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Onomatopoeias and Robert Normandeau's Sonic World of *Baobabs*: Transformation, Adaptation, and Evocation
Le cycle *Onomatopées* et le monde sonore de *Baobabs* de Robert Normandeau : transformation, adaptation et évocation

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Résumé de l'article

Selon plusieurs compositeurs, le studio est un espace retiré qui permet d'intérioriser leurs idées, contrôler chaque élément et réaliser l'entièreté de leur imagination musicale. Bien que Normandeau soit un compositeur renommé pour ses oeuvres acousmatiques fixées, il ne se limite pas à l'espace solitaire et contrôlé du studio électronique. Il apprécie le processus, la transformation et l'adaptation. C'est ainsi qu'il adapte l'oeuvre acousmatique *Le renard et la rose* (1995) pour quatre chanteurs, six percussionnistes et électroacoustiques, dans le cadre de *Baobabs* (2012). Après avoir contextualisé l'utilisation des onomatopées dans les compositions du xxᵉ siècle et dans l'oeuvre de Normandeau, et à la suite de la présentation du cycle *Onomatopées* et de *Baobabs*, l'article propose une analyse orientée du point de vue du rythme, des relations tonales et formelles, de la texture et du timbre. L'étude propose en conclusion une réflexion sur les différences fondamentales entre les deux compositions, particulièrement autour de la question du contrôle et de la dualité compositeur/interprète.

Onomatopoeias and Robert Normandeau's Sonic World of *Baobabs*: Transformation, Adaptation, and Evocation[1]

Alexa Woloshyn

Overview

Spontaneous and contagious laughter shatters the silence of anticipation in *Le renard et la rose* (1995), an acousmatic work by Robert Normandeau (b. 1955), a composer who, while frequently using referential sounds, rarely leaves a sound source this exposed. This laughter is the most memorable sound in *Le renard et la rose*, so when *Baobabs* (2012) opens with the same laughter, now performed by live singers, the listener knows immediately these two works share a rare and special sonic bond.[2]

Le renard et la rose and *Baobabs* exemplify Normandeau's technological and aesthetic concerns, and the flexibility of his musical material. This article first contextualizes vocal onomatopoeias in 20th-century compositions and Normandeau's output. Following an overview of the *Onomatopoeias* cycle and *Baobabs*, the analysis is divided into rhythm, tonal and formal relationships, and texture and timbre. The article concludes with a reflection on the fundamental differences between the two works, particularly as they relate to control and the composer/performer binary.

"*Le travail avec la voix est toujours très stimulant*"[3]

The voice is a unique element of identity. Speaker recognition software exists because of the voice's particularity, its cadence, tone, and articulations

2. *Baobabs* received First Prize (Category B: mixed media) at MUSICA NOVA 2013.

3. Normandeau, quoted *in* Olivier, 1999, online.

idiosyncratic to the individual. This particularity can be difficult, and almost impossible, to disguise. But Normandeau can sculpt extraordinary sounds into previously unknown and unrecognizable states, all through electronic technology: fragmenting, layering, filtering, stretching, among many other techniques Normandeau uses, transform the human sound source into something new, even unworldly at times. While Normandeau erases the unique vocal identity of his human sound sources, including age, he retains aspects of the original sources' identity, namely gender. Normandeau constructs new stories and identities, and the listener can combine his own experiences and memories with the sounds encountered to decode the voice's new message:

> A record can't limit the voice's meaning; a voice, once recorded, doesn't speak the same meanings that it originally intended. Every playing of a record is a liberation of a shut-in meaning—a movement, across the groove's boundary, from silence into sound, from code into clarity. A record carries a secret message, but no one can plan the nature of that secret, and no one can silence the secret once it has been sung.[4]

4. Koestenbaum, 1994, p. 51.

The voice has become a sonic theme in Normandeau's output. In addition to the works in the *Onomatopoeias* cycle, the voice is prominent in *La chambre blanche* (1985-86), *Bédé* (1990), *Claire de terre* (1999), *Erinyes* (2001), *Chorus* (2002), and *Puzzle* (2003), all but *La chambre blanche* and *Chorus* using onomatopoeias. Normandeau composed many other works over the 15 years it took to complete the *Onomatopoeias* cycle, some of which do not use the voice at all. However, as is reflected in the works listed above, Normandeau is drawn to the potential of the vocal sound source; he explains:

> *Je compose à partir d'une interaction très étroite entre la transformation du matériau et ce qu'il me donne en retour. C'est pour ça que le travail avec la voix est toujours très stimulant. J'ai fait d'autres pièces entre chacune des pièces du cycle, mais chaque fois que j'y revenais, c'était une bénédiction.*[5]

5. Olivier, 1999, online.

While composing *Bédé*, Normandeau also recognized the potential of onomatopoeias for musical exploration; he identifies the onomatopoeia "*comme [le] seul cas de figure dans le langage humain où le son correspond directement à l'objet, au geste ou au sentiment désigné et non pas à sa représentation abstraite.*"[6] Normandeau finds himself on a similar path to many 20th-century composers who, because of the evocative potential of onomatopoeias whose sounds *are* their meanings, were eager to expand the boundaries of vocal repertoire and frequently incorporated them.[7]

