Radcliffe's use of *heard* in place of *listen* could be an intentional method of conveying the lack of agency her heroines experience. So often trapped in various forms of confinement, her characters do not have the luxury of choosing to listen. Instead, sound accosts them, emanating from unseen and unknown sources: they hear sounds whether they wish to or not, and the unknowability of these acoustics causes the characters'—and by extension the readers'—imagination to engage with the terrifying possibilities and consequences of the sounds' origins. This



**Figure 1:** Relative Frequency of *heard* in Radcliffe's Novels.

“assault” that sound has on Radcliffe’s characters is reminiscent of Richard J. Hand’s account of auditory signifiers of conflict in that the ominous sound the characters, or in Hand’s case, combatants, hear is uncontrollable, and, as Hand states, “can challenge the very sanity of the listener” (Hand 2017, 355). In Radcliffe’s novels, the act of hearing is uncontrollable, and this absence of agency is particularly terrifying when accompanied by a state of captivity that prohibits movement toward or away from a sound with unknown origins.

By contrast, sonic words are less present in Radcliffe’s travel journals, where more visually oriented objects and imagery take precedence (**Table 3**). The most frequent words in Radcliffe’s travel journals describe place and landscape. *Heard* and *voice*, with frequencies of 54 and 5, respectively, make no appearance in the top 15 words, and the high frequency of visual vocabulary suggests that she describes the landscapes through which she travels much more than the soundscapes. Though the travel journals contain less sonic language, the most frequent words for the entire corpus of travel journals and novels combined (**Table 1**) still reflect a substantial presence of sound-related words. This is because of the difference in size between the two corpora: the corpus of travel journals is composed of a total of 149,548 words while the novels combined contain 805,961 words. The larger corpus of novels therefore affects the word frequency output for all the text combined.

**Table 3:** Top 15 Most Frequent Words in Radcliffe's Travel Journals.

<b>Most Frequent Words: Travel Journals</b>		
	<b>Term</b>	<b>Count</b>
1	city	233
2	town	213
3	place	208
4	road	207
5	part	205
6	great	192
7	mountains	185
8	long	183
9	side	176
10	small	175
11	country	174
12	rhine	173
13	french	162
14	left	159
15	river	157

The high frequency of sonic words in Radcliffe's novels indicates that she was likely exceptionally cognizant of the auditory phenomena that she encountered in her daily life. As her biographers note, Radcliffe was especially attuned to sound and was said to enjoy attending opera and listening to the organ (Norton 1999, 62–3). Beyond cultivating her love of music from childhood through adulthood, Radcliffe also enjoyed a formative educational exposure to classical literature, and she familiarized herself with aesthetic discussions that took place during her lifetime (Norton 1999, 49). Her knowledge of these literary genres came to have ample influence on her own writing, and her gothic narrative style was shaped in a prominent way by the prevailing aesthetic theories of the late eighteenth century, particularly the theoretical conversation surrounding sublime terror. Importantly, Radcliffe enhanced her application of the sublime in her gothic novels through her narrative use of sound (Foley 2016, 175).

### ***Sublime discourse in the eighteenth century***

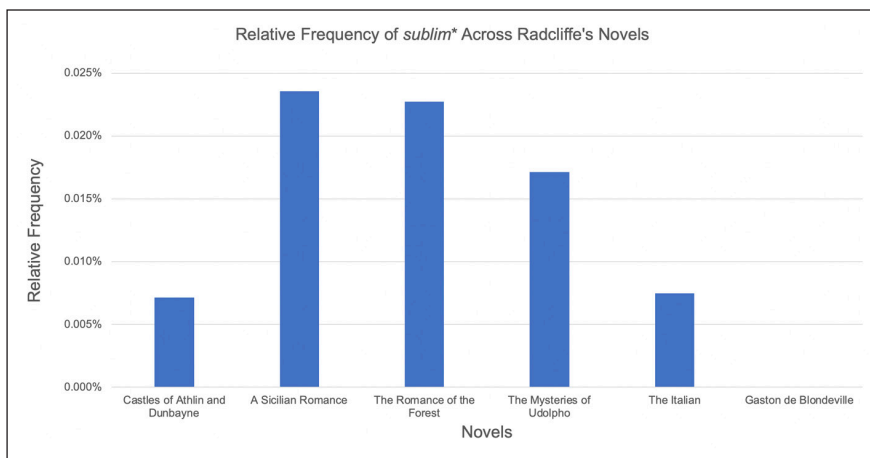
The importance of aesthetics and emotion in the gothic novel runs tangentially to a wider eighteenth-century aesthetic discussion surrounding the context, meaning, and representation of the sublime. This discourse involved a multitude of dynamic and often conflicting aesthetic philosophies that were debated via theoretical texts. Perhaps the most influential eighteenth-century British aesthete of the sublime was Edmund Burke, whose 1757 treatise *A Philosophical Enquiry into the Origins of our Ideas of the Sublime and Beautiful* was widely read and influenced many subsequent understandings. Burke understood the sublime as a simultaneous feeling of terror and delight, generated by experiencing fear, power, or overwhelming excess from a safe and secure vantage point. These experiences might be invoked by awe-inspiring grandeur or by the awesomeness of the divine. Crucially, according to Burke, the sublime was experienced in full when induced through terror:

Whatever is fitted in any sort to excite the ideas of pain and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime; that is, it is productive of the strongest emotion which the mind is capable of feeling. (Burke [1757] 1793, 58)

