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# Yodel Species: A Typology of Falsetto Effects in Popular Music Vocal Styles

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This article presents a classification system for falsetto vocal effects commonly 1 occurring in popular music. This typology developed from my research into yodelling and related vocal phenomena, which took as its starting point an analysis of yodel types prominent in pre-World War II hillbilly music. The intention in this brief summary is to provide a definition of yodelling that is meaningful and useful for the description of popular music vocal styles and in the process to problematise some of the ways yodelling effects have been conceptualised previously. Along the way I indicate a number of mood categories associated with them, but an aspect of my thesis concerns the ideological implications of the use of such techniques: that the audible break in the vocal register while singing has become a significant marker separating the aesthetics of the 'popular' from that of the 'classical'.

The yodel effects this paper deals with, although not completely unknown in 2 European classical singing, were nevertheless gradually expunged from conventional practice during the late nineteenth and early twentieth centuries. For example, the Tyrolienne towards the end of Rossini's *Il Viaggio a Rheim* was very likely yodelled in early performances, which seems not to be the case today. Additionally, with the vogue for Swiss ditties and similar in the middle nineteenth century, prominent singers such as Henriette Sontag and Jenny Lind performed yodel songs: their names are printed on the title pages of such songs from the era.<sup>1</sup> Later, at the beginning of the twentieth century, Ernestine Schumann-Heink, for example, recorded Millöcker's yodel song titled 'I und mei Bua'.<sup>2</sup> But by that time it was exceptional for a classical artist to yodel. Today, yodelling in so-called classical music is virtually unheard of. Yodel effects incorporated simply for the thrill of hearing the crack in the voice have for all practical purposes been non-existent in art music since the end of the romantic era.<sup>3</sup>

The reasons for this gradual exclusion of such techniques are complex, yet it is 3 significant that no notational device or sign to indicate yodelling effects ever came into being. In some cases in the early nineteenth century, passages in written music may be marked 'yodel', but that is usually as far as it goes. Such passages thus become improvisation, which was also edged out by traditional classical music pedagogy. Some passages expected to be yodelled look conventional –

there is nothing in the written symbols to denote yodelling. Were yodelling to become a permanent standard device, it would have had to have a method of notation devised for it, which never happened. Since classical music is learned from scores, not from listening, then without a secure place within the system of notation – one of the things that make classical music what it is – the yodel's chances of survival were limited.

Consider, for example, the case of *messa di voce*. This is an expressive swell in 4 the volume of a tone employed by singers for the purpose of decoration.<sup>4</sup> It is akin to trilling. There never developed a means of notating this particular effect. It is known because it was described, but it was not really a part of vocal technique in the nineteenth century; rather it was a baroque device that went in and out of fashion, but was never notated. Instead it was learned by tradition and applied according to taste in an improvisatory manner. The yodel is similar: it is a special effect that was at one time fashionable, learned by tradition and by ear. Yet its position within the canon of acceptable technique was precarious and tenuous at best. Ultimately, within classical music, it was excluded and forgotten, partly for the simple reason that what is not able to be notated in classical music by and large is left by the wayside. Had classical music been learned through oral tradition – through listening alone – then perhaps yodelling would have survived in it. But European classical music is not learned this way, and so the yodelling that enjoyed a brief life there eventually died.

The yodel was never a part of the pedagogical tradition either. Even now, when **5** professional voice teaching must take account of popular music singing styles, such as Broadway and rock styles, there is apparently little room for yodelling. <sup>5</sup> So partly because of the centrality of notation to the idea of classical music, and partly because its technique is antithetical to the technique of classical singing, which for two centuries or more has valorised smooth transition over the entire vocal range of a singer, the yodel lost its home in classical music.