6. Program notes for *Baobabs*.

7. For more information on 20th-century vocal repertoire, see István Anhalt, 1984.

Since Schaeffer's "*musique concrète*" and "*écoute reduite*" first emerged, composers in France have debated the relative suitability of abstract ver-

sus referential sounds. Despite the strong connection between Québec and France, thanks to the common language that led many francophone composers to study in Paris, Québec composers have been largely free of that historical and aesthetic baggage, and no sound source was considered unacceptable.[8] Many of these composers, including Normandeau, subscribe to the *"cinéma pour l'oreille"* aesthetic in which sound and meaning are both essential to the work's expressive outcome;[9] as Normandeau explains: *"les sons, dès l'origine, racontent déjà quelque chose."*[10] In his 1992 doctoral thesis, Normandeau explains how *"cinéma pour l'oreille,"* a term first used in the 1960s to denote diffused electroacoustic works designed to offer a "sound spectacle" to the audience, can draw upon cinematographic grammar and language for composition and analysis.[11] The composer incorporates the listener's tendencies for sound identification based on real world experiences[12] while not reducing the work to a mere incidental narrative.[13]

Onomatopoeias unite the two elements that are central to *"cinéma pour l'oreille"*: sound and meaning. The onomatopoeia's sound *is* its meaning, with no reliance on abstract linguistic systems. The vocal utterances in Normandeau's *Onomatopoeias* cycle permeate the transformed electroacoustic soundscape to create strong gestures that indicate agency despite the third-order and remote surrogacies that distance the listener from clear cause-and-effect perceptions.[14]

Normandeau's first onomatopoeias work was *Bédé* (1990).[15] Normandeau used recordings of an eleven-year-old girl saying sounds that come from children's comic books, sounds collected in Jean-Claude Trait and Yvon Dulude's book *Le dictionnaire des bruits* (1989). The reference to comic books led to the work's title: *Bédé* is a pun on the acronym of *"bande dessinée."* This first exposure to the expressive potential of recorded vocal onomatopoeias has taken him on a more than two-decade compositional journey, resulting in the four-work *Onomatopoeias* cycle and the recent mixed media adaptation *Baobabs*.

The *Onomatopoeias* cycle

Because *Bédé* was relatively short (due to technological constraints), Normandeau decided to use the same samples to create a longer work. In 1991, Normandeau completed *Éclats de voix*, a 15-minute work in five sections, each with a particular sonic quality.[16] Though each section is distinctive and independent, unity is preserved across the five sections through the same sound source (a young girl) and common textures and processing methods.[17] Thanks to *Éclats de voix*'s success, Normandeau decided to use the same timeline to create more works: "After the completion of that work,

8. See Dhomont, 1996, online.

9. Ogborn, 2009, online.

10. Normandeau, 1992, p. 2. Other Québec acousmatic composers also subscribe to this theoretical framework, including fellow Dhomont student Gilles Gobeil.

11. For more information regarding specific terminology and techniques, see Normandeau, 1992; and Normandeau, 1993. While Normandeau explicates *"cinéma pour l'oreille"* through *Éclats de voix* in his dissertation (1992), he now maintains that the *Onomatopoeias* cycle is not *"cinéma pour l'oreille"* because it contains no real-world sounds other than the human voice (Woloshyn, 2011a, online). Regardless, *"cinéma pour l'oreille"* and Normandeau's interest in onomatopoeias reveal the same motivation to unify sound and meaning.

12. See Emmerson, 2007.

13. Normandeau, 1993, p. 115.

14. See Smalley, 1997.

15. The piece was originally created for an empreintes DIGITALes release entitled *Électro Clips: 25 Electroacoustic Snapshots*. The co-producers of the project, Jean-François Denis and Claude Schryer, asked for three-minute works, the length of the typical popular song played on the radio (Austin, 1991), but significantly shorter than the typical electroacoustic work at the time; Normandeau explains: "It was very original at the time because electroacoustic music pieces are usually quite long. Especially in the 70s, 80s, you could find easily pieces of two, three, or four hours, for example. To commission pieces for three minutes was kind of a challenge for electronic composers" (Woloshyn, 2011a, online). The work was produced at the composer's studio in Montréal and at the Groupe de recherches musicales (GRM) in Paris (Normandeau, [1994]1999).

16. *Éclats de voix* was produced at the GRM (Paris) and at his home studio in Montréal. The work was conceived

for multi-track presentation, with live sound diffusion of the sixteen tracks, depending on the performance space. Jean-François Denis and Normandeau re-worked the 16-track version to a stereo version that "simulate[s] a concert setting" (Normandeau, [1994]1999, p. 16).

17. Berezan, 1998, p. 2.

18. Ogborn, 2009, online.

19. Normandeau completed five versions of *Palimpseste* before finding satisfaction with the sixth and final version in 2009.

20. Normandeau, 1992, p. 57.

21. Normandeau, 2009, online; Normandeau uses the word "sonorous" rather than "musical" perhaps to avoid expectations of some of the traditional musical parameters, including melody and harmony, two parameters that do not exist in this work in any conventional sense.

22. The third section is entitled "Colère et dynamique" in all of the four works in the cycle.

23. The word "spleen" in French refers to a state of melancholy, a mood Normandeau claims is "one of the most significant moods of the adolescent: this kind of sudden melancholy which surfaces for no apparent reason" (Normandeau, 2009, online).

24. These boys selected some of their own onomatopoeias from *Le dictionnaire des bruits*, so *Spleen* does not contain all the same onomatopoeias in the exact same locations as *Éclats de voix*.