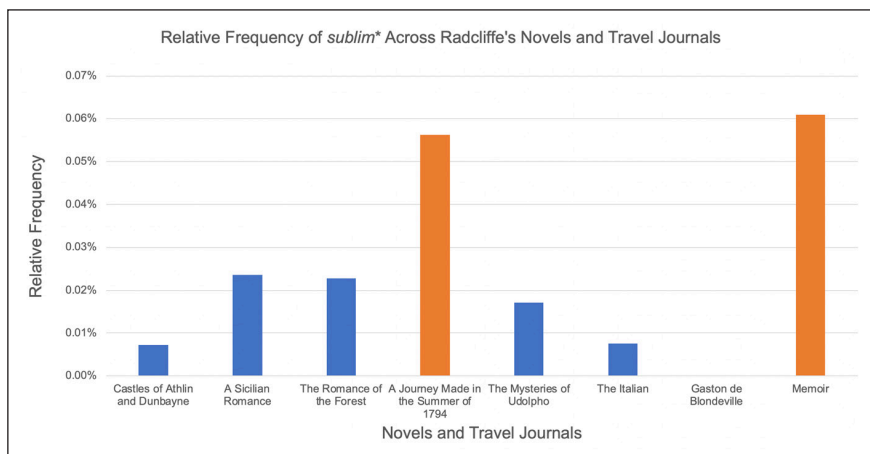
Burke's understanding of the sublime was especially critical to the gothic genre, as authors capitalized on this blend of extreme emotions by describing terrifying scenes to readers who could enjoy their feelings of terror by virtue of experiencing them from a safe vantage point.

Radcliffe's use of the sublime in her novels, especially in relation to the gothic tropes of terror and excess, is well-recognized (see Ware 1963; Norton 1999; Miles 1995, 2012). However, overall the word *sublime* does not have an especially high representation in her texts: across her entire corpus of novels and travel journals *sublim\** only appears a total of 198 times (this takes into account the multiple forms of the word *sublime*, including *sublimity*, *sublimest*, and *sublimely*). As Rictor Norton recognizes, the raw frequency of the term *sublime* increases between Radcliffe's first

novel, *The Castles of Athlin and Dunbayne*, where it has a count of 3, and her second, *A Sicilian Romance*, where its raw frequency is increased to 16 (Norton 1999, 77). The visualization below demonstrates that the relative frequency of the word *sublim\** also increases between *The Castles of Athlin and Dunbayne* and *A Sicilian Romance*, then decreases throughout the rest of Radcliffe's novels, from *The Romance of the Forest* through *Gaston de Blondeville*, where it does not appear at all (**Figure 2**). In comparison, Radcliffe's travel journals (indicated in orange in **Figure 3**) include a



**Figure 2:** Relative Frequency of *sublim\** in Radcliffe's Novels.



**Figure 3:** Relative Frequency of *sublim\** in Radcliffe's Novels and Travel Writing.

significantly higher relative frequency of the term *sublim\** than her novels, with the journal entries quoted in *Memoir* having a slightly higher frequency than *Journey* (**Figure 3**). The greater presence of the term *sublim\** in Radcliffe's travel writing than in her novels may at first seem to indicate that Radcliffe was invoking the concept of the sublime more in her travel writing than in her fictional narratives. Additionally, it might be tempting to surmise from the trajectory of the word's frequency in Radcliffe's novels that her use of the sublime as a literary technique decreased throughout her career. However, the results of the close reading and topic modeling presented below suggest another explanation for the lower frequency of the term *sublim\** across Radcliffe's novels when compared with her travel writing: namely, that Radcliffe represents and communicates the concept of the sublime in her novels without explicitly labeling it.

### ***Obscurity and the sublime in Radcliffe's writing***

One of the techniques Radcliffe uses to invoke the sublime is obscurity. Similarities have been drawn between Burke's emphasis on obscurity as a catalyst of sublime terror and Radcliffe's substantial use of obscurity as an instigator of terror throughout her Gothic narratives (Miles 1995; Passey 2016). Evidence confirms Radcliffe's familiarity with Burke: she refers to Burke in her posthumously published essay, "On the Supernatural in Poetry" (Radcliffe 1826, 150), as well as in her travel journals.

Burke describes obscurity as an essential component to producing sublime terror:

...to make any thing very terrible, obscurity seems in general to be necessary. When we know the full extent of any danger, when we can accustom our eyes to it, a great deal of the apprehension vanishes. Every one will be sensible of this, who considers how greatly night adds to our dread, in all cases of danger, and how much the notions of ghosts and goblins, of which none can form clear ideas, affect minds, which give credit to the popular tales concerning such sorts of beings. (Burke [1757] 1793, 99)



According to Burke, an absence of visual clarity allows for the imagination to conceive of supernatural beings and occurrences, which lend themselves easily to inspiring sublime terror. Radcliffe employs her understanding of Burke's obscurity via her "art of suggestion," (Miles 1995, 47): by withholding information from her readers, she allows their imagination to supplement what is not revealed through the text.

This stimulation of the imagination can be accomplished not only through an absence of sight, but also with the addition of sound. Radcliffe applies obscurity to the medium of sound for maximum effect in generating sublime terror (Foley 2016; Passey 2016). When it comes to obscurity, the two senses of sight and hearing are connected in gothic writing: as Townshend recognizes, sound became important to the gothic genre precisely because gothic narratives have a tendency to strip characters of their power of sight, making their hearing faculties all the more crucial and meaningful (Townshend 2005, para. 15). Understood in this way, obscured sound only exists because of an absence of sight. A listener inhibited from seeing the origin of a sound is left to imagine what its source might be and is unable to attain a full understanding without having the capacity to see it.