## Popular Music Vocal Styles

We do not have many ways of describing vocal styles in popular music, which is particularly odd considering that idiosyncratic vocal stylisations are a principal characteristic of popular music styles across most genres. One might think that because of the wide variety of vocal styles a simple and generalising description of them is not possible, but in fact many characteristic vocal devices and decorative features can be reduced to a few acoustical facts which can adequately and uniquely describe what a singer is doing with her or his voice. With an appropriate and neutral way of describing vocal techniques it should be possible to move the description of popular music vocal styles away from biographical similes (sounds like Elvis) towards more disinterested and concrete descriptions.

Although it is intriguing and has been widely influential, Roland Barthes's article **7** 'The Grain of the Voice' has not been much help when it comes to qualitative

analysis because the musical signifier he describes, 'the grain, the grain of the voice when the latter is in a dual posture, a dual production – of language and of music', does not describe anything tangible. Indeed, Barthes acknowledges in the following paragraph 'the apparently abstract side' that he focuses on.<sup>6</sup> So it must be admitted that this particular signifier is very problematic as a descriptive tool. Barthes's 'grain' is in fact simply a metaphor, moreover unworkable as an instrument of analysis in that the corporeality of the voice is a given. In any event, his signifier is beside the point with regard to many yodel and falsetto effects for the simple reason that 'the encounter between a language and a voice'<sup>7</sup> does not actually apply to wordless, that is nonsense syllable, yodelling. Thus, what the essay at hand seeks to provide is a straightforward typology based upon empirical observation which can be of practical use in the description of real voice effects. The aim is to contribute to a discourse on popular music vocal techniques and to put the focus on what singers actually do with their voices. This seems to me to be a logical first step before attempting to systematise the relationships between the techniques of the performer and resultant affect in the hearer.

For this study, a very large selection of popular music was examined from which 8 the types described below were abstracted. These items included many examples of sheet music which incorporated specifically written yodel parts or written indications to yodel as well as parts not so denoted, but in which the implied yodelling was deduced or made manifest from later phonograph recordings. By examining pre-phonograph era sheet music a much better picture of the history of the technique emerged than would have been possible by simply listening to recordings. Consequently, this study problematises some of the previously made statements about yodelling and its spread through English language popular music recordings, examples from other popular music genres also are included in order to demonstrate that yodel devices have long been established in English language popular music and are not specific to any one genre or era.<sup>8</sup>

The yodelling styles we hear in English language popular music lack a convenient vocabulary that would facilitate their description. This is partly due to the fact that the conventional ways of describing vocal production have been the preserve of classical singing pedagogy, and yodelling has had no part to play in that. With Alpine yodelling, on the other hand, there is a bewildering variety of names and types. These include *Lockruf* (call tune), *Viehlöcker* (cattle call), *Betruf* (prayer call), and many others. This difference is akin to the oft-remarked fact that the Inuit have many words for snow, while in English we have one: in the context of the Alpine traditions, many signals and yodel-types developed for functional or for other reasons – reasons that simply do not obtain outside that environment. These are not discussed in this study for two reasons: first, they are dealt with thoroughly by Max Peter Baumann and Heinrich Leuthold in their discussions of yodelling,<sup>9</sup> and second, these numerous call-types have no particular significance in the context of English language popular music.

What became significant for later English language popular music was the **10** incorporation of yodelling into musical frameworks, a development that took place around the turn of the nineteenth century in Switzerland. The form that resulted is known as the *Jodellied*. In his description of traditional Swiss music in *The New Grove Dictionary of Music and Musicians*, Max Peter Baumann makes the following remarks concerning this type:

A form comprising alternate solo yodelling and singing, known as *Jodellied* or *Gsätzli*, appeared with increasing frequency towards the end of the eighteenth century. Its development is most closely associated with the work of J. H. Tobler, F. Huber, and F. W. Kücken, who accentuated the particularly Swiss element in their choral songs. F. Huber, A. Glutz . . . and J. Lüthy concluded their songs with a yodel-like coda . . . Because of the close association of the *Jodellied* with the 'stylised yodel' defined by A. Tobler (a yodelling melody whose vocables are replaced by words), and with the analogous type of *Ranz des vaches* whose melody has also been given words, it is difficult to distinguish these song types in performance.<sup>10</sup>

Most English language popular music with yodelling, at least in the nineteenth century, derives from the *Jodellied*. Of particular interest for the types of yodel heard in the music under discussion here is the mention of the 'stylised yodel' wherein the syllables of words, rather than nonsense syllables, are yodelled. This type of yodelling has been extremely significant in English language popular music, while at the same time has posed a few definitional problems.