25. Woloshyn, 2011a, online.

26. The work was commissioned by the *Zentrum für Kunst und Medientechnologie Karlsruhe* (ZKM) in Germany.

27. The age range of these participants was 55-75.

I realized that it was the first time for me, as well as in the history of electro-acoustic music, that we were able not only to keep a trace of our recorded and treated sounds, but also to keep the gestures that were used to make them."[18] The result was the four-work *Onomatopoeias* cycle.

The *Onomatopoeias* cycle explores the recorded human voice at different ages: *Éclats de voix* (1991)—childhood, *Spleen* (1993)—adolescence, *Le renard et la rose* (1995)—adulthood, and *Palimpseste* (2005, 06, 09)[19]—old age. The source text for the cycle is taken from *Le dictionnaire des bruits* (1989) by Trait and Dulude. Normandeau explains his goal: *"L'idée de la pièce était de travailler cette matière sonore de manière à couvrir tout le registre et tout le spectre sonore sans l'aide d'aucune source sonore étrangère."*[20] Each work has five sections, each named for an emotion or attitude (which he calls "state") and a "sonorous parameter."[21] The sonorous parameters remain the same throughout the cycle, but as Normandeau changes each associated state, the parameters are explored in new and various ways, contrasts that are achieved through different vocal ranges and qualities. These states are often associated with the particular age group (e.g., melancholy with adolescence).[22]

To compose *Spleen*,[23] Normandeau kept *Éclats de voix*'s timeline, using the dynamic profiles, filterings, levels, spatializations, and so on, but removing the actual sounds. He then recorded the same onomatopoeias as *Éclats de voix*, but this time with four sixteen-year-old boys saying the onomatopoeias.[24] Normandeau explains that rather than exactly replicating the sounds of *Éclats de voix*, he allowed the sounds of the teenage boys—the emotion, the energy—to trigger his imagination:

> I tried to make a kind of an equivalence. If there was an "ouch" onomatopoeia somewhere, I tried to find an "ouch" onomatopoeia said by the boys. But it's not necessarily exactly the same thing; so you have to compose. I tried to make it as far as possible very close to the original. But there are some differences. The energy is not the same; the emotion is not the same.[25]
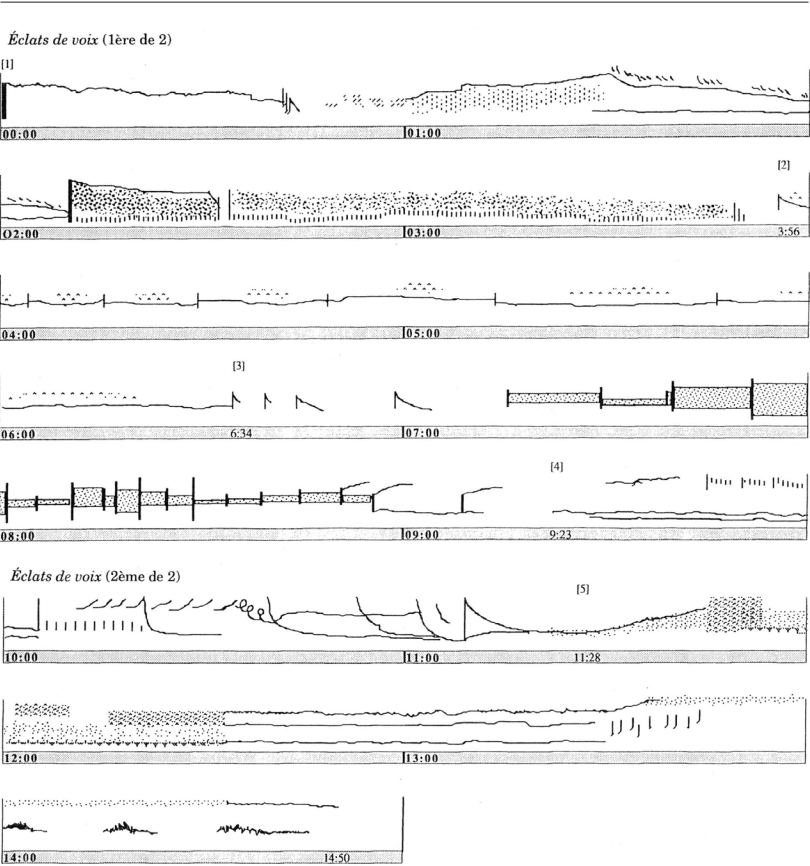
In 1995, Normandeau completed the third work in the cycle: *Le renard et la rose*. He composed it in his studio as a commission from the Banff Centre for the Arts for the 1995 International Computer Music Conference. *Le renard et la rose* is based exclusively on the adult voice.

Following a 10-year hiatus from the *Onomatopoeias* cycle, Normandeau composed the fourth and last work in the cycle: *Palimpseste* (2005, 06, 09).[26] Having set up the chronological timeline of the other three works (i.e., childhood, adolescence, adulthood), Normandeau had to fit in the last piece of the age puzzle: old age.[27]

FIGURE 1   Overview of the formal divisions in Normandeau's *Onomatopoeias* cycle (1991-2009).