Though Burke does not discuss sound or music to any substantial extent in his *Philosophical Enquiry*, he does briefly address sound's relationship to obscurity, acknowledging that sound is by its very nature more obscure than visual phenomena. According to Burke, the medium of verbal communication can only convey an "obscure and imperfect idea" which, by virtue of its lack of clarity, will produce a stronger emotion in the listener than he or she will feel when seeing an image that communicates the same concept:

On the other hand, the most lively and spirited verbal description I can give, raises a very obscure and imperfect idea of such objects; but then it is in my power to raise a stronger emotion by the description than I could do by the best painting...so far is a clearness of imagery from being absolutely necessary to an influence upon the passions, that they may considerably be operated upon without presenting any image at all, by certain sounds adapted to

that purpose; of which we have a sufficient proof in the acknowledged and powerful effects of instrumental music. (Burke [1757] 1793, 101–2)

The lack of clarity inherent in sound accords it the capacity to more effectively operate upon the imagination and emotions than visual imagery, which communicates a truer rendering of reality and leaves nothing to the imagination.

That Radcliffe was influenced by this concept of obscured sound and its power to generate an excess of emotion is apparent not only from reading her gothic narratives but also from the results generated by topic modeling her corpus. The topic that consistently has the highest weight across her novels, labeled Obscured Sound, contains many references to obscurity in addition to sonic language. This topic is represented in **Table 4** for two corpora: Radcliffe's novels and travel journals combined, and her novels only. Both instances of the Obscured Sound topic contain terminology that conveys a sentiment of sound and darkness. Because the two corpus categories above (novels and travel journals, and novels only) share most of the same texts, they predictably have many identical words in their respective Obscured Sound topics. These common words include *heard*, *night*, *voice*, *long*, *late*, and *hour*. However, this topic's connection to sublime terror and sound is strongest in the corpus of novels, as is indicated by the inclusion of the words *fear*, *silence*, and *sound* in this instance of the topic. *Fear* suggests a connection to the terror of the Burkean sublime, and the words *silence* and *sound* represent the greater presence of acoustic language in this topic than in the instance of this topic generated from

**Table 4:** Obscured Sound Topic.

<b>Texts</b>	<b>Obscured Sound Topic</b>
Novels and Travel Journals	heard night mind made thought length countenance door returned voice appeared subject long chamber tears late hour evening scarcely moment
Novels Only	heard night appeared long voice moment left air person light passed fear returned late scarcely hour distance silence sound remained

the corpus of novels and travel journals combined. When topic modeling is run on Radcliffe's travel journals without the novels included, the topic with the heaviest weight is full of language that evokes visual scenery. This topic has been labeled Landscape, due to the imagery it contains (**Table 5**). The significant presence of such a visually oriented topic in Radcliffe's travel journals is understandable, as her travel narratives describe in great detail the places she encountered on her excursions.

Notably, though it is the highest-weighted topic for the corpus of novels and travel journals combined, the Obscured Sound topic is not represented above 5% in the travel journals when they are analyzed without the inclusion of the novels. Due to its small size in comparison with Radcliffe's novels, the corpus of travel journals does not have a great effect on the Obscured Sound topic output for the corpus of novels and travel journals combined. However, the presence of the travel journals, which lack the language of obscurity and sound so prevalent in the novels, does dilute the Obscured Sound topic in the combined corpus so that it does not contain the words *silence*, *sound*, or, especially, *fear*. This result suggests that, despite the fact that Radcliffe's travel journals do read in many ways like her novels, especially when it comes to descriptions of landscape, the two literary forms differ in the ways they express sound and convey the concept of the sublime. That the corpus of novels should contain the strongest presence of words that connote obscurity, sound, and fear suggests that Radcliffe employed the concept of obscured sound to generate sublime terror most often in her novels, and described sound less often and for different purposes in her travel writing.

This does not suggest that descriptions of sound are absent from Radcliffe's travel journals. Indeed, her journals are often used as evidence of her auditory awareness of the world around her (Talfourd 1826, 75; Norton 1999, 29; Passey 2016, 200). Sonic language is still present in the travel journals, but it is not

**Table 5:** Landscape Topic.

Texts	Landscape Topic
Travel Journals Only	great long road distance hills view dark left side passed woods castle scene shore high round green village small half

represented in a way that communicates obscurity or terror in the same fashion that it is in Radcliffe's novels. This absence of contextual language that conveys sublime terror and obscurity in Radcliffe's travel journals suggests that descriptions of the sublime in her travel writing are not intended to generate the same emotional effect on readers that she implements in her novels. In the same way, as the relative frequency of the word *sublim\** presented above illustrates, Radcliffe uses the term *sublim\** much more frequently in her travel journals than she does in her novels, a result that suggests she communicates the sublime in her travel writing less as a narrative technique to induce sublime terror in her readers than as a way of communicating the awe-inspiring grandeur of her visual surroundings. Rather than conveying only the qualities of the sublime as she does in her novels, in her travel journals she uses the word itself. This discrepancy between the two literary forms demonstrates that Radcliffe was not merely describing sound in her novels as she was in her travel journals; she was using sonic language and obscurity in a calculated way, within the context of Burke's philosophy, to generate an emotion of sublime terror in readers.