Since yodelling in popular music is contextualised within the framework of a 11 conventional song type, it does not seem to me to be too reductive to consider all occurrences of vocalising making use of yodelemes (defined later) as subsets of the generic term yodelling. This seems especially sensible in light of the 'stylised yodel' mentioned above: yodelling while singing words. The occurrences of yodelling differ only in their elaboration and prolongation.

The interplay between vocal registers that characterises yodelling is effected by a sudden and surprising break at a relatively large melodic interval, usually at least a fourth, but more commonly a major sixth or an octave.<sup>11</sup> In English language popular music contexts the switching between the registers is normally made with a very noticeable, percussive 'break', rather than with a smooth transition to conceal the change.<sup>12</sup>

Baumann has written that most definitions of yodel presume the following features **13** to be present:

1) singing without text or words, in which the play of timbres and harmonics is emphasized in the succession of individual, nonsensical vocal-consonant connections (such as 'yo-hol-di-o-u-ri-a') which are also 2) connected in a creative way with the technique of continuous change of register between the chest voice and the (supported or non-supported) falsetto (or head) voice. 3) The tones, often performed in relatively large intervallic leaps, are either connected to one another in a legato fashion during the continuous change of register (register break), or are additionally broken up in traditional styles with the use of glottal stops.<sup>13</sup>

For the moment, we can ignore the fact that Baumann in his definition of a yodel states that the connections between the two registers may be performed legato: while this is common in the Swiss yodel styles with which Baumann is primarily concerned, it in fact is less usual in yodelling heard in English language popular music. Beyond that, however, we are presented with slightly problematic terminology. 'Register', for instance, is so commonly used that the fuzziness of the concept is often overlooked: while the term is very frequently encountered in a variety of musical contexts, its denotation varies significantly across various music disciplines and practices. Register will be discussed a little later in this essay.

Defining yodel as the interplay between chest voice and head voice is also difficult **14** for the reason that women singers (of the European classical tradition, at least) typically sing predominantly in the head voice, yet clearly they yodel. This matter is discussed a little later. Even the term 'falsetto' is not without controversy, if only for the connotations of the word. For example, John Steane writes in *The New Grove Dictionary of Opera*:

As a resort for a tenor who cannot produce a full-bodied top note it has long been popularly condemned in Italy, and in other countries the preferred term is normally 'head-voice', though that can mean something different. The terms 'alto' and 'countertenor' also have different status from falsetto, though it may in practice be difficult to determine at exactly what point a proficient falsettist is entitled to take the more dignified title of 'countertenor'.<sup>14</sup>

Another problem with accepted definitions of 'yodel' in popular music is simply the idea of a wordless passage built on nonsense syllables. Clearly such yodels are common and may indeed be what many people likely imagine when they hear the word 'yodel'. But experience shows that many vocal effects in popular music are yodelled, but are not wordless: they are examples of the 'stylised yodels' mentioned above. However, the common conception of the wordless passage with register switching so dominates our understanding of yodelling that it makes us hesitate to recognise the phenomenon in any other manifestation. This is the reason, I suspect, why even a writer such as Nick Tosches, in his book on Emmett Miller, *Where Dead Voices Gather*, seems to demur when describing the sounds Miller makes: 'To be sure, Miller was not the first blackface minstrel to yodel, if that is what we are to call his break-voice falsetto bleat'.<sup>15</sup>

Sound file 1: Emmett Miller, 'Lovesick Blues' (extract)

The phrase, 'if that is what we are to call', points up the insufficiency of our terminology – at least in popular music circles (although as I try to demonstrate, the terminology is confusing in classical circles as well). Other examples tend to corroborate the apparent uneasiness about what to call this ubiquitous vocalisation. With regard to one of his most popular recordings, Slim Whitman has said, 'I heard "Indian Love Call" – Jeanette McDonald, Nelson Eddy – and I just started fooling with it, doing a kind of yodel thing. All they did was "OoooOooo".<sup>16</sup> Is 'kind of yodel thing' the same as 'yodel'? Why should there be a difference?