	Éclats de voix	*Spleen*	*Le renard et la rose*	*Palimpseste*
Date	1991	1993	1995	2005, 06, 09
Age	Childhood	Adolescence	Adulthood	Old age
Length	14:51	15:03	14:55	14:53
Section 1	"Jeu et rythme" (0:00-3:55)	"Musique et rythme" (0:00-4:04)	"Babillage et rythme" (0:00-4:02)	"Furie et rythme" (0:00-4:02)
Section 2	"Tendresse et timbre" (3:56-6:33)	"Mélancolie et timbre" (4:05-6:42)	"Nostalgie et timbre" (4:02-6:42)	"Amertume et timbre" (4:03-6:41)
Section 3	"Colère et dynamique" (6:34-9:23)	"Colère et dynamique" (6:43-9:30)	"Colère et dynamique" (6:43-9:29)	"Colère et dynamique" (6:42-9:30)
Section 4	"Tristesse et espace" (9:23-11:27)	"Frustration et espace" (9:31-11:27)	"Lassitude et espace" (9:30-11:28)	"Fatigue et espace" (9:30-11:32)
Section 5	"Joie et texture" (11:28-14:51)	"Délire et texture" (11:28-15:03)	"Sérénité et texture" (11:29-14:55)	"Sagesse et texture" (11:32-14:53)

FIGURE 2   Diffusion score for *Éclats de voix*.

When Normandeau received a commission from Montréal-based percussion ensemble Sixtrum,[28] with financial support from the Canada Council for the Arts, he decided to explore the gestural framework and vocal sounds of the *Onomatopoeias* cycle one more time, but with live performers and electroacoustic tracks.

FIGURE 3   Section titles and times in *Baobabs*.[29]

Section 1	"Caquets: comme un mécanisme d'horloge"	0:00-4:35
Section 2	"Nostalgie: comme dans un rêve planant"	4:36-7:19
Section 3	"Colère: une grosse colère"	7:20-10:10
Section 4	"Lassitude: une grosse fatigue"	10:11-11:58
Section 5	"Sérénité: le plaisir"	11:58-15:31

In a strange compositional reversal, Normandeau "transcribed" *Le renard et la rose* for live percussion, voices, and electroacoustic soundtrack. This adaptation is significant not only because it is so rare, given the textural and timbral complexity of most electroacoustic works, a complexity that would be impossible to reproduce exactly by acoustic instruments, but also because of the return to an abstract compositional approach and a reliance on live performers.

Baobabs retains the overall gestural profile, with five sections, each associated with a feeling, most of which are exactly the same as the electroacoustic original. However, there are certainly limits to any acoustic transcription, for which Normandeau balanced by including some electroacoustic tracks along with the acoustic elements.[30] The following musical analysis compares and contrasts the sounds and resultant meanings of *Le renard et la rose* and *Baobabs*.

The sounds of *Le petit prince*

The titles *Le renard et la rose* and *Baobabs* come from Antoine Saint-Exupéry's novella *Le petit prince*. *Le renard* and *la rose* are two crucial characters in *Le petit prince*'s personal journey; the baobab is an aggressive tree that the title character must pull up before it takes root and destroys his small planet. For a 1994 radio adaptation produced by Odile Magnan, Normandeau created incidental music made from recorded onomatopoeias.[31] Though *Le petit prince* is a children's story, in many ways it is a story for adults. Saint-Exupéry created several adult characters whose personalities and behaviours,

while resembling real people, are exaggerated in such a way as to highlight their ridiculousness.

When Normandeau set out to compose the third work in his *Onomatopoeias* cycle, he retained two aspects of *Le petit prince*: the musical themes associated with particular characters (also based only on vocal sounds),[32] and the actors' voices. The sounds appropriated from Normandeau's incidental music for *Le petit prince* are a secret layer, almost like an inside joke for Normandeau and any listener who can hear the sounds from the radio adaptation, adding "a specificity to this third work that the first two didn't have."[33] Only listeners familiar with the radio adaptation will recall the original context of the sounds.

Normandeau includes several recognizable sounds in *Le renard et la rose* from his incidental music to *Le petit prince*. For example, in "Babillage," Normandeau includes the low pulsing hum that accompanies the subject-less king and the clapping that affirms the egocentric quest of *le vaniteux*. In "Lassitude et espace," Normandeau includes the sound effect of the lamp lighting and extinguishing, a job that *l'allumeur de réverbère* does each day on an unpopulated planet whose rotation lasts only one minute, leaving him to constantly light and extinguish the streetlamp without rest. Throughout this section of the radio adaptation, the high and low sounds represent the lamplighter's relentless duty, which is both comically absurd and utterly pathetic.[34] Normandeau extends the lamplighter's weariness to other sonic parameters, particularly at the end of the section. He decreases the tension and process of all the sonic elements: the dynamics decrease, the pitch descends, and motion gradually slows.

Reflecting on human experience is crucial in *Le renard et la rose*, and, thus, it is unsurprising that the humanness behind the modified voices is more conspicuous than in the previous two works in the cycle. *Le renard et la rose* is the first work in the *Onomatopoeias* cycle to combine both male and female voices, perceived most clearly by their vocal ranges in the opening section. Perhaps this is why Normandeau seems to draw more attention to the voices' genders, rather than allowing the technological capabilities to disguise and drown out this aspect of corporeal identity.

Le renard et la rose is the first work in the cycle to present a minimally modified human sound source from the beginning. In the opening seconds, the listener hears laughter, first unmodified, then increasingly modified with reverb and distortion. With the inclusion of laughter in *Le renard et la rose*'s opening, Normandeau creates a tone that contrasts with the previous two works. The mood overall in this cycle is dark, somber, and intense, but as a

32. He presents them chronologically: the King, the Businessman, the Conceited Man, the Flock of Wild Birds, the Well in the Desert, the Rose, the Baobabs, the Lamplighter, the Little Flower, the Merchant Who Sold Thirst-Quenching Pills, the Fox, and the Geographer.