In Radcliffe's novels, obscured sound maintains an important part of the narrative fabric, representing dark, echoing, and terrifying environments through which her characters attempt to negotiate safe passage. Often, the source of sound is doubly masked, not only obstructed by physical objects but also cloaked in the darkness of night. A recurring situation in which Radcliffe's heroines hear sounds emanating from outside their closed chamber doors at night is common across her novels, and usually proceeds along the following lines:

She watched to a late hour, when, no sound having renewed her fears, she, at length, sunk to repose. But this was of short continuance, for she was disturbed by a loud and unusual noise, that seemed to come from the gallery, into which her chamber door opened. Groans were distinctly heard, and, immediately after, a dead weight fell against her door, with a violence, that threatened to burst it open... Fear deprived her of the power to move.  
(Radcliffe [1794] 2001, 511)

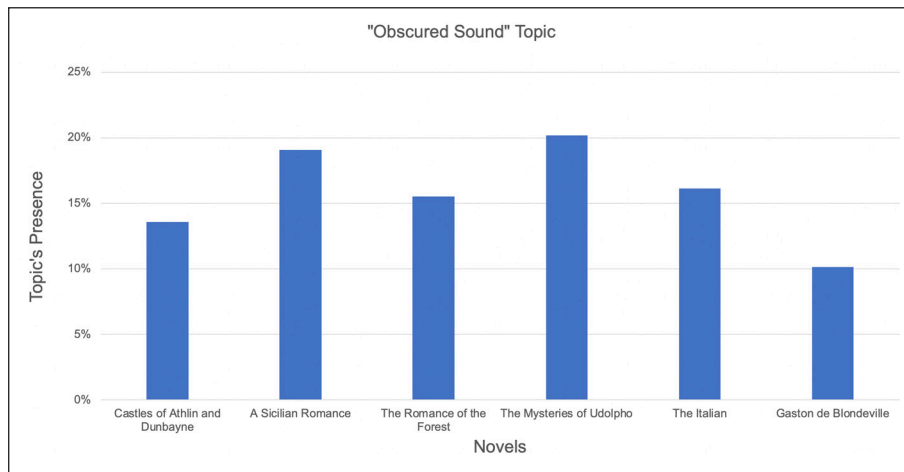
This passage is especially demonstrative because it contains several words that appear in the Obscured Sound topics above, including *late*, *hour*, *sound*, *chamber*, *door*, and *fear*. The presence of these words in this sample passage as well as in the topics above are especially representative of the time of day in which these terrifying encounters so often occur: night. This also explains why *chamber* and *door* appear in the Obscured Sound topic as well, for it is when Radcliffe's heroines are sequestered in their chambers for the night that these terrifying sonic experiences often occur.

*Heard's* presence as the most frequent word in Radcliffe's corpus, and *night's* presence as the seventh-most frequent also demonstrate Radcliffe's tendency to use these terms. Additionally, as the Voyant visualization in **Figure 4** demonstrates, when the relative frequency of either *heard* or *night* increases or decreases in Radcliffe's novels, that of the other word follows suit, a phenomenon that further implicates a correlation between these two terms. Further representation of the consistent presence of the Obscured Sound topic throughout all of Radcliffe's novels is illustrated in **Figure 5**, which shows the topic's distribution throughout her corpus of novels.

*The Mysteries of Udolpho* boasts the highest presence of this topic at around 20%, while its appearance in *A Sicilian Romance* sits close behind at 19%. Even beyond its strong existence in these two novels, the topic has a relatively high presence across



**Figure 4:** Relative Frequency of *heard* and *night* in Radcliffe's Novels.



**Figure 5:** “Obscured Sound” Topic Visualization Across Radcliffe's Novels.

the other four as well: 14% in *The Castles of Athlin and Dunbayne*; 16% in *The Italian*; 16% in *The Romance of the Forest*; and 10% in *Gaston de Blondeville*. This topic's consistent presence from *The Castles of Athlin and Dunbayne*, first published in 1789, to *Gaston de Blondeville*, first published in 1826, suggests that Radcliffe was employing obscured sound as a narrative technique throughout her writing career, though she uses it most in the four novels published between 1790 and 1797.

Radcliffe demonstrates the centrality of obscurity to her understanding of terror and the sublime in her essay “On the Supernatural in Poetry,” through her character, W., when he contends,

...but recollect, that obscurity, or indistinctness, is only a negative, which leaves the imagination to act upon the few hints that truth reveals to it; confusion is a thing as positive as distinctness, though not necessarily so palpable; and it may, by mingling and confounding one image with another, absolutely counteract the imagination, instead of exciting it. Obscurity leaves something for the imagination to exaggerate. (Radcliffe 1826, 151)

Radcliffe's definition of the negative sublime, which generates terror through its indistinctness, allows the mind to imagine the possibilities of something only partially explained. This imagination is a means for inducing a terror that, understood

in Burkean terms, is distinct from what scholars have identified as Matthew Lewis's explicit "positive horror," in which detailed explanations of supernatural beings or occurrences are fully recounted, and curiosity thus satisfied leaves the mind nothing to imagine (Miles 1995, 48). While Radcliffe's statement is certainly reflective of her understanding of Burke's sublime, her discussion of obscurity here invokes the question of how other theorists in addition to Burke may have influenced her use of sound, and the sublime. As David B. Morris argues, gothic sublimity is often associated with Burke, sometimes without enough consideration of the multi-faceted dialogue surrounding the sublime. While recognizing that sublimity is an integral part of the gothic novel, Morris cautions against understanding the sublime as a "single, unchanging feature or essence" (Morris 1985, 300). Throughout the eighteenth century and into the nineteenth, the sublime consisted of a dialogue of many concepts and qualities that some theorists were able to combine and communicate more clearly than others. It is therefore wise to consider Radcliffe's auditory text in the wider context of other contemporaneous aestheticians to determine how their descriptions of sublime sound may have influenced her use of sonic language as a tool of the gothic sublime.