Music journalist Bryan Chalker has expressed it well:

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Yodelling, in one form or another, has helped shape the course of country music, and, whilst hardly a marketing force to be reckoned with these days, this unique form of vocalising is far from being as dead as a Dodo. One man's country yodel is another's glottal stop and even those artists like Ray Price and the late David Houston, with built-in 'yips' in their voices, can be included within the many variations that go to make up yodelling as a distinct musical vocal trait.<sup>17</sup>

Chalker is exactly right to recognise that all the falsetto-break vocal effects are indeed yodelling 'in one form or another'.

Therefore, in order to propose a simple and useful terminology that covers the many examples of yodel phenomena in popular music, the remainder of this essay will outline the concept of register as it relates to yodelling and then investigate yodelling with reference to the biological mechanisms that create it. The definition and classification that follow will be used for the description of yodelling in this study, but they are adequate for the description of all voice breaking phenomena.

# Register

Register is a concept associated with many aspects of music. Its use in **18** musicography begins in organ building, wherein various sets of pipes activated by the stops and creating a particular tone-quality were termed registers. The use of the term has extended and broadened and now encompasses a range of connected ideas.<sup>18</sup>

Modern usage of the term is somewhat nebulous. However, register generally 19 refers to a particular tone-quality resulting from the characteristics of the region within the overall compass of the instrument or voice. As an instrument or voice progresses upward through its compass from the lowest possible note to the highest, the tone-quality and the strength of the sound vary at particular points. Some instruments, such as the clarinet or grand piano have distinct points of cut-off, as though laid end to end.<sup>19</sup> The voice allows a certain overlapping of the registers; that is, certain pitches can be taken in either the normal (or modal) register or in falsetto (or loft; these terms are defined below). In some instances,

register refers principally to tessitura, such as high, medium or low. Therefore, the idea of register as tessitura can be, and sometimes is, in contrast with the idea of register as tone-quality.

The matter is somewhat more complicated with regard to the voice, partly as a result of the very long tradition of vocal performance and pedagogy associated with classical music training and the discourse and terminology that surround it. In the classical singing tradition, a very detailed approach to the production, resonance, and projection of the voice, coupled with a normative idealised tone toward which singers aspire has generated a particular language reflecting the values and aesthetic standards of their art in general and is somewhat at variance with that used by physiologists, for example.<sup>20</sup>

## Chest voice and head voice

As Johan Sundberg has written, 'The terminology used for the various registers is confusing.'<sup>21</sup> The classical singing tradition recognises a distinction in male singers between chest voice and head voice, which correspond to normal (or modal) phonation and falsetto. When men yodel, the switch is between these two types of voice. Women singers of the European classical singing tradition also recognise chest voice and head voice, but sopranos, generally speaking, do not sing predominantly in what is referred to as 'chest voice', but rather in the head voice. However, while both men and women have a head voice, these registers are apparently not the same thing: for when women yodel, it is not between their 'chest voice' and their 'head voice', but rather between their head voice and 'whistle' register.<sup>22</sup> Thus, head voice seems to mean one thing for men, another for women. In the following audio example, the coloratura harmony yodelling of the De Zurik Sisters makes evident that understanding yodel as the switching between chest voice and head voice is inadequate especially with regard to female singers.<sup>23</sup>

Sound file 2: De Zurik Sisters, 'The Arizona Yodeler' (extract).