33. Woloshyn, 2011a, online.

34. If a reader follows the book along with the radio adaptation, he can hear these pitched sounds when the book indicates "*Et il le ralluma*" or "*Et il éteignit son réverbère.*"

sonic motif that emerges throughout the work (for example, at 10:11), laughter is a release as joy is brought to the fore.

Baobabs similarly opens with laughter from the four singers, whose vigorous laughs end just as abruptly as they began. The laughter returns at the end of the first section, providing sonic closure. In *Le renard et la rose*, the laughter is a brief repose from the seemingly other-worldly sounds that will soon dominate the soundscape. By contrast, the laughter sounds maniacal in live performance, especially when paired with the nonsensical layers of onomatopoeias delivered in precise rhythmic patterns.

Percussive articulations

Since Stravinsky's abrupt and irregular accents in *Le sacre du printemps* (1913), "serious" (i.e., modernist) art music has avoided and intentionally undermined metrical stability, preferring to compose with durations that transcend bar lines (e.g., Messiaen's *Quatuor pour la fin du temps*). Any semblance of regular metre, or even a steady pulse, could be considered a musical contaminant from popular music: a capitulation to the masses. Acousmatic music had emerged from this modernist aesthetic and so younger generations, such as Normandeau, had to reconcile any desire for rhythmic regularity with the aesthetic expectations of the genre.

Early in *Éclats de voix*, Normandeau introduces rhythmic loops with a steady pulse. Its tempo is used throughout the work, creating rhythmic unity. This was the first time Normandeau incorporated a regular pulse into his works, a decision that was not easy for him: "I remember when I composed *Éclats de voix…* I was afraid to show the work to some of my friends and colleagues. But Francis Dhomont, my supervisor at the time, told me that it was the best and most personal piece I had ever done!"[35] A steady pulse has aesthetic associations with the popular music world, particularly various genres of electronica and dance music. For many electroacoustic composers, it has been essential to distance oneself from the "popular" scene in order to gain respect and recognition as "serious" composers. Normandeau notes a change:

> …we are at a stage in the history of electroacoustic music where the genre has reached maturity. We do not have to put a daily statement declaring how different and original we are from the rest of the music on the planet! Rhythm is a part of life and music and it can be used by us too![36]

The voice has great percussive potential, as beat boxers and "percussion-effusive"[37] rappers would assert. Normandeau's choice of onomatopoeias (particularly those with the phonemes [k] and [t] that create sharp gestures as

35. Ogborn, 2009, online.

36. *Ibid.*

37. See Krims, 2000.

the outgoing airstream is stopped by the tongue at the back and front of the mouth, respectively) lends itself naturally to rhythmic manipulation.

While the rhythmic aspect was present in the previous two works (with a notable increase in *Spleen*), rhythm pervades *Le renard et la rose*. Normandeau describes the main differences in *Le renard et la rose*: "C'est une pièce plus orchestrée, où l'énergie est plus à l'état brut, le rythme plus affirmé que dans les deux autres."[38]

That *Baobabs* would be a mixed media adaptation of *Le renard et la rose*, as opposed to another work from the cycle, is expected for two reasons: first, it is the most highly acclaimed work within the cycle;[39] second, it is the most rhythmic, thus, creating a natural transition to live percussion.

Knowing only the title—*Baobabs*—and instrumentation—six percussionists and four vocalists—might lead one to expect a connection to African drumming and chant traditions, given that the baobab is a deciduous tree in mainland Africa and Madagascar and Western composers now commonly incorporate the polyrhythms and percussion instruments of sub-Saharan Africa in particular. This expectation is only partly fulfilled in *Baobabs*, which does include cross-rhythms (frequently 3:2) in its rhythmically-driven texture. However, the percussion instruments themselves either do not come from Africa (e.g., cuíca: Brazil) or are too ubiquitous to assign specific geographical associations (e.g., shaker).

FIGURE 4   Alphabetical list of percussion instruments as identified in *Baobabs* score.[40]

Caisse Claire (snare drum)	Marimba basse (do_2-do_7) (bass marimba)
Carillon de bois (wood chimes)	Shaker
Carillon de métal (wind chimes)	Tambour de frein (brake drum)
Cloches tubulaires (do_5-fa_6) (tubular bells)	Tambourine
Congas	Tam-tam grave (low tam-tam)
Crécelle (ratchet)	Thunder tube drum
Criquet frog (frog rasper)	Timbales ($ré_2$-la_2, fa_2-do_3, sol_2-$ré_3$, do_3-sol_3, $ré_3$-la_3) (timpani)
Cuíca	
Cymbale (cymbal)	Tom-tom aigu (small tom-tom)
Cymbales avec archet (cymbals with bow)	Tom-tom grave (large tom-tom)
Flexatone	Tom-tom médium (medium tom-tom)
Glockenspiels (sol_5-do_8)	Vibraphone (do_3-do_7) avec archet (with bow)
Grosse caisse (bass drum)	
Hand claps	Woodblock
Lion's roar	Xylophone (do_4-do_8)
Log drum	

38. Olivier, 1999, online.

39. *Le renard et la rose* won the Golden Nica at the Prix Ars Electronica in 1996.

40. The percussion instruments are divided among the six percussionists, with some instruments assigned to more than one performer. See the score for the detailed distribution of the instruments among the six performers.

