On 25 January 1835, the premier of Bellini’s *I Puritani* took Paris by storm. Its most popular number was the Act 2 duet for bass voices, sung by Luigi Lablache and Antonio Tamburini, “Il rival salvar tu dèi” – or more precisely, the final statement of the *cabaletta* theme, “Suoni la tromba”, which was sung in unison. All the critics commented on this moment, and tried to account for its popularity, which concerned the ways in which the voices melded, vibrating thrillingly together, creating an overwhelming “electric” effect in the auditorium. The following description is typical:

la cabalette a fait une explosion foudroyante. C’est un chant de trompette et par conséquent d’une mélodie très-simple ; Lablache le dit, Tamburini le répète, en y ajoutant quelques broderies, et, après un trait sur la dominante, ils reprennent tout les deux la cabalette à l’unisson. ... L’unisson des deux voix graves et puissantes électrise toute l’assemblée ; on fait répéter chaque fois cette dernière partie du duo, pour applaudir encore avec fanatisme.¹

[the cabaletta made a startling explosion. It is a trumpet tune and consequently a very simple melody; Lablache sings it, Tamburini repeats it, adding a few *broderies*, and, after a cadence on the dominant, they resume the cabaletta together in unison. ... The unison of the two deep and powerful voices electrifies everyone present; this final part of the duet is encored every time, to fanatical applause.]

One critic concluded: “leurs deux voix se mariaient comme deux cordes d’un même et admirable instrument”.² Another that “ils confondent leurs accents en signe de l’union intime de leurs âmes”.³ For another, “il serait difficile de trouver un morceau où ce

² “[T]heir two voices marry like the two strings of a single, excellent instrument”, *Vert-Vert* (25 Jan 1835).
The astonishing power of this combined super-voice seemed to derive from the sympathetic vibration between Lablache and Tamburini in the unison passage, a resonance that for another commentator communicated to the audience “le triomphe ... de la voix humaine”. The two singers had each established careers in Italy in the previous decades, performing a similar portfolio of bass roles, embracing buffo, nobile and cantante qualities. Lablache debuted at the Théâtre Italien in Paris and the King’s Theatre in London in 1830, and for a few years the two singers alternated, much like the figures on a weather clock: when Lablache returned to Italy in 1832, Tamburini went north for the first time; when Tamburini headed back to Italy, Lablache was again in Paris and London. However, after appearing together in La gazza ladra in Paris on 2 October 1834 they appeared regularly on the same stage, and premiered not only Puritani, but also Donizetti’s Marino Faliero, and appeared in a stream of other works at the Théâtre Italien as part of the so-called Puritani Quartet with Giovanni Battista Rubini and Giulia Grisi. Although Lablache – a large, imposing and charismatic figure with an extraordinarily powerful voice – was sometimes viewed as being on the verge of swallowing up those appearing on stage with him, he was more frequently described as an extremely sensitive performer – in terms not only of his acting skills, but also his awareness of fellow singers, and nuancing of the volume of his own voice to produce a balanced sound – whether as a soloist, or in an accompanying role in ensemble numbers.

In this article, I employ the Puritani duet and its reception as a lens though which to examine the singing voice as it was understood in mid-1830s Paris, and in particular the singing voice of Lablache. There was already considerable scientific interest in magnifying sound to render the inaudible and invisible perceptible: René Laennec (1781–1826), for example, was studying the inner soundscape of the human body by

4 “[I]t would be difficult to find another number where this singer [Lablache] produces more effect”, J.T. [MERLE], La Quotidienne (2 Feb 1835).

5 “[N]ous voyons bien moins le triomphe du compositeur que celui de la voix humaine” [we see less the triumph of the composer than that of the human voice], E. M[ONNAIS], Le Courrier français (29 Jan 1835).

6 These included the premieres of Balfe’s Falstaff (1838), Mercadante’s I briganti (1836) and Donizetti’s Don Pasquale (1843), written for them, but their repertory also covered staples of the Italian repertory by Rossini, Bellini, Donizetti and other composers. For more on Lablache’s activities, see C. LABLACHE CHEER, The Great Lablache: Nineteenth-Century Operatic Superstar His Life and His Times, XLibris, 2009.
means of his new “stéthoscope”, developed in 1816–1817. He described his first artificial amplification of the sound of the heart, and its effect on the listener, as follows:

Je pris un cahier de papier, j'en formai un rouleau fortement serré dont j'appliquai une extrémité sur la région précordiale, et posant l'oreille à l'autre bout, je fus aussi surpris que satisfait d'entendre les battements du cœur d'une manière beaucoup plus nette et plus distincte que je ne l'avais jamais fait par l'application immédiate de l'oreille.

[I rolled a quire of paper into a kind of cylinder and applied an end of it to the region of the heart and the other to my ear, and was not a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear.]\(^7\)

It was likely, he believed, that “le même phénomène a lieu lorsqu'on applique le cylindre sur la trachée-artère ou sur le larynx”.\(^8\)

Michel Foucault coined the term “medical gaze” to denote such dehumanising medical separation of the patient's body from the person; he viewed the stethoscope as at once a scientific, social and ethical device, which created personal distance between doctor and patient while simultaneously permitting unprecedented intimacy.\(^9\) The stethoscope was just one of a series of instruments and techniques that were to make the undetectable discernable, part of a structure of (clinical) perception that Foucault termed “invisible visibility”. Meanwhile, however, in the early 1830s, such scientific experimentation with technologies of magnification were flowing into cultural contexts, without the

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\(^8\) “[T]he same phenomenon would occur when one applied the cylinder to the vocal tract or to the larynx”, Laennec, De l'Auscultation médiate, p. xi [report from the Académie].

problematic ethical implications of a clinical setting: megaphones were employed in Meyerbeer's *Robert le diable* (1831), for example, as the novel means by which invisible underground demons become audible – to the saintly Alice and to the audience.