Classical singing has canonised certain practices, in particular, concealment of the natural break in the voice and consistency of tone-quality over the entire compass. The 'true art' is determined by the mastery of the approved techniques. Thus results the emphasis upon training and the remarkable sameness of approach in classical singing, which reflects a general tendency in later twentieth-century classical music towards homogeneity of performance styles. This phenomenon is likely the result of recording and the mass media facilitating mutual influences and gradual assimilation.<sup>24</sup>

Attempts to counter classical music's orthodox terminology for the description of **23** vocal registers are sometimes met with resistance and, indeed, hostility, as Michèle Castellengo has told us. When she suggested a more scientific terminology for the description of vocal register, voice teachers were outraged.<sup>25</sup>

Controversies over the whole notion of register indicate that the concept is to a great extent socially determined. Not only that, but they reveal how the differing concepts embody the ideology of those who use them and how important it is for these sub-groups to control the language regarding their techniques. Classical singing traditions have developed over a very long period, and masking the break – smoothing over the rough – is in itself constitutive of their ideology. For example, as Sundberg has written, 'a classic aim of singing pedagogy is to reduce or even eliminate timbral variation between registers; it is generally regarded as optimal that shifts into a different register be accompanied by the smallest possible timbral differences. This means that not only register breaks but also clearly audible register shifts can be eliminated by training'.<sup>26</sup> Training is thus prioritised as the means to an ideological and aesthetic end.

# Physiology

Physiologists and acousticians who study vocal phenomena define register in terms of quantifiable actions within the larynx without regard to the production of a beautiful tone that is the concern of voice teachers. In this distinction we note the difference in terminology resulting from the contradictory interests of those using the concepts. One is concerned with physics, the other with aesthetics, and both, as it were, vie for sovereignty over the term. Since classical music's pedagogical orthodoxy excluded yodelling, then those interested in exploring popular music techniques may prefer to opt for the physiologists' definition.

In order to understand the mechanisms producing the change of register, a brief **25** excursion into the physiology of the larynx is necessary. The larynx, or voice box, consists of several sections of cartilage: thyroid cartilage, arytenoid cartilage, and the cricoid cartilage (Fig. 1). Within these hard sections are contained the vocal folds, which are sometimes called the vocal cords. The actions of the vocal folds are controlled by two sets of muscle groups: the thyroarytenoid (containing the vocalis muscles) and the cricothyroids. The glottis is the space between the vocal folds. Adduction of the glottis refers to the vocal folds' closing together in order to prevent air passing through the larynx. Abduction refers to their separating to allow the passage of air.



#### <u>Fig. 1</u>: Diagrams of the larynx. Source: <http://www.worldzone.net/music/singingvoice/images/larynx.gif>

In an important study, Harry Hollien postulates three registers only, each 26 determined by physiological activity alone, without reference to questions of resonating areas and totally devoid of ideologies associated with fine singing or

aesthetics. These he labels pulse, modal, and loft.<sup>27</sup> Modal corresponds to the normal activity of the vocal folds in conversation and most European and North American styles of (male) singing. Loft is Hollien's designation for falsetto, while pulse refers to the extremely slow vibration of the vocal folds. Pulse register is rarely used in music, but the sort of deep plunge of the voice into this lowest region resulting in audible rattling occurs in, for example, Conway Twitty's 'Lonely Blue Boy' on the line 'Yeah lonely, lonely blue boy is my name'.<sup>28</sup> In that example the connotation is of dejection and defeat. Another of the rare occurrences of pulse register, clearly marked for humour, is Clarence 'Frogman' Henry's 'Ain't Got No Home', recorded in 1956.<sup>29</sup> In this number a contrast is made between modal register, loft register (falsetto), and pulse register. This distinction is clearly marked in the lyric: the second verse states, 'Well, I've got a voice and I love to sing/ I sing like a girl and I sing like a frog'. The falsetto voice thus signifies the girl's voice (third sung verse, sung entirely in loft register) while pulse register).

Sound file 3: Conway Twitty, 'Lonely Blue Boy' (extract).

Sound file 4: Clarence 'Frogman' Henry, 'Ain't Got No Home' (extract).