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The onomatopoeic declarations of the four singers suggest a connection to vocal percussion traditions, such as *konakkol*, the South Indian classical music tradition of performing the spoken rhythm language, *solkattu*, in concert, or even more remarkably, to *kecak*, the "monkey chant" performed by men within the Balinese musical tradition. These sonic connotations are not intentional, but they still point to the evocative and varied use of the human voice.

FIGURE 5 Percussion and vocal rhythms, mm. 8-9.

(a) Snare drums, large tom-tom timpani.

(b) Voices.

Each section contains distinctive rhythms, articulated by the percussion and voices and emphasized by certain phonemes. "Caquets" emphasizes [t] and [k] (particularly with the onomatopoeias 'tiquetac', 'taque', and 'touque'); a contrasting part also emphasizes [k], but with the sounds 'ko', 'ka', 'ki', 'ku', 'ke', 'cli', and 'cla', and 'yok' and 'yèk', two important onomatopoeias from subsections one and five of "Caquets." This opening section has a clear sense of pulse and metre, with its almost ubiquitous use of sixteenth, eighth, and quarter note patterns, with some variety provided by triplets, the ametrical xylophone, and the slowly changing patterns in the woodblock and tambourine (only in subsection one).

While "Caquets" prioritizes sharp percussive gestures, "Nostalgie" highlights resonant percussion; it proceeds with little sense of pulse or metre. The timpani play a strictly notated rhythm, but their triplet patterns do little to establish a pulse for the listener.

FIGURE 6   Timpani triplet patterns, mm. 136-144.
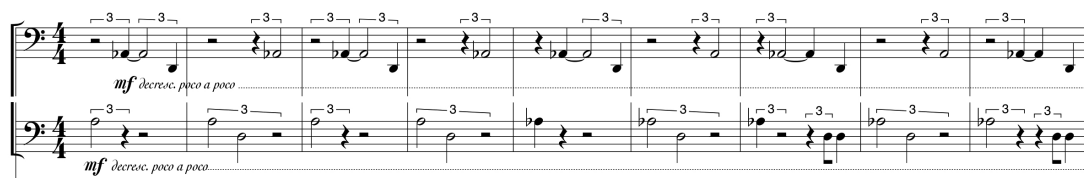
"Colère" contains vigorous rhythms expressed in two formal parts: the first (mm. 215-235) introduces a new sonic world and creates anticipation through sudden bursts followed by silence; this part is a particularly effective adaptation of *Le renard et la rose*. The consonants [ch], [k], [t], [f], and [p] are more aggressive and explosive than the open vowel [ou] of "Nostalgie." The second part of "Colère" (mm. 236-299) re-establishes stability with basic rhythmic patterns in the timpani (see Figure 7). Against this stability are vocal rhythms that are more staggered and independent than in the previous sections (see Figure 8). To reinforce their rhythmic profiles, Normandeau doubles the vocal parts with either the woodblock or the medium tom-tom.

While "Lassitude" is more similar to "Nostalgie" in minimizing a steady pulse, the second part (mm. 320-327), 'intime', reestablishes a steady pulse with a woodblock rhythm and coughing patterns in the voices; soprano/alto and tenor/bass pairings call and respond with their soft, but assertive coughs (see Figure 9). The third part of "Lassitude" in *Baobabs* (mm. 328-335), 'pièce',

FIGURE 7   Basic rhythmic patterns in timpani, mm. 236-238.

FIGURE 8   Voices and medium tom-tom, mm. 242-246.

FIGURE 9   Coughing patterns in call-and-response, mm. 323-324.

expands the rhythmic variety with new dotted rhythm patterns in the log drum, xylophone, and bass.

The fifth section's rhythmic drive and regularity marks a return to the vitality of sections one and three. This first subsection involves frequent shifts between different rhythmic patterns and onomatopoeias. The rhythmic patterns include straight eighth notes in the soprano, alto, and bass (later soprano and bass only) and snare drum; congas, large tom-tom marimba, and alto have patterns based on sixteenth notes. The tenor's triplet pattern is not doubled by any percussion instrument, a rare rhythmic independence in this work. The rhythmic drive remains as the vocal rhythms become more varied, both from each other and from those previously encountered. The onomatopoeias in this part prioritize [g], [gl], [gr], [k], and [p].

The second subsection contrasts various triplet patterns (both triplet quarters and eighths) in the soprano, tenor, and bass with straight eighth- and quarter-note patterns in the alto, timpani, and frog rasper. The alto's pattern becomes distinctive within the dense texture through its strong syncopations and onomatopoeias: "k - clic - ah - ah - hum - ka - plac - plic." Though the order of vocal utterances remains constant, its placement within an ever-changing rhythmic pattern allows different sounds to emerge as dominant, though most emphasize [k].

FIGURE 10   Second subsection of "Sérénité": triplet patterns and alto onomatopoeia pattern, mm. 396-399.

The final subsection exhibits a new dotted sixteenth-note pattern (see Figure 11), which will continue until the work's final moments, and a lack of simultaneity in the voices, similar to "Colère." After doubling the marimba, the alto returns to the straight eighth notes from the beginning of this section (and in fact, the beginning of the entire work). Its new 'cha-cho' pattern

FIGURE 11   Dotted sixteenth-note pattern in xylophone, marimba, and alto, mm. 425-427.

provides stability in the rhythmically diverse subsection. And it is the alto who closes the work, shortly after the marimba stops. In contrast to the abrupt opening of *Baobabs*, with all four singers laughing heartily, the work slowly winds down, with voices and instruments softly dropping out, until all that remains is the alto's soft 'cha-cho'.