But listening alone did not allow one to determine the cause of the sounds, and there was an increasing desire to reveal the mechanism. Laennec performed autopsies on his patients and related the sounds he had heard to pathological changes found during dissection. A similar need to explain through visualisation can be traced in scientific experiments on the voice and in singing treatises during the first decades of the nineteenth century, as we shall see in the next section. But the play between the visible and the audible also formed a focus of fascination in cultural expression and informed modes of listening. Francesca Brittan has demonstrated how the visually determined fairyscapes of the imagination were brought to musical life by Mendelssohn, in a new aesthetic of the fantastic. Deidre Loughridge has explored the cultural diffusion of visual technologies such as magic lanterns, shadow plays and telescopes in relation to more attentive listening in turn-of-the-century Germany, and revealed the wider organisation of audiovisual culture at this period. Both scholars are interested in the relation between seeing and hearing – looking and listening – and the technological means by which the senses were extended to master invisible forces.  

My article takes as its backdrop this fluidity between audio and visual cultures, between scientific and cultural expression, and the fascination with “invisible visibility”. In the first section, I set out the principal ways in which the voice was understood in the early 1830s by scientists in Paris, and how Francesco Bennati, employed as house physician at the Théâtre Italien, contributed to knowledge of the vocal mechanism by observing singers in action and using his visual imagination. I then consider how the voices of Lablache and Tamburini were perceived by contemporaries in the early 1830s, before examining details of the *Puritani* duet more closely. I return to the idea of amplified sound, and argue that the duet effectively puts Lablache’s voice under a microscope, bringing to the surface its timbral components, “performing” scientific discovery in a manner that offered immediate illumination. In this manner, the performance complemented, and even anticipated, some of the findings of more conventional scientific methods of the moment.

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The vocal mechanism

As James Q. Davies has shown, the focus in singing treatises and in physiological examinations of the voice shifted during the 1820s and 30s, from the visible actions of mouth, lips, tongue and teeth to the more mysterious inner workings of the larynx and vocal tract – and concurrently from how the larynx functioned in isolation, to how it interacted with larger structures.\(^{11}\) The principal debate during these years concerned whether the voice most resembled a flute or a violin – and how changes in pitch were effected.\(^{12}\) On the one hand, the physicist Félix Savart (1791–1841), rooting his argument in that of established eighteenth-century theorists, understood the larynx as a static structure, and concluded that the region above it – the pharynx, soft palate and oral and nasal cavities (what we call the vocal tract) – was responsible for controlling pitch, operating rather like the keys of a flute in shortening the fixed length of a tube.\(^{13}\) But this conventional view was challenged by François Magendie (1783–1855), who severed the throat of a living dog above the thorax cartilage, to observe laryngeal action while the dog howled. He concluded that the lips of the glottis (within the larynx) must be in contact for sound to occur, functioning more like the strings on a violin, and that all pitch modification was therefore centred in their action. But – unable to observe the vocal tract of the barking dog – he could not ascertain how the actions of the raised and lowered larynx impacted on vocal timbre.\(^{14}\)

The physician Pierre-Nicolas Gerdy (1797–1855) announced in 1830 that in order to understand speech and pronunciation, ”il faut absolument étudier par la vue, au miroir, les mouvements des organes prononciateurs, même les plus profonds; car il ne suffit pas de les étudier, comme on l’a fait jusqu’à ce jour, par l’obscur sensation qu’ils donnent”.\(^{15}\) Experiments with throat mirrors, specula and “glottiscopes” by Garignard de

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\(^{13}\) Savart’s publications included ”Mémoire sur la voix humaine”, *Journal de physiologie expérimentale et pathologique*, 5, 1825, pp. 367–93; cited and discussed in BLOCH, ”The Pathological Voice of Gilbert-Louis Duprez”, p. 19.

\(^{14}\) Magendie’s publications included *Précis élémentaire de physiologie*, Paris, Méquignon-Marvis, 1816; the chapter on voice was revised and expanded in the 1833 edition of the work; see BLOCH, ”The Pathological Voice of Gilbert-Louis Duprez”, p. 24.

\(^{15}\)”[W]e must study visually, with a mirror, the movements of the organs of pronunciation, even the deepest; as it is not enough to study them, as we have done until now, by the obscure
la Tour and others during the 1820s, 30s and 40s had limited use, however, and it was only in 1854 that the singer and pedagogue Manuel Garcia (1805–1906) saw the functioning glottis and larynx in a living human (himself) for the first time, with his new “laryngoscope” – and reported his findings at the Royal Society in London.¹⁶

In the meantime, the less invasive experiments of Francesco Bennati at the Théâtre Italien mark an important moment in the attempt to understand the voice and its inner processes.¹⁷ Bennati was a physician and singer, a self-described “bari-tenor” with a three-octave range who had trained as a doctor in Pavia and with the castrato Gaspare Pacchierotti. In the summer of 1830 he was appointed house physician at the Théâtre Italien. His role was to look after the health of the theatre’s singers: he observed them in action and the opera house thus became his laboratory. He presided over a proliferation of voice types at a time when – as Davies has memorably observed – audiences took pleasure in discerning “several contrasting voices in the same mouth, or one voice in several mouths”.¹⁸

On arrival in Paris, Bennati claimed that after 12 years of experimentation and observation of the best singers of the era, he was able to confirm the Italian theory of two registers, and this underpinned his theories about voice.¹⁹ Building on the experiments that Nicolas Deleau had carried out the previous year on deaf-mutes, he put a hollow tube up his own nose to force air through his throat; inhaling at the same time, he was able to produce two voices simultaneously from these different sources of air, “d’une manière si distincte et si pure, que les personnes qui assistaient à l’expérience crurent ouïr deux individus qui répétaient les mêmes phrases”.²⁰ His claim – ratified


¹⁷ Although he also advertised a “speculum”, developed by one of his patients; see Davies, Romantic Anatomies of Performance, p. 133.