In a study titled 'Vocal Breaks from the Modal to the Falsetto Register', the actions **27** of the muscles within the larynx are described.

The vocalis muscle is considered to play the main role in determining the register. Through its contraction the vibrating mass of the vocal folds is increased. The result is a complex movement of the vocal folds modulating the phonation air stream, which produces a characteristic colour of the chest register (a part of the modal register). The relaxation of the vocalis muscle in higher voice range positions causes a change in the mode of vibration which is being limited to the margins of the vocal folds only. This is the falsetto register. Both registers are differentiated by their acoustic spectra, so that they can be identified perceptually. Each of the two registers has its own frequency and intensity. These registers overlap partially, so that some frequencies may be produced within both registers with the same intensity. A continuous transition from one register to another is a gentle process requiring a long time training. Trying to do it there usually arises a vocal break in untrained voices. Generally this is manifested by a sudden change in all the basic qualities of a tone, i.e. fundamental frequency, intensity, as well as frequency spectrum.<sup>30</sup>

Note the correlation between the acoustical fact of the break and the ideologicalaesthetic need for training. Because smooth transition has been valorised in the Western classical singing tradition for the last two centuries, only those committed to the training have a chance of acceptance. Smoothness is thus the mark of distinction from the untrained. Here we have in the break a signifier that separates ideologies expressed through voice timbre. This is practically self-evident, since classical singers seem virtually never to draw attention to the break with a sudden snap between registers triggered by a glottal stop in the way many popular singers frequently do.

Several other important studies into the biological mechanisms producing register changes in the voice have contributed to our understanding of these switches and thus of the yodel technique. With the aid of video images, Harvey Fletcher demonstrated that so-called chest voice, the more common term given to the normal mode of vibration in speech and singing – modal in Hollien's terms – is produced by a complete closure of the glottis accompanied by complex movements of the vocal folds.<sup>31</sup> Adduction enriches the harmonic spectrum of the wave form produced in the larynx: the fact that the flap of tissue at the top surface of the vocal fold is free to vibrate adds to the complex of overtones. Falsetto voice or loft mode, on the other hand, results when the glottis vibrates but does not close completely. Fletcher was able to demonstrate in such cases that the vocal folds move as a single unit, resulting in a simpler wave form.

Pitch jumps between the two modes of vibration have been studied by Švec et al. 29 Their study of data derived from an excised human larynx and three living subjects 'revealed that a small and gradual change in tension of the vocal folds can cause an abrupt change of register and pitch'.<sup>32</sup> In the interest of a smooth transition throughout the compass of the voice, classical singers work to mask this 'jump' between the modes of vibration in the larynx. In yodelling, on the other hand, the jump is emphasised.

This process that Hollien, Fletcher, Švec et al. and others have identified – this **30** moment when the vocal register abruptly switches – ought to be the central focus of a definition of yodelling for the purposes of popular music, rather than the various vocal complexes, involving rhythms, other pitches, nonsense syllables and perhaps words – the things that singers do with a yodelling voice.

It may be that this concentration on 'the yodel' results from the greater emphasis **31** the noun form receives in comparison with the verb form. This nominalisation tends to make us conceive of yodelling as though it were a *thing*: a wordless melodic vocalisation with sudden shifts between modal and loft registers, a melisma with falsetto, and so forth. These terms certainly describe a huge number of vocal phenomena in popular music. However, the noun 'yodel' seems to give priority to what the voice *has produced* over what the voice *is doing* in the production. A conception of 'yodel' that is essentially noun-orientated conceals the fact that yodelling is an *action*, a *doing*. Therefore, yodelling may be better served with a verb-orientated definition: something that more generally includes all of the many vocal phenomena deriving from this switch in the voice box that we hear, and not just in popular music. This kind of definition is more useful in that it describes any use of register breaking.