Unencumbered by notational needs and inspired by the complex timbres of real-world sounds, acousmatic composers typically explore the continuum of what Smalley calls spectral types from note to node to noise.[41] While the majority of *Baobabs* is not pitched (both in the percussion and the vocals), with more emphasis on range, contour, and timbre, due to the detailed notation and pitched percussion (timpani, in particular), certain tonal structures emerge. The next section addresses these tonal structures and broader formal elements on both the small- and large-scale.

Small- and large-scale structural considerations

Baobabs's opening section, "Caquets," consists of five subsections, creating a kind of rondo, with three "statements" of a "refrain" (A) and two contrasting "episodes" (B and C). This A section contains a distinctive snare drum pattern, an emphasis on [t] and [k], and repeated dynamic indications (soprano begins piano, crescendoing and then descrescendoing, while the alto begins forte, decrescendoing and then crescendoing; see Figure 5b).

FIGURE 12   Formal diagram of "Caquets."[42]

A	B	A`	C	A``
1-37	38-79	80-99	100-115	116-135

41. Smalley, 1986, p. 67.

42. All measure numbers are taken from the unpublished score.

Baobabs has a clear tonal centre—D—that is relatively constant throughout the work; its position as tonal centre is repeatedly reinforced by its "dominant" A. Normandeau undermines this conservative tonal polarity by frequently substituting the tritone (A flat). Normandeau increases pitch diversity with the xylophone in A` and A``. In the former, the xylophone plays expanding chromatic scales (see Figure 13a), while in the latter, it repeats a circular pattern around D, with E flat and C sharp embellishments (see Figure 13b).

FIGURE 13 Xylophone chromatic patterns.

(a) Expanding chromatic scale, mm. 65-68.

(b) Circular chromatic pattern, m. 118.

"Nostalgie" maintains the tonal centre established in "Caquets" (D), with tritone (A flat) and dominant (A) pairings. "Colère" is the only section with a different tonal centre: G; Normandeau reinforces this new tonal centre with B and D, thus continuing the presence of the work's overall tonal centre. This pitch content, however, grows increasingly unstable, with chromatic (A flat, E flat) and diatonic (C, E) embellishments in the timpani, marimba, and vibraphone. Harmonic stability is restored, though, in the end, with a return to G, B, and D in the timpani; even this harmonic closure is somewhat undermined by the marimba and vibraphone insistence on *Baobabs*'s overall tonal centre: D, reinforced by A.

This fourth section heads straight into the fifth section. The timpani returns to the tonal centre of D with A flat or G flat acting as tonal polar. "Sérénité" consists of three subsections. The first subsection comprises two parts that alternate three times, with some variations. While both of these parts use the same instrumentation, the rhythmic patterns, vocal contours, and onomatopoeias distinguish them.

FIGURE 14 Formal diagram of "Sérénité."

						2	3
			1				
a	b	a`	b`	a``	b``		
354-369	370-373	374-377	378-381	382-385	386-393	394-430	431-457

Even as the timpani reiterate D throughout this section, both players add chromatic embellishments above, as D alternates with A, then A flat, then G, G flat, and so on, in chromatic descent. Near the end of this subsection, a new pattern emerges in the marimba and alto ('pouff'), with large leaps between D and G sharp and a distinctive dotted sixteenth-note pattern, and xylophone, with changes between C sharp/D sharp and A sharp/F sharp (see Figure 11). All other sounds drop out, leaving only these three to transition into the final subsection. The final subsection welcomes the glockenspiels for the first time, one with an expanding chromatic step-wise pattern (with a similar pattern in the soprano) and one with a new dotted eighth-note pattern.

The relatively conservative tonal and formal elements in the percussion belie the textural and timbral complexity and depth in Normandeau's work.

Complexity, vibrancy, and contrast: timbre and texture in *Baobabs*

The interest in *Baobabs* lies in its heterogeneous timbres (see percussion list, Figure 4) that juxtapose sharp and soft, harsh and warm, and bright and dull timbres, and textural variety that contrasts dense and sparse, and coordinated and irregular textures.[43]

Sections one, three, and five are the most active and dense, due mostly to their respective rhythmic profiles outlined above. Sections two and four provide sharp contrast to the other three sections. "Nostalgie" maintains the same instrumentation throughout the section (two timpani, cymbals with bow, thunder tube drum, and vibraphone with bow), creating an overall static timbre with subtle nuances created by the sliding pitches in the voices and vibraphones, as well as the internal profile of the sustained timbres of the bowed vibraphone and cymbals. In contrast to the sharp consonants that characterize "Caquets," "Nostalgie" emphasizes [ou], an open vowel that supports and enhances the sustained timbre and texture of the instruments. Normandeau colours this open vowel with [r], [m], and [gn].

Section three, "Colère," creates a striking contrast with its surrounding sections, with abrupt and loud changes, vigorous rhythms, new timbres, and

43. This textural and timbral variety owes much to *Le renard et la rose*; for more information, see Woloshyn, 2011b, online.

staggered voices. Normandeau uses the frog rasper, brake drum, and flexatone for the first time.

"Lassitude" is subdivided into four parts, each named for a space that Normandeau associates with the human experiences: '*salle*', '*intime*', '*pièce*', and '*extérieur*'. Both '*intime*' and '*pièce*' suggest a private space, but '*intime*' connotes closeness. Alternatively, '*salle*' and '*extérieur*' both suggest public spaces, despite the former being an indoor space and the latter an outdoor one. Normandeau creates subtle contrasts between these four domains in *Le renard et la rose*, namely through the varied use of reverberation and filtering. These four spaces are more plainly delineated in *Baobabs*.