¹⁸ Ibid., p. 181.

¹⁹ Bennati claimed he had already communicated with a professor of physiology at the University of Padua, M. Gallini, on this very subject in 1821, before he had carried out the appropriate experiments. F. BENNATI, Recherches sur le mécanisme de la voix humaine, Paris, Baillière, 1832, pp. x–xi.

²⁰ “[I]n a manner so distinct and so pure, that the people present believed two individuals had spoken the same phrase”, ibid., pp. xii–xiv.
later the same year by Georges Cuvier at a meeting of the Académie des sciences – was that the voice was not a single organ comparable to a wind or string instrument, but rather a complex “instrument sui generis”\textsuperscript{21}.

In his writings of the early 1830s, Bennati attempts to explain the function of the (unseen) vocal tract in “modulating” the voice, something that – as he notes, pointedly – physiologists had thus far neglected. Rather than listening attentively to the throat with a stethoscope to magnify the sound, as Laennec might have recommended, he instead studied his various singers in action, taking a comparative approach to imagine the inner workings of the vocal organs. He deduced that notes said to come from the head were actually the result of the strongest contraction of the upper part of the vocal tract, “sur-laryngiennes” (or above-larynx); notes from the so-called chest voice were “laryngiennes” (produced “in-larynx”).\textsuperscript{22}

Bennati offers examples of singers with extended vocal ranges (soprani-sfogati, tenors-contraltini and basses-tailles), who operate in both these “registres” and have a more developed and mobile upper vocal tract and a thinner soft palate, enabling more agile movement. He contrasts them with singers who have a more restricted range and remain in the first (“in-larynx”) register: they have a thicker soft palate, larger tongues, and their voices are characterised more by intensity and force than flexibility.\textsuperscript{23} Singers whose voices encompass both registers require more art to pass from one to the other, and so are fatigued more easily than those who remain only in the first register.\textsuperscript{24} Bennati categorised Tamburini as having an extended voice, operating across two registers (along with Mombelli, Sontag, Rubini and others), while Lablache remained

\textsuperscript{21} The term is Cuvier’s; his report was published two days after Bennati’s demonstration: “Sur le mécanisme de la voix humaine dans le chant par M. Bennati: Séance du 10 mai”, \textit{Le Globe}, 6/86 (12 May 1830); cited and discussed in \textit{DAVIES}, \textit{Romantic Anatomies of Performance}, pp. 133–134.

\textsuperscript{22} \textit{BENNATI, Recherches}, pp. 48–49.

\textsuperscript{23} The bass Santini had the longest and largest tongue Bennati had ever seen: he was able to touch beneath his chin with the tip of his tongue, \textit{ibid.}, p. 26.

\textsuperscript{24} My use of the term “register” in this article follows Bennati’s contemporary definition, which distinguishes between “in larynx” and “above larynx” voices, and focuses on the links between range and flexibility. In modern speech pathology the term is used to distinguish between chest/modal (normal), and falsetto (along with with vocal fry and whistle register), and is associated with vocal fold configurations. See Johan Sundberg, “Acoustics, §VI: The voice”, \textit{iii) Register, Grove Music Online. Oxford Music Online}. Oxford University Press. Web. 5 Dec. 2016. \url{http://www.oxfordmusiconline.com/subscriber/article/grove/music/00134pg6}. 
almost exclusively in the first. “in larynx” register (along with Catalani, Ambrogetti, Galli, Santini).\textsuperscript{25}

Although Bennati explains the relationship between range and the relative flexibility and volume of individual voices – the comparison of individuals is instructive – he says very little about the defining colour and tone quality of a voice. For Gerdy, this was determined in part by the intensity of its vibrations, which resonated with other vibrations, and in part by its “timbre” – though this term was difficult to define: “le timbre est ... une qualité dont on ne saurait donner la théorie”.\textsuperscript{26} However, significant progress in establishing the acoustic nature of timbre was to be made over the next decade, when scientific debate centred on the tenor Gilbert-Louis Duprez’s so-called “ut de poitrine”, or C from the chest (first heard in his debut in \textit{Guillaume Tell} in 1837).

Although the singer claimed that the note simply “happened”, emerging naturally from his state of heightened emotion, there were nevertheless attempts to characterise it as an artificial sound. The received view – as espoused by Bennati – was that the larynx ascended during high notes, but Paul Diday and Joseph-Pierre Pétrequin concluded in their \textit{Mémoire sur une nouvelle espèce de voix chantée} (1840) that Duprez’s low, fixed larynx increased airflow and glottal closure, creating more energy and a darkened vocal technique in the upper register, which they called a \textit{voix sombrée}.\textsuperscript{27} Manuel Garcia noted later the same year in his \textit{Mémoire sur la voix humaine}, that \textit{voix sombrée} was simply another name for his own concept of \textit{sombre timbre}: register originated in the glottis, and timbre in the space above – they were co-dependent phenomena. This conceptual shift eventually received visual confirmation with Garcia’s laryngoscope: laryngeal adjustments altered the quality and force of vocal resonance: the vocal tract controlled timbre.\textsuperscript{28}


\textsuperscript{26} “[T]imbre is ... a quality about which we do not know how to theorise”, Gerdy, \textit{Physiologie}, p. 743. Magendie had previously noted that no satisfactory account had thus far been given, \textit{Précis élémentaire de physiologie}; cited in Bloch, “The Pathological Voice of Gilbert-Louis Duprez”, p. 23.