### **Associationism and Radcliffe's sonic language**

Beyond its obvious Burkean influence, Radcliffe's understanding of obscurity and the sublime echoes the ideas of Archibald Alison, who, in his 1790 *Essays on the Nature of Principles of Taste*, described the sublime within the context of associationism, and also wrote more extensively about music and sound than most aestheticians of the time. According to Alison's associationist psychology, taste allows for the experience of sublimity through the imagination, and the imagination is composed of associations, or trains of ideas that are stimulated in response to aesthetic objects (Townshend 2019, 69–70). As Alison states, "the object itself, appears only to serve as a hint, to awaken the imagination, and to lead it through every analogous idea that has place in the memory" (Alison 1790, 42). The aesthetic object catalyzes a flow of emotions and ideas that grow out of one another, generating a pleasing experience (Monk 1960, 149). A key difference in understanding between the aesthetics of Burke

and Alison, then, is that while for Burke sublimity resides in the object, for Alison, sublimity lies in the imaginative associations provoked by the object (Townshend 2019, 70). In this way, Alison recognizes the supremacy of mind in the experience of sublimity (Monk 1960, 148). Samuel H. Monk describes this imaginative process as one in which the perceiver's memory and knowledge of cultural context influence the train of associations: "we see the values implied, the experiences to which they are allied, their significance—in other words we see imaginatively" (Monk 1960, 148–49). We might also extend this to mean that we *hear* imaginatively, for in the context of auditory phenomena, associationism and its reliance on the subjective experiences of the perceiver is reminiscent of the modern concept of acoustemology, which assumes that a subject's experience of sound is interpreted via his or her sonic way of being in the world, shaped by memories of acoustic experiences. This is also why sound was able to be used so effectively in the gothic novel, as in the act of imagination, readers' "personal specters" come to bear on the sounds they imagine (Van Efleren 2012, 26). Due to its inherent obscurity, sound stimulates associationist trains of thought in a way that the empirical surety of the visual cannot.

When Radcliffe defines obscurity as "leaving the imagination to act on the few hints that truth reveals to it" (Radcliffe 1826, 151), she may also be channeling the influence not only of Burke but also of Alison's insistence that an object may "serve as a hint, to awaken the imagination, and to lead it through every analogous idea that has place in the memory" (Alison 1790, 42). In addition to the Burkean understanding of sound's implicit obscurity, Alison's suggestion that sonic objects provoke sublime emotions through association lends even more power to sound's capacity to generate sublime terror, and provides further explanation of how Radcliffe was thinking about sound as a tool to generate emotion in her readers. In understanding which sounds invoke particularly sublime associations, Radcliffe may have also looked to Alison due to his comparatively extensive treatment of sound in his *Essays*.

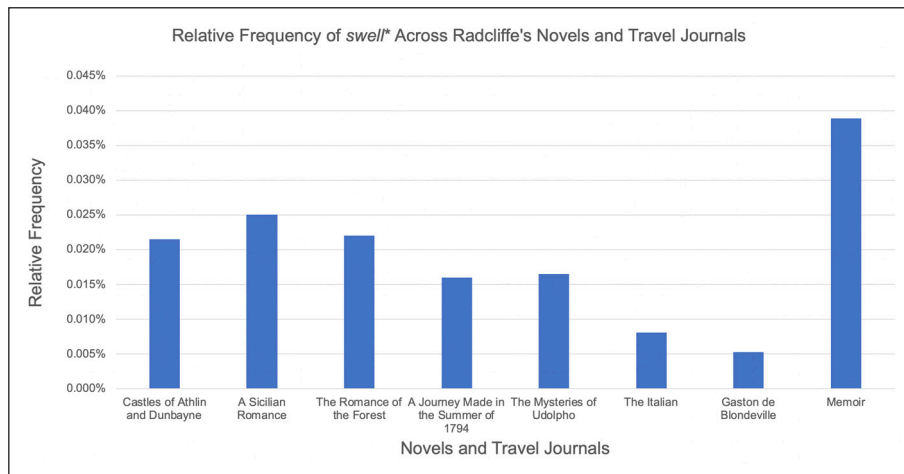
As Burke's neglect to consider sound to any full extent in his discussion of the sublime demonstrates, for the majority of the eighteenth century the sublime qualities of acoustics received relatively little treatment by aestheticians in comparison to their discussion of the visual qualities of the sublime. When combined with the complex



and varied discussion surrounding the sublime in general, this lack of attention given to sound meant that the definition of sublime sound for most of the eighteenth century was not straightforward. However, there were some consistencies in the way theorists described it (McClelland 2012, 12–17). Writing in the late eighteenth century, Alison addresses sound in greater detail than most. He contends that sound has the ability to bring about a sublime reaction in listeners when it possesses any combination of the following qualities: loud and low, grave and acute, long and short, and increasing and diminishing, and concludes that “The most sublime of these sounds appears to me to be a loud, grave, lengthened and increasing sound” (Alison 1790, 176–77). Though some of these qualities cohere with qualities of the sonic sublime laid out by Burke, including excessive loudness (Burke 1757, 150) and a “low, tremulous, intermitting sound” (Burke 1757, 152), unlike Alison, Burke does not designate increasing or decreasing dynamics as sublime.

Alison’s definition of sublime sound as increasing shares a possible connection with Radcliffe’s use of the word *swell*, a term that, without a close look at text analysis results, might be easy to dismiss as un-affiliated with sound. In fact, Voyant’s Contexts tool demonstrates that the word *swell* frequently implies increasing sound in Radcliffe’s corpus. Accounting for all forms of the word, (including *swell*, *swelled*, *swelling*, etc.), *swell*\* appears a total of 151 times in Radcliffe’s corpus. This is broken down into 123 times in her novels and 28 times in her travel journals, making it a far less frequent word than *heard* or *night*, discussed above. Despite its low raw frequency in Radcliffe’s travel writing, however, *swell*\* has a comparatively high relative frequency in *Memoir* (**Figure 6**). *Swell*\* accounts for 7 out of 18,023 words in the *Memoir* travel writing excerpts with a frequency of 0.038%, and 21 out of a total of 131,525 words in *Journey*, with a frequency just over 0.015%. However, though its relative frequency may be highest in *Memoir*, *swell*\* is associated with acoustic contexts much less in Radcliffe’s travel writing than in her novels.