"Lassitude" begins with a recollection of the sustained textures in "Nostalgie," using tremolo marimba, wind chimes, and lion's roar over a de-emphasized triplet D-A flat pattern in the timpani; the voices slide slowly up and down on [ou], using onomatopoeias such as 'moum', 'vou' and 'oum' (mm. 300-319; see Figure 15). The second part (mm. 320-327), '*intime*', reestablishes a steady pulse with a woodblock rhythm and coughing patterns in the voices. Normandeau had also included coughs in this part of *Le renard et la rose*, but their presence is obscured by an active and dense texture. The coughing in *Baobabs* has a greater sonic connection to the coughs in "Sérénité et texture" of *Le renard et la rose*. Early in this section, with the first sudden decrease in texture following the gradual build-up at the beginning of the section, Normandeau inserts two coughs (11:59) that align with that section's rhythm. These coughs remain throughout this section, although they are harder to discern when the texture suddenly thickens (e.g., 12:08, 12:24). This cough is taken directly from *Le petit prince*'s radio adaptation during Chapter 8, when we first meet *la rose*. The rose's voice sounds delicate, fragile, naive, and almost immature. Her pathetic cough pierces through the sonic environment.

In the third part of "Lassitude" (mm. 328-335), the soprano and tenor return to the opening *glissandi*, this time with the onomatopoeias 'pouff' and 'ouff'. The alto challenges the steady pulse with free articulations of [k] (see Figure 16). In the final part (mm. 336-353), '*extérieur*', rhythmic simplicity returns with half note articulations in the bass drum and bass. The tubular bells and timpani add tonal variety by articulating only pitches from the pentatonic scale (using the black keys only) and *glissandi*, respectively.

Beneath the live voices and percussion lies much of the original acousmatic work. Though it never overshadows the live timbres, textures, and rhythmic articulations, it crucially contributes to the richness and deep aural interest of *Baobabs*. The two are partners—live and fixed—with each enhancing and explicating the other through combination and comparison.

FIGURE 15 Vocal *glissandi*, mm. 312-319.

Fixed vs. mixed media

Electronic technology has the potential to emancipate two things: sound and the composer. Composers seek infinite options; now any sound imaginable can be created with technology, turning the studio into a kind of instrument.[44] Similarly, because the work can be completely created and realized on a fixed medium in the studio, the composer is no longer at the mercy of an interpreting performer.[45]

Le renard et la rose is a fixed medium work: while it would not exist without the initial vocalists, the work itself is a product of Normandeau's compositional craft, which resembles a sculptor shaping his source material. With *Baobabs*, performers return to their traditional status; the expression of Normandeau's abstract compositional work is realized only through the

44. See Emmerson, 2000.

45. While performers may be recorded during the creative/compositional process, purely fixed media works, with no live performance component, remove this intermediary position that is essential to most Western art music.

FIGURE 17 Gradual decrease and increase of triplet groupings, mm. 4-6.

four singers and the percussionists and their ability to express a wide timbral range and blend into complex textures, in real time. The listener shifts his focus from a sound's internal morphology and transformation to the active creation of sound through percussive gestures and vocal articulations. Each performance of *Baobabs* will be different, as articulations may vary slightly between vocalists, tempos may fluctuate,[46] and all approximated vocal gestures (e.g., *glissandi*) will be impossible to replicate exactly. In addition to *glissandi*, Normandeau includes other imprecise indications that allow performers to individualize the performance, such as a gradual decrease and increase of triplet groupings (see Figure 17), un-notated pitch and rhythm, and descriptive timbral indications (see Figure 18). Timbre has always been the crucial musical element since the early experiments in *"musique concrète"* and *"elektronische Musik"*: to explore the timbral qualities within real world sounds or to build new timbres from scratch. In *Le renard et la rose*, a fixed acousmatic work, Normandeau has complete control over the timbral qualities. In *Baobabs*, he has given up control and must trust the musicality of the performers.

For many composers, remaining in the secluded studio allows them to completely internalize their ideas, to control every element, and to realize their exact musical imagination. While Normandeau is certainly most known for his fixed acousmatic works, he does not restrict himself to the closed and controlled world of the electronic music studio. He embraces process, change, and adaptation, such as turning incidental music for theatre productions into independent works.[47] The *Onomatopoeias* cycle, though fixed-medium, similarly demonstrates a desire to expand on previous work and reject permanence. And with *Baobabs*, we see not only an openness to once again explore and adapt older material, but also a willingness to work with the strengths and vulnerabilities of live performers—to relinquish control in order to serve a greater musical and performative purpose.

46. For example, on the live recording, most of the first section hovers between quarter note = 116 and 124 though the score has a tempo indication of 134. A different group of performers may achieve the indicated faster tempo.

47. Works adapted from incidental music for theatre projects include the following: *Le cap de la tourmente* (1984-85), *Fragments* (1992), *Électre suite* (2000), *Erinyes* (2001), *Éden* (2003), *Hamlet-Machine with Actors* (2003), *Puzzle* (2003), *Matériau pour Médée* (2005), *Kuppel* (2005-6), and *Pluies noires* (2008).

FIGURE 18 Descriptive timbral indications, m. 394.

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