\textsuperscript{27} They drew parallels between the throat with a fixed larynx, and the trumpet or horn with a fixed length of tubing for which one altered one’s embouchure to modify pitch. (In contrast, the \textit{voix blanche} with its mobile larynx was equivalent to the oboe, whose length was changed by the action of the player’s fingers to cover and reveal holes in the bore.)

\textsuperscript{28} These debates of the 1840s, as focused around Duprez, are summarized in Bloch, “The Pathological Voice of Gilbert-Louis Duprez”, pp. 24–31.
My argument here is that the *Puritani* duet anticipates this conceptual shift of focus from register to timbre and its visual elucidation in a novel way. Lablache retains the power of his low first-register voice, while Tamburini adds the upper register: this combined sound captures the full power of the bass voice through its complete spectrum, and Tamburini (and the higher instruments) make the upper harmonics of Lablache’s voice more clearly audible.\(^{29}\) While critics got no closer than Gerdy to theorising timbre, their descriptions nevertheless help us appreciate the depth rather than simply the power and range of the combined Lablache-Tamburini voice, and thus provide useful evidence of the imaginative ways in which audiences perceived sound:

> cherchez trois ou quatre autres basses d’un timbre formidable, faites les chanter à l’unisson avec Tamburini et Lablache, toute de suite votre duo deviendra trois ou quatre fois plus beau, plus miraculeux, plus prodigieux, plus stupéfiant, plus foudroyant.\(^{30}\)

[look for three or four other basses with a formidable timbre, make them sing in unison with Tamburini and Lablache, at once your duo will become two or three times more beautiful, more miraculous, more prodigious, more stupefying, more terrible]

In the following section, I argue that the unison passage in the duet in fact offers an aural dissection of the timbre of Lablache’s voice: the inaudible is made audible to the audience.

**Lablache and Tamburini**

Critics seemed to concur on the defining characteristics of Lablache’s and Tamburini’s voices. Castil-Blaze wrote short biographies of both singers around 1832–1833, and these provide a helpful starting point, in terms of how these singers were being heard at this time – and the mythologies that were already shaping their reception.\(^{31}\)

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\(^{29}\) Our hearing is more sensitive to higher frequencies, and so the fundamentals of low male voices depend on the power carried by harmonics that fall in the range of high aural sensitivity. For more on perception of harmonics, see W. M. Hartmann, *Principles of Musical Acoustics*, New York, Springer, 2013.

\(^{30}\) S****, *Le Réformateur* (6 Feb 1835).

Lablache (1794–1858), we are told, had many voices as a child: he played the violin and cello (and later the double-bass) and sang contralto, and could thus contribute to the orchestra and choir in a number of roles. Even at this early age, his sensitivity and ability to adapt, chameleon-like, was evident: when the choir lined up to perform Mozart’s Requiem at the Conservatoire in Naples, to commemorate the death of Haydn in 1809, there were only four contraltos alongside 16 basses, 12 tenors and 12 *dessus*; Castil-Blaze tells us that “Par un excès de zèle et pour rendre l’équilibre à son cher contraire, il poussa la note avec une vigueur extrême pendant tout le cours de la messe, et parvint à balancer ainsi les parties rivales, à lutter même avec avantage contre elles”. As a result he lost his voice, but then: “un jour … il s’éveilla toussant, parlant, chantant avec une basse sonore, vibrante et d’une puissance merveilleuse”.\(^{32}\) In contrast, the young Tamburini (1800–1876) learned the horn as a boy and sang soprano. And, even after the emergence of his own “sonorous” and “flexible” bass voice, he seems to have maintained a fine falsetto, on one occasion stepping in to perform an aria for an indisposed soprano, who leaned motionless on his shoulder as he sang. Although their vocal profiles were quite different, then, from an early age they seem to have shared a capacity to inhabit different voices (Lablache’s in the lower register, Tamburini both high and low), and an attunement with other voices and instruments that even in 1832, when Castil-Blaze was writing, seems prophetic.

In terms of compass, Lablache’s was rather modest (or at least that is how critics saw it), from G to e’, his finest note for Castil-Blaze being c’ – which, as we shall see, was fully exploited in the *Puritani* duet.\(^{33}\) Tamburini’s range extended comfortably from A to f’ (even G to g sharp’).\(^{34}\) They had nevertheless sung many of the same roles in their 20-year careers in the Italian peninsular – both, for example, were celebrated Figaros – and shorter than the one on Lablache, which perhaps reflects the higher profile and greater popularity of the latter at this time; he was regularly lauded as the best Italian bass of his day.

\(^{32}\) “[O]wing to an excess of zeal, and to balance his opposite number, he sang out with such extreme vigour during the course of the mass, and managed to hold the rival parties in balance, to struggle advantageously against them … one day … he woke up coughing, talking, singing with a sonorous, vibrant, marvellously powerful bass [voice]”, CASTIL-BLAZE, “Lablache”, p. 179.

\(^{33}\) “Cette note est la plus belle de la voix de Lablache”, XXX CASTIL-BLAZE, *Revue de Paris*, 14, 1835, pp. 68–75 at p. 73. Though elsewhere, it is more often the high d’ that is claimed as Lablache’s “best” note, by Castil-Blaze and others. I use Helmholtz pitch notation, whereby middle C = c’.