We started out with a very general definition of yodelling as singing in a manner 32 that exploits noticeable breaks between natural and falsetto voice. It is not important how often or how infrequently the voice breaking occurs within a song; what matters is that the break should be recognised as intentional – in other words, not made accidentally for any reason. It has to be assumed that the break in the voice is made for some kind of *expression of emotion or significance*. The point in the overall musical stream at which this break happens is crucial to the passage's affect: it is a point where something *different* happens. This 'difference' distinguishes such a moment from one in which, for example, there is a simple change of pitch, or where a rhythm is intoned at a constant pitch: the difference is a change of vocal register that is particularly arresting, even startling.

The precise moment when the break from modal voice into loft, or vice versa, **33** occurs is the distinguishing feature of the yodel. In fact, it is the *only* distinguishing feature. This break in register is the sonic event within the flow of the musical line that startles and delights the ear. I call this 'yodel moment' in the musical flow a *yodeleme*, a coinage analogous to similar concepts such as phoneme and museme and intended to indicate a primary unit of meaning. This key moment in the musical flow when the register abruptly shifts can justifiably be termed a yodeleme for two reasons. First, it is irreducible: no component of the yodeleme can be removed without its identity as 'yodel' being taken from it. This is because, without a switch in register, the *melos* is either simply falsetto or simply modal: there is no change. The second reason is that all yodels, no matter how they are described or defined, contain at least one yodeleme. The yodeleme, to reiterate, is the essential distinguishing feature.

In fact, what all these various forms of vocalisation known as yodel have in **34** common – the *only* thing some of them have in common – is the presence of the yodeleme. Whether appearing in a working cattle call, or in Alpine valley vocal play, or at an emotional point in a popular song, the presence of the yodeleme is the factor that determines whether the passage is understood as a yodel. The yodeleme connects all the various forms of yodelling, from the Swiss herdsmen to the Tennessee rockabillies. While the meaning attached to the yodeleme no doubt varies with the cultures and even between subsets of more pluralistic societies, not to mention all levels of idiosyncratic reception, the yodeleme, nevertheless, is primary. It exists in two forms, ascending or descending; however in popular music contexts yodelling with a descending initial interval is relatively rare.

The yodeleme can be understood as a sonic event occupying three dimensions: it represents changes in musical information along three axes: melody, in that a pitch change always occurs; rhythm, in that the pitch change brings about a musical articulation; timbre, in that the articulation is accompanied by a switch between two 'voices' or registers. It is thus a melodic unit with the added, less usual, dimension of timbral change, which seems to emphasise or to sharpen the rhythm.

## Yodel species

If the yodeleme is accepted as the primary determinant of any yodelled passage, **36** then the various yodel types occurring in English language popular music can be classified according to species, of which there are three.

The *first species* comprises all wordless – that is, based upon nonsense syllables **37** – yodeleme strands alternating between modal and loft voice and usually unfolding over changes in the harmony. This species is that described by Baumann in his definition, cited earlier, and it is very likely what most people normally think of when they imagine yodelling. The following example from Jimmie Rodgers's 'Dear Old Sunny South by the Sea' illustrates this species (Fig. 2).<sup>33</sup>



Fig 2: Jimmie Rodgers, 'Dear Old Sunny South by the Sea', 1928, yodel refrain.

First species yodels typically begin with a quasi-anacrusis in normal mode phonation which ends with the appearance of the first yodeleme. In this example, the initial three notes in stepwise motion act as the quasi-anacrusis for the first leap into loft at the interval of a major sixth. The remainder of the passage consists of a sequence of similar rising and falling yodelemes whose shape outlines the harmonic structure of the phrase.

Sound file 5: Jimmie Rodgers, 'Dear Old Sunny South by the Sea' (extract).

Another fine example of first species yodelling is the yodel refrain from Slim **38** Whitman's 1949 recording of 'I'm Casting My Lasso Towards the Sky' (Fig. 3).<sup>34</sup> The pick up measure again acts as a quasi-anacrusis, and like the Rodgers example, ends with a leap of a major sixth.



Fig\_3: Slim Whitman, 'I'm Casting My Lasso Towards The Sky', 1949, opening yodel.