Despite its low frequency, when *swell*\* appears in Radcliffe’s novels it is often in the context of descriptions of aural phenomena, and the language with which *swell*\* is used indicates its repeated association with words denoting sound and obscurity. Examples of contextual language include “solemn strains are faintly heard to swell,”



**Figure 6:** Relative Frequency of *swell\** in Radcliffe's Novels and Travel Journals.

“celestial voices swell in holy chorus,” “full swell of harmony into a low chant,” “plaintive voices mellowed the swelling harmony of the dirge,” and “the low querulous peal of the organ swelled faintly, gloomy and affecting.” *Swell* is also used to describe sounds of nature: “the loud swell of the gust overcame...” and is even implemented to represent apparently supernatural sounds: “wide the phantoms swell the loaded air with shrieks...” Sometimes, the sound of music is amplified or made to swell through nature: “the tender tones, as they swelled along the wind.” In total, *swell\** is used to describe sound approximately 53% of the time in Radcliffe's novels.

By contrast, *swell\**'s presence in acoustic contexts within Radcliffe's travel journals is much less than it is in her novels. In all, *swell\** co-occurs with sonic language only 14% of the time in the travel journal corpus. Additionally, though the graph above illustrates that *Memoir* holds the highest relative frequency of *swell\**, only one out of its seven appearances is in a sonic context. Instead, in Radcliffe's travel journals *swell\** is more often used to describe landscape and scenery. Common contexts include swelling hills and mountain summits. These results suggest once again not only the visual focus of the travel journals, but also that sublime sound is implemented in Radcliffe's novels via contextual language that echoes that of sublime aestheticians.

The sonic contexts in which Radcliffe uses the term *swell* are suggestive of her familiarity with Alison's descriptions of sublime sound. *Swell* corresponds with

Alison's assertion that increasing sounds are often sublime, and the words with which Radcliffe pairs *swell*, including *low* and *loud*, correlate with Alison's categorization of low sound as sublime and with Burke's interpretation of sublime sound as excessively loud. In this way, Radcliffe applies *swell* to her descriptions of the obscure and thus already sublime component of sound to depict contexts that provoke the sublime through associationism. A phrase like "the low querulous peal of the organ swelled faintly, gloomy and affecting" not only includes words that suggest obscurity, such as gloomy, but also sets off a chain of associations in the mind of the reader, stimulating their imagination of the gothic context and their experience of sublime terror. In fact, Radcliffe's sublime bears enough resemblance to the theories of Alison that Monk conjectures, "if Alison were consistent, he must have declared *The Mysteries of Udolpho* sublime" (Monk 1960, 150). Though there is no way to prove that Alison did indeed ever make such a declaration, Radcliffe's suggestion that the imagination acts on hints of the truth and her frequent application of increasing sound in the form of the word *swell* support the hypothesis that he influenced her understanding and implementation of the sublime.

### Sound and discourse

The representation of sound by way of text in the gothic novel is crucial to Radcliffe's ability to implement sound as a technique for generating sublime emotions. An integral aspect of sound's capability to provoke sublime terror in the gothic novel is via the reader's act of imagining sound encountered through text. In this context, written descriptions of sound can be understood as a form of ekphrasis, or the rendering of one art form through another. Of all the forms of ekphrasis, sound represented in writing is the least explored. More often, ekphrasis refers to prose or poetry that describes visual art, or, if sound is considered at all, music that expresses visual art or text (Bruhn 2000). Ekphrastic sound, when it is understood as a description of sound via the medium of visual text, is central to the sublime terror of the gothic because of its inherent obscurity: in reading a description of sound, the reader is further removed from its origins than they would be if they were hearing it in reality. In this situation, the reader is not producing the sound, nor are

they listening to it; rather, they are interpreting another person's interpretation of it. When the source of sound is obscured in this way, both narratively and in reality, the reader's act of "hearing" this written (and thus silent) sound effortlessly becomes an excessively gothic experience (Van Elferen 2012, 26). Because sound rendered as text has the capacity to affect emotion through its additional qualities of obscurity, it is important to distinguish between sublime written descriptions of sound and instances of audible sublime sound, and to understand that Radcliffe's use of sound is not able to be heard in reality but is rather a silent representation which the reader must interpret visually and then conjure using imagination and memory.

This distinction between text and sound is in a way reflective of sound's relatively minimal presence in the written discourse of the sublime during the eighteenth century. Pierre Dubois argues that one of the reasons why sound and music were not explored to any great length by sublime aestheticians for most of the century was due to the heterogeneity that exists between the media of sound and text (2015, 152). Most of the discourse on the sublime consisted of text discussing the sublimity of other text, and in this way, the sublime became not only the object of this discourse, but also a product of it (Dubois 2015, 152). Thus, the vocabularies used to characterize and communicate sublime contexts were exchanged between literary and aesthetic texts, with each genre influencing the other. Sound's very status as a medium other than text hindered its inclusion in this discussion, and it did not receive the same complexity of definition in the context of the sublime as did visual media throughout most of the eighteenth century. As Alison's more intensive focus on sound reflects, it was only at the end of the century and into the nineteenth that more detailed connections were made between sound and the sublime (McClelland 2012, 14). By translating the medium of theoretical text not into pure acoustics, but into words that describe acoustic contexts, Radcliffe's use of sonic language in some ways bridged this gap between sound and discourse. She found a way to bring sound into this heavily text-based discussion of the sublime by implementing ekphrasis in her narratives via textual descriptions of sound. In doing so, she not only increased her readers' sense of sublime terror, but also created new opportunities for understanding sound's capacity to provoke the sublime.