\(^{34}\) CASTIL-BLAZE, “A Biographical Notice on Tamburini”, p. 126.
it seems to have been the distinctive timbral qualities of their voices that defined them more conclusively at this stage than the differences in compass. Castil-Blaze captures them thus:

Lablache:

On admire tour à tour le son plein, vibrant et suave de sa voix; la franchise de son exécution, et l’éclat de ses traits de basse qui sillonnent l’ensemble vocal et ne se confondent point avec les traits des instruments graves qui les doublent. [...] Si l’on excepte les deux notes extrêmes, cette voix sonne également sur tous les points, tinte comme une cloche ; elle est mordante par la force de ses vibrations et non par la contraction du gosier. Le son s’échappe de la poitrine aussi librement que d’un tuyau d’orgue de huit pieds.

[We admire, in turn, the full, vibrant and suave sound of his voice; the freshness of his execution, and the brilliance of his traits as a bass who weaves through the vocal ensemble while staying distinct from the low instruments that double him. [...] If we except the two extreme notes, this voice rings out equally on all notes, pealing like a bell; it is penetrating by force of its vibrations rather than contraction of the throat. The sound escapes from his chest as freely as if from an eight-foot organ pipe.]

Tamburini:

It is round, rich, and clear, of wonderful flexibility, and such astonishing firmness, that it is impossible to suspect any note is passed over unperceived. He has the neatness and precision of execution that Ber and Barizel have acquired on the clarionet or bassoon. The tone is equal in its whole extent, taking and holding F sharp with as much ease as a tenor voice would do, or running over the notes

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35 They were both described by contemporaries as “basses”, or “basses-tailles”, though through the 1830s and 40s, while Lablache became best known for his lower notes, Tamburini became increasingly known for roles in a slightly higher range: modern dictionaries usually classify him as a baritone (an emerging vocal category) or bass-baritone. See, for example, Elizabeth Forbes, “Tamburini, Antonio”, Grove Music Online. Oxford Music Online. Oxford University Press. Web. 5 Dec. 2016. <http://www.oxfordmusiconline.com/subscriber/article/grove/music/27451>.

with a vivacity unheard of till now.37

These descriptions (and those of other critics) mesh with Bennati’s observations around the same time concerning the relative power and flexibility of voices situated primarily in one “register” (Lablache) or across two (Tamburini). Lablache’s power is compared to that of brass instruments and the organ (though he is careful not to overwhelm), while Tamburini’s gentler sound is likened to that of (reed) wind instruments. Tamburini’s ease in the high register points to an affinity with the (heroic) tenor, and contrasts with the authority of Lablache’s bell-like force. These traits seem to be borne out in their respective bass roles in *Puritani*: Tamburini is the would-be lover Riccardo; Lablache is the father-figure (uncle) Giorgio. Although compass is implicated in these descriptions, then, it is the quality of sound that Gerdy had pointed to – the timbre and resonance – that Castil-Blaze seems most keen to capture. A closer look at the duet, in terms of the relation between the two voices and the use of the orchestra, will help us develop these ideas.

“Suoni la tromba”

The duet is in the conventional four-part structure of the period: *tempo d’attacco*, *cantabile*, *tempo di mezzo*, *cabaletta*. As Mark Everist has observed, however, there are two unusual aspects to Bellini’s setting of the form, in the first and final parts.38

The *tempo d’attacco* (during which Giorgio tries to persuade Riccardo to save the life of his rival, Arturo) comprises three statements of the theme; the first would usually be sung by one singer, the second by his companion, and they would join together for the final strophe. Here, after a statement of the theme on the horn, the first strophe is sung by Giorgio-Lablache (with occasional shading of his vocal line by the horns – see Table 1 and Ex. 1), but frequently interrupted by Riccardo-Tamburini.39 Nevertheless, what


38 Everist’s focus is on Tamburini and the origins of the baritone voice, and (in this light) on “Il rival salvar tu déi/Suoni la tromba” as occupying an important transitional position in the history of duets for two “bass” voices. M. Everist, “‘Tutti i francesi erano diventati matti’: Bellini and the Duet for Two Basses”, in Giacomo Meyerbeer and Music Drama in Nineteenth-Century Paris, Aldershot, Ashgate, 2005, pp. 281–307.

39 Everist has suggested that Tamburini’s sensitivity to other singers is in evidence here, that he “vibrates discreetly yet forcefully, and keeping always in mind the balance of the piece and the regularity of the beat” – i.e. that Bellini had Tamburini’s qualities specifically in mind. But Everist
Everist identifies as Tamburini’s “interruptions” are melodically just continuations of Lablache’s line: he echoes, anticipates, or fills in the leaps, often leading the way into the upper part of “their” register (see Ex. 1). Indeed when Tamburini sings the second strophe, many of these interventions have been incorporated into the solo vocal line. The third strophe is delivered by Giorgio-Lablache, and his voice is here doubled by violin and flute. (Each strophe is accompanied throughout by the strings, and sustained wind chords are gradually introduced into the texture as it builds.) In this way, the audience is introduced to Lablache’s voice, but it is enhanced by orchestral doubling and by Tamburini. The horns resonate with Lablache’s naturally brass-like qualities; Tamburini and the violin and flute bring out the higher partials of the vocal line with equal force.

Table 1: opening of tempo d’attacco, “Il rival salvar tu dêi”

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<th>vocal line</th>
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<td><strong>Giorgio:</strong></td>
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<tr>
<td>Il rival salvar tu dêi</td>
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<td></td>
</tr>
<tr>
<td>Il rival salvar, salvar tu puoi</td>
<td>+ horns (sustained chords in 5ths)</td>
<td>strings</td>
</tr>
<tr>
<td><strong>Riccardo:</strong></td>
<td>Io nol posso</td>
<td></td>
</tr>
<tr>
<td><strong>Giorgio:</strong></td>
<td>No? Tu nol vuoi</td>
<td></td>
</tr>
<tr>
<td><strong>Riccardo:</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Giorgio:</strong></td>
<td>Ti il salva!</td>
<td></td>
</tr>
<tr>
<td><strong>Riccardo:</strong></td>
<td>No, ah! No, ei perirà</td>
<td>+ horns + clarinet (sustained chords in 5ths)</td>
</tr>
<tr>
<td><strong>Giorgio:</strong></td>
<td>Tu quell’ora o ben rimembri che</td>
<td>+ horns (x 2) echo the dotted rhythm of the</td>
</tr>
<tr>
<td></td>
<td>fuggi la prigionera?</td>
<td>speech, in octave F - following Giorgio’s f’</td>
</tr>
</tbody>
</table>

This sense of a fuller sound, in which the harmonic and timbral qualities of the voice in different registers are brought out, continues in the cantabile and tempo di mezzo. Riccardo-Tamburini tends to occupy the higher register, Giorgio-Lablache the lower, thereby guaranteeing the fullest possible sound throughout the range; precise instrumental shadowing of the vocal lines again brings out the natural qualities of both

is using the rather later words of R. Lorembert, *Notice sur M. Tamburini du Théâtre Royal Italien*, Paris, 1842, pp. 6–7; see Everist, “Tutti i francesi erano diventati matti”, p. 304. Qualities of sensitivity and attentiveness to others are just as often (perhaps even more frequently) attributed to Lablache in the 1830s, and might better be understood as qualities required in a bass voice, so often occupying an accompanying role in ensemble singing.
singers that Castil-Blaze had identified. Although there is nothing too unusual about such an approach, Bellini seems to have taken care to enhance the particular qualities of the voices – individually and in relation to each other – with his orchestration.

The other part of the duet that departs from convention, as we have already observed, comes in the cabaletta, “Suoni la tromba”, where Giorgio and Riccardo swear to take up arms and face death together (see Table 2 for the text). Its culmination is delivered not in thirds (or sixths or tenths) as one would expect, but in unison: as Everist has established, there was no precedent for this in a bass duet. Here, critics seemed to believe, it was Lablache’s particular vocal qualities that Bellini had in mind.

Table 2: text for the cabaletta, “Suoni la tromba”

<table>
<thead>
<tr>
<th>Suoni la tromba, e intrepido lo pugnerò da forte. Bello è affrontar la morte Gridando libertà!</th>
<th>Let the trumpet sound, and without fear I/you will fight bravely. It is a fine thing to face death shouting, liberty!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amor di patria impavido Mieta i sanguigni allori, Poi terga i bei sudori. E i pianti la pietà. All’alba!</td>
<td>Let fearless love of our country reap the bloody laurels of victory, and then let mercy wipe away the noble sweat and tears. At dawn!</td>
</tr>
<tr>
<td>Sia voce di terror patria, vittoria, onor!</td>
<td>Let it be a voice of terror: our country, victory, honor.</td>
</tr>
</tbody>
</table>

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40 In the cantabile, the theme is sung by Lablache, then by Riccardo; then together they sing in thirds and sixths. Here, first violins double Riccardo, second violins double Lablache, then the woodwind, horns and trumpets are gradually brought in, and the vocal line is orchestrally enhanced. This continues in the tempo di mezzo, though here the singers alternate lines.

41 Indeed, Everist claims that there were no duets for two basses on a serious subject before 1835, and follows up the examples of unison writing in earlier operas identified by reviewers, demonstrating their clear differences from Bellini’s opera – and thus confirming its striking innovation.

42 For example: “les deux basses y chantent à l’unisson, mais le musicien a si bien placé en dominantes les plus belles notes de la voix de Lablache, qu’il serait difficile de trouver un morceau où ce chanteur produisît plus d’effet, et de trouver un basse qui puisse le chanter avec plus de succès”. J.T. [MERLE], La Quotidienne (2 Feb 1835).
Giorgio-Lablache sings the two strophes (with Riccardo-Tamburini joining in—a third below—on the exclamation “All’alba!”). Riccardo-Tamburini then repeats: the notated decoration toward the end of his statement rises up to f’, where Giorgio/Lablache had descended, but otherwise the vocal lines (and orchestral accompaniment) are the same.\(^{43}\) In a third statement, the two singers alternate, Riccardo-Tamburini tending to sing the rising phrases, and Giorgio-Lablache the descending ones. Finally, they join together for the fourth statement: the first strophe is in unison, then they alternate lines for strophe 2, the effect is of one voice. After four more bars of unison, they break into harmony (thirds) for the concluding lines. The heroic quality of Tamburini’s voice in the higher register enhances the authority and weight of Lablache’s expression in this larger-than-life sonic presence.

The strings accompany throughout. Two pairs of horns provide rhythmic (triplet) urgency, while the vocal line is enriched by the violins, trumpet and woodwind (see Table 3 and Ex. 2). The first violins repeatedly support the voice when it rises to c’ and above; the woodwind bring out the timbral resonances as the voice descends from e flat’ to A flat. The trumpet accompanies the whole line “Bello è affrontar la morte gridando libertà!” an octave above the voice, supplying an arpeggiated E flat – A flat to link the two lines and provide momentum up through the octave to the climactic high e flat’ (the sort of function that Tamburini provided in the first statement of the \textit{tempo d’attacco}).