## Conclusion

To comprehend the role of sound in Radcliffe's writing requires situating oneself within the historical contexts in which it was produced and interpreted. Yet this process becomes especially difficult as the temporal distance increases between the time period in which Radcliffe wrote her texts and the present, as the contextual cues that made up her historical acoustemology are different from our own. When interpreting sound in historical text, the distant reading techniques of DH can facilitate and enhance an alternate form of distant reading, one that also becomes a type of distant listening: that is, reading (and listening) across time. The patterns that tools like text analysis and topic modeling reveal serve to disperse some of the obscurity that time has afforded these texts.

As the outcomes of the analyses above demonstrate, Radcliffe's descriptions of sound are carefully crafted according to her knowledge of contemporaneous aesthetic theories and tailored to the genre of text she was writing. Quantitatively, these results establish the abundant presence of sonic language in her text, as is illustrated in her novels by the high frequencies of the terms *heard* and *voice*, and the many sonic words that exist in the Obscured Sound topic. Additionally, the relative absence of these terms and this topic in Radcliffe's travel writing indicates not only that the content of her travel journals is more visually focused, but also implies that there is intention behind the way Radcliffe uses sound in her novels. These results are representative of the acoustic archaeology that takes place when reading and understanding a historical text as a type of recording. Some of this analysis can certainly be accomplished through traditional close reading, but DH tools provide further clarity, especially when it comes to looking for patterns across a corpus of text. However, these outputs cannot be interpreted without additional documents that provide more insight into the historical acoustemologies of those who read them.

Recognizing the complex aesthetic discussions that existed at the time of Radcliffe's writing allows for situating her text within the context of the discourse of the sublime. In doing so, words such as *night*, *late*, and *fear* that occur in the Obscured Sound topic can be interpreted as reflecting the concept of Burke's sublime

terror. Additionally, an examination of the contexts in which she uses the word *swell* mirrors Alison's characterization of increasing sound as sublime, as well as Alison's influence on Radcliffe's understanding of and implementation of associationism. It is important to recognize, however, that she does more than simply repeat the words of Burke and Alison. It is how she employs and contextualizes these words in her narratives to communicate obscurity that provokes the emotion of sublime terror so crucial to the gothic genre. Her written descriptions of sound put the theories of these aestheticians into practice, effectively supporting the sonic sublime in a discourse that had for so long neglected to give it the attention it deserved.

By combining text-focused DH tools with sound studies methods of cataloguing and interpreting ekphrastic inscriptions of sound according to their social and cultural contexts, this study reveals a deeper understanding of how gothic sound worlds were understood by those who wrote and read them. There are undoubtedly additional connections to be made between Radcliffe's sonic language and the way contemporaneous aestheticians theorized sound beyond those addressed here, but this research provides an example that can be built upon and extended to other types of texts in other time periods. The coalescence of digital methodologies and sound studies research holds interdisciplinary value in that it not only expands the types of questions to which DH tools can be applied but also enriches our access to otherwise silent sound worlds, transforming our engagement with text into a multi-sensory activity.

### **Additional file**

The clean text files used in this project, their sources, and my stopword list can be found here: <http://dx.doi.org/10.17605/OSF.IO/ZEFQ6>.

### **Competing interest**

The author has no competing interest to declare.

### **Editorial contributions**

Guest Editor: Lisa Snyder, University of California Los Angeles (UCLA), USA.

Section Editor: Darcy Tamayose, University of Lethbridge Journal Incubator, Canada.

Copy Editor: Nathir Haimoun, University of Lethbridge Journal Incubator, Canada.

## References

- Alison, Archibald.** 1790. *Essays on the Nature and Principles of Taste*. Edinburgh: Bell and Bradfute.
- Bruhn, Siglind.** 2000. *Musical Ekphrasis: Composers Responding to Poetry and Painting*. Hillsdale, NY: Pendragon Press.
- Buckley, Chris, and Gerard Salton.** 2000. "Stop Word List 2." *Onix Text Retrieval Toolkit*. Cornell University. Accessed July 12, 2020. <http://www.lextek.com/manuals/onix/stopwords2.html>.
- Burke, Edmund.** (1757) 1793. *A Philosophical Enquiry Into the Origin of Our Ideas of the Sublime and Beautiful. With Introductory Discourse Concerning Taste; And Several Other Additions. A New Edition*. London: Vernor and Hood.
- Chao, Noelle Louise.** 2013. "Listening to the Voice on the Page: Joshua Steele and Technologies of Recording." *The Eighteenth Century* 54 (2): 245–261. DOI: <https://doi.org/10.1353/ecy.2013.0012>
- Clement, Tanya E.** 2016. "When Texts of Study are Audio Files: Digital Tools for Sound Studies in Digital Humanities." In *A New Companion to Digital Humanities*, edited by Susan Schreibman, Ray Siemens, and John Unsworth, 348–357. West Sussex, UK: John Wiley & Sons, Ltd. DOI: <https://doi.org/10.1002/9781118680605.ch24>
- Dowd Geoffroy-Schwinden, Rebecca.** 2018. "Digital Approaches to Historical Acoustemologies: Replication and Reenactment." In *Digital Sound Studies*, edited by Mary Caton Lingold, Darren Mueller, and Whitney Trettien, 231–249. Durham: Duke University Press. DOI: <https://doi.org/10.1215/9780822371991-011>
- Dubois, Pierre.** 2015. *Music in the Georgian Novel*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9781316258019>
- Feld, Steven.** 1994. "From Ethnomusicology to Echo-Muse-Ecology: Reading R. Murray Schafer in the Papua New Guinea Rainforest." *The Soundscape Newsletter* 8: 9–13. Burnaby, Canada: Simon Fraser University.
- Foley, Matt.** 2016. "'My Voice Shall Ring in Your Ears': The Acousmatic Voice and the Timbral Sublime in the Gothic Romance." *Horror Studies* 7 (2): 173–188. DOI: [https://doi.org/10.1386/host.7.2.173\\_1](https://doi.org/10.1386/host.7.2.173_1)