For Castil-Blaze,

\begin{quote}
C’est un chant de trompette qui bat sans cesse la même note, l’\textit{ut}, et s’élève au \textit{mi bémol} pour descendre diatoniquement sur le \textit{la bémol}. Il y a monotonie, puisque les voix restent longtemps sur une même note ; mais cette note est la plus belle de la voix de Lablache. Si les chants de trompette sont peu variés dans leurs intonations, ils ont une énergie particulière qui résulte de cette répétition fréquente d’une ou deux notes incisives et vibrantes.
\end{quote}

\(^{43}\) Giorgio-Lablache joins in a third below for “All’alba!”.
energy that results from this frequent repetition of one or two incisive and vibrant notes.]

In other words, the voices are trumpet-like in the first two lines, but when they are joined by the actual trumpet in the third line, the sound becomes high-resolution. Put slightly differently, the trumpets add definition to the clarion sound of the voices. The rallying cry is further intensified in the fourth line by the piccolo, flute, clarinet, which target the contrasting timbres of Lablache and Tamburini, filling out the timbral resonances through the full range of this composite voice.

Table 3: orchestral enrichment for “Suoni la tromba”

<table>
<thead>
<tr>
<th>Vocal Line</th>
<th>Accompaniment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suoni la tromba e intrepido</td>
<td>Sound the trumpet and fearlessly + violin + strings, horn, clarinet, bassoon</td>
</tr>
<tr>
<td>Io pugnerò da forte</td>
<td>I will fight strongly   + violin</td>
</tr>
<tr>
<td>Bello è affrontar morte</td>
<td>Bravely we will fight death + trumpet + violin</td>
</tr>
<tr>
<td>Gridando libertà!</td>
<td>Let’s cry freedom!      + trumpet, flute, piccolo, clarinet</td>
</tr>
</tbody>
</table>

The concluding lines “Sia voce di terror/ patria, vittoria, onor!” (repeated) are sung in thirds (Lablache concluding on his “best” d’, Lablache on the f’ above). The melody is doubled by high woodwind and violins, and the brass and lower strings and woodwind maintain the rhythmic energy. This final amplification embeds the Lablache-Tamburini “voice” in the orchestral-vocal texture, effectively increasing the timbral magnification to its maximum power.

What can we conclude from all this? I’m not suggesting that the nature of the orchestral accompaniment is particularly unusual, though the foregrounding of unison bass voices was certainly a “new” and striking sound. Rather, in these two departures from convention, Bellini was sensitive to the timbral and registral qualities of Lablache in particular. His qualities are brought into focus by magnification – both vocally and orchestrally. In other words, we are closer to “hearing” – as if through a stethoscope, perhaps – the invisible actions of Lablache’s vocal tract and the detail (at high resolution) of his timbre, right through his range. In the tempo d’attacco, the upper part of his compass is given reinforcement and harmonic resonance by Tamburini and the orchestra, and in the cabaletta, they supply more detailed timbral texture and further amplification.
Good vibrations

Castil-Blaze remarked on Lablache’s "organe sonnant", and the "bruit cyclopéen qui résultait de son accouplement avec la voix de Tamburini", emphasising the magnification effect of two in one – and the implication of brute strength and power. But for him, the genius of this unison passage lay not only in the impressive volume, but also in the vibrating powers of the two voices – a different way, perhaps, of addressing the timbral quality of the resulting super-voice, that drew attention to the magnetic attraction that glued them together:

Une entrée de chœur d’hommes aurait beaucoup moins de charmes et n’égalérait pas leur puissance ; car c’est toujours du son qu’elles donnent et non pas du bruit…. Le caractère bien distinct de chacune de ces voix rend leur unisson plus agréable. … C’est une heureuse idée que d’avoir pris ce motif à l’unisson dans la péroraison du duo. Cette mélodie n’aurait fourni qu’un second dessus insignifiant et gauche, et Lablache, tenant la partie grave, eût perdu ses avantages ; il aurait été forcé de se modérer pour ne pas couvrir le chant de Tamburini, tandis qu’avec l’unisson les deux voix concourent à le faire vibrer de toute leur puissance respective.

[An entrance by a male chorus would have much less charm and would not equal the power [of Lablache and Tamburini]; because it is always about the sound rather than the noise that [voices] produce.... The distinct character of each of these voices makes the unison more enjoyable. ... It is a good idea to have taken up this motif in unison for the peroration of the duet. The melody would have furnished only a secondary insignificant and graceless dessus, and Lablache, sustaining the lower part, would have lost his advantages; he would have been forced to adapt so as not to swamp Tamburini’s singing, whereas the unison of the two voices competing to vibrate with all their respective power.]

In other words, both singers could sing at full throttle, without (for once) Lablache needing to worry about drowning out his comrade. Moreover, each singer responded,

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44 “[R]esonant organ … cyclopean noise that results from the coupling of his voice with Tamburini’s”, CASTIL-BLAZE, Revue des deux mondes (1 Feb 1835).
45 CASTIL-BLAZE, Revue de Paris, 14, 1835, pp. 68–75 at p. 74.
46 However, this was achieved at some cost to Tamburini, swept up in the visceral thrill of the moment rather than protecting his voice. Later in the year Castil-Blaze was to report:
in the moment, to the sensation of the other’s voice, and in so doing produced a sound
that was greater than the sum of the parts.

A similar two-voices-in-one phenomenon was in evidence elsewhere in 1830s Paris.
James Davies explains how “many-voicedness” was becoming increasingly feminised:
the authority of the fused sound of rival sopranos Henriette Sontag and Maria Malibran
performing in Rossini duets (singing in thirds) in London in 1829 was “provocative”.47
Their “cycle of estrangement and reconciliation” – they were presented as (rivalrous)
opposites – played out in the theatres of London and Paris over the following years. One
of the reviewers of I Puritani remembered a similarly striking unison effect two years
earlier of the Grisi sisters, Giulietta and Giulia, in the Act 1 finale of I Capuleti e i
Montecchi.48 Théophile Gautier coined the term “diva” to capture this particularly

Entre tous les chanteurs italiens, Tamburini me semble être le seul qui n’a pas encore
retrouvé ses triomphes des années précédentes. … Je ne sais, mais je soupçonne fort le
duo des Puritains [I puritani] de l’avoir épuisé ; sa voix souple et flexible a souffert de
s’être si souvent tendue en de pareils efforts. Il est imprudent de se mesurer dans un
unisson avec un joueur tel que Lablache. Que Tamburini y prenne garde, sa voix si pure
finirait par s’étendre tout-à-fait, s’il en abusait long-temps de la sorte. En général,
l’unisson est funeste aux chanteurs qui n’on pas, comme Lablache, une poitrine faite
d’airain ou du métal dont on fait les cloches.46

[Among all the Italian singers, Tamburini seems to me the only one who has not yet
recaptured the success of previous years. … I don’t know, but I strongly suspect that the
Puritani duet exhausted him; his supple and flexible voice suffered from being so often
strained in such efforts. It is unwise to compete in a unison with a performer such as
Lablache. Tamburini should be careful, his voice, so pure, may finish up over-extending
itself, if he abuses it in this way over time. In general, the unison is disastrous for singers
who do not, like Lablache, had a chest made of brass, or a metal out of which one makes
bells.]

47 DAVIES, Romantic Anatomies of Performance, p. 70.
48 “Bellini avait déjà employé le même effet dans son opéra des Capuleti, avec cette différence
qu’il s’agissait de deux voix de femme au lieu de deux basses-tailles”, Revue musicale (1 Feb 1835),
9e année, no. 5, pp. 35–37, at p. 37. J. Q. DAVIES discusses the Paris reception of this vocal effect in
“Gautier’s ‘Diva’: The First French Uses of the Word”, in The Arts of the Prima Donna in the Long
feminine instantiation of the high-resolution “doubled” sound, with its sensuous and (for male critics) immoral implications.\(^49\)

Although Lablache and Tamburini were famously close friends rather than rivals, and their duet was in unison rather than in sonorous thirds or sixths, their fusion nevertheless seems to have caused an equivalent vibrating, “electrifying” effect – albeit cast by critics in more masculine terms of a power struggle.\(^50\) Moreover, the upper partials of Lablache’s low voice – barely discernable by the human ear – are brought to the surface and made audible. Timbre was inseparable from vibration – as Gerdy and others before him had observed – and although timbre may still have been un-theorised in studies of the voice, electricity proved a useful analogy to capture the mysterious powers it had over listeners as well as on co-performers. Claims for the powerful effects of electricity and music on physical and psychological health were predicated on an idea of the body as a conductor of electrical (or similar) forces that stimulated sympathetic vibration – a harmonic phenomenon, whereby a passive body responds to external vibrations to which it has a harmonic likeness.\(^51\) The magnified effect here was of two voices in sympathetic vibration with each other and with the orchestra as well as with the audience – the details of Bellini’s orchestral-vocal writing outlined above make explicit the co-vibration of Lablache and his fellow performers.

**Conclusions**

When Bennati arrived at the Théâtre Italien in 1830, it was his observations of a selection of professional singers that lead to his influential claims about register and the inner workings of the voice (even if these were to be superseded by later discoveries). Such imaginative fieldwork offered an important corollary to the experimentation of such scientists as Savart and Magendie. Observations of Gilbert Duprez, and his

\(^49\) *Ibid.*

\(^50\) Everist has noted the repeated use of electricity in the reviews as a comparator for the visceral effect of the unison passage. For discussion of the ubiquity of electricity in discourse about Italian opera in Paris during the 1820s and 30s see, for example, C. FRIGAU MANNING, “Singer-Machines: Describing Italian Singers, 1800–1850”, *Opera Quarterly*, 28/3–4, 2012, pp. 230–258, at pp. 243–248.

\(^51\) Electricity and music apparently shared the ability to both calm and stimulate the nerves, and inhabited the ambiguous space between the material and the intangible. On this topic, see, for example, J. KENNAWAY, *Bad Vibrations: The History of the Idea of Music as a Cause of Disease*, Aldershot, Ashgate, 2012; C. RAZ, “‘The Expressive Organ Within Us’: Ethere, Ethereality, and Early Romantic Ideas about Music and the Nerves”, *19th-Century Music*, 38/2, 2014, pp. 115–144.
anomalous "ut de poitrine" led in turn, in the 1840s, to advances in the understanding of timbre, and brought about the conceptual shift in scientific study, from register to timbre, that culminated with the visual proof (Garcia's laryngoscope) of the suspected function of the vocal tract that they had been working towards for the last half-century. In the meantime, however, Bellini had found an alternative medium for communicating the unique qualities of Lablache's voice. Rather than describing its effects (the tactic of the critics) or trying to visualise the mechanism, he used Tamburini and the orchestra to magnify the subtle qualities of timbre and resonance and laid them bare for the audience to hear.