- Graham, Shawn, Ian Milligan, and Scott Weingart.** 2013. "Topic Modeling by Hand." In *The Historian's Macroscope: Big Digital History*. Imperial College Press, Open Draft Version. Accessed April 2, 2020. <http://themascope.org>.
- Hand, Richard J.** 2017. "The Sound of War: Audio, Radio and the First World War." In *The Edinburgh Companion to the First World War and the Arts*, edited by Ann-Marie Einhaus and Katherine Isobel Baxter, 354–367. Edinburgh: Edinburgh University Press.
- Lingold, Mary Caton, Darren Mueller, and Whitney Trettien,** eds. 2018. *Digital Sound Studies*. Durham: Duke University Press. DOI: <https://doi.org/10.1215/9780822371991>
- McCallum, Andrew Kachites.** 2018. MALLET: A Machine Learning for Language Toolkit, version 2.0.8. Amherst, MA: University of Massachusetts. Accessed July 12, 2020. <http://mallet.cs.umass.edu/>.
- Miles, Robert.** 1995. *Ann Radcliffe: The Great Enchantress*. New York: Manchester University Press.
- Miles, Robert.** 2012. "Ann Radcliffe and Matthew Lewis." In *A New Companion to the Gothic*, edited by David Punter, 93–109. West Sussex, UK: Blackwell Publishing Ltd.
- Monk, Samuel H.** 1960. *The Sublime: A Study of Critical Theories in XVIII-Century England*. Ann Arbor: The University of Michigan Press.
- Morris, David B.** 1985. "Gothic Sublimity." *New Literary History* 16 (2): 299–319. DOI: <https://doi.org/10.2307/468749>
- Norton, Rictor.** 1999. *Mistress of Udolpho: The Life of Ann Radcliffe*. London: Leicester University Press.
- Passey, Joan.** 2016. "Sound and Silence: The Aesthetics of the Auditory in the Novels of Ann Radcliffe." *Horror Studies* 7(2): 189–204. DOI: [https://doi.org/10.1386/host.7.2.189\\_1](https://doi.org/10.1386/host.7.2.189_1)
- Radcliffe, Ann.** (1794) 2001. *The Mysteries of Udolpho*. Edited by Jacqueline Howard. New York: Penguin Books.
- Radcliffe, Ann.** 1826. "On the Supernatural in Poetry." *New Monthly Magazine and Literary Journal* 16 (1): 145–152. London: Henry Colburn and Co.



- Schafer, R. Murray.** 1993. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny Books.
- Sinclair, Stéfan, and Geoffrey Rockwell.** 2012. Voyant Tools. Accessed July 12, 2020. <http://voyant-tools.org/>.
- Smith, Bruce.** 2004. "Listening to the Wild Blue Yonder: The Challenges of Acoustic Ecology." In *Hearing Cultures: Essays on Sound, Listening, and Modernity*, edited by Veit Erlmann, 21–42. Oxford: Berg Publishers. DOI: <https://doi.org/10.4324/9781003103189-2>
- Sterne, Jonathan.** 2011. "Audio in Digital Humanities Authorship: A Roadmap (version 0.5)." In *Super Bon!* (blog). Accessed July 12, 2020. <http://superbon.net/?p=1915>.
- Talfourd, Thomas Noon.** 1826. "Memoir of the Life and Writings of Mrs. Radcliffe." Preface to Vol. 1 of *Gaston de Blondville, or The Court of Henry III; St. Alban's Abbey; Posthumous Works; Memoir*, edited by Henry Colburn, 1–132. London: Henry Colburn and Co. Internet Archive. Accessed July 12, 2020. <https://archive.org/details/gastondeblondevi01radc>.
- Townshend, Dale.** 2005. "Gothic Visions, Romantic Acoustics." *Romantic Circles*. Accessed July 12, 2020. <https://romantic-circles.org/praxis/gothic/townshend/townshend>.
- Townshend, Dale.** 2019. *Gothic Antiquity: History, Romance, and the Architectural Imagination, 1760–1840*. New York: Oxford University Press.
- Van Elferen, Isabella.** 2012. *Gothic Music: The Sounds of the Uncanny*. Cardiff: University of Wales Press.
- Ware, Malcolm.** 1963. *Sublimity in the Novels of Ann Radcliffe*. Uppsala: A.-B. Lundequistska Bokhandeln.

**How to cite this article:** Wikle, Olivia. 2020. "Listening at a Distance: Reading the Sound World of Gothic Literature with Topic Modeling and Text Analysis." *Digital Studies/Le champ numérique* 10(1): 9, pp. 1–33. DOI: <https://doi.org/10.16995/dscn.333>

**Submitted:** 13 December 2018 **Accepted:** 19 February 2020 **Published:** 15 October 2020

**Copyright:** © 2020 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



*Digital Studies/Le champ numérique* is a peer-reviewed open access journal published by Open Library of Humanities.

**OPEN ACCESS** The Open Access logo, consisting of the words 'OPEN ACCESS' followed by a circular icon containing a padlock with a keyhole, symbolizing open access.