Sound file 6: Slim Whitman, 'I'm Casting My Lasso Towards the Sky' (extract).

While first species yodelling was common in so-called hillbilly and cowboy music of the 1930s and 1940s, it is by no means restricted to those genres or that era. This type of vocalisation is also occasionally performed by contemporary singers in other genres. James Blunt, for example, clearly yodels in this way in the coda of his song 'Out of My Mind' on the live session released on the DVD *Chasing Time: the Bedlam Sessions*.<sup>35</sup>

The second species involves breaking register while singing a word. Thus, second 39 species corresponds to the 'stylised yodels' defined by Alfred Tobler, mentioned earlier in this essay in the quotation from Baumann. In popular music contexts these are often isolated yodelemes. That is, they are single occurrences of a break into falsetto voice, although they may occasionally occur in pairs or other patterns. The break into falsetto occurs in the middle of singing a syllable, hence splitting the word. I refer to this as *word-breaking*, another coinage employed in this study. The rhythmic pattern of second species yodels is typically short-long, implying that the first part of the vowel (in modal voice) is short and the falsetto portion is longer. Frequently, however, the break on a single syllable of a word is extended through the agglutination of further yodelemes to produce a strand. Examples of second species yodels abound in popular music. For example, the 'vocal bleats' of Emmett Miller, as Tosches describes them (see earlier), are all second species yodels. The following example is from Kenny Roberts's 'Broken Teen Age Heart' (Fig. 4).<sup>36</sup> Note that there are two yodelemes, one rising and one falling, resulting in the breaking of the word 'easy'.



Fig. 4: Kenny Roberts, 'Broken Teen Age Heart', 1956, opening vocal line.

Sound file 7: Kenny Roberts, 'Broken Teen Age Heart' (extract).

Second species yodelling is not only extremely common in contemporary popular **40** music; it is also one of the oldest vocal tricks in popular music. It was apparently a favoured device of J. K. Emmet, singer, composer, and actor, who did so much to popularise yodelling in America in the latter part of the nineteenth century. The evidence for this assertion is the fact that the recordings of his famous 'Lullaby' from the musical *Fritz, Our Cousin German*, which were made around the turn of the century, feature this device. The passage in question is as follows (Fig. 5).



Fig. 5: Emmet's 'Lullaby', Boston: W. A. Evans, 1883.

On the surface this excerpt from the sheet music does not appear to be a yodel at all. However, the singers who recorded the 'Lullaby' from *Fritz* during the era of acoustic recording<sup>37</sup> break their voices on the third beat of the second bar and on the first and third beats of the third bar; and again on the third beat of the fourth and the first of the fifth bar: that is, each time the word 'baby' is sung, the first syllable is broken into two by a yodeleme forming intervals of a fifth, a sixth, and an octave. One might safely assume that this mode of performance had been established by Emmet himself since his imitators employed it.

Yet other songs from the era feature second species yodelling as well. 'Roll On, 41 Silver Moon', for example, published in 1848 by Firth, Pond & Co. of New York, is another song that must have been very popular with the singers and audiences, judging by the fact that it was published in several forms, sometimes consisting of the words alone. The success of this song may have helped to popularise wordbreaking in other contexts. The cover of the sheet music to 'Roll On, Silver Moon' states that the song's melody is by Sloman and the lyric by Barker and that it was performed by the Barker Family, a singing family in the Hutchinson tradition, ultimately inspired by the Swiss Rainer Family who popularised yodelling in America in the 1840s. However, as in the case of Emmet's 'Lullaby', there is no indication of yodelling in the printed version of the music. Yet the yodelemes employed in the song's refrain are clearly audible in the phonograph recordings of the singers who made this song a speciality: both George P. Watson and May MacDonald recorded it, as did Frank Kamplain, who called it 'Silver Moon', and its famous refrain appears as a kind of synecdoche in Watson's 'Alpine Specialty', again yodelled.<sup>38</sup> The song was revived as late as the 1950s in a wonderful honkytonk sock-rhythm version by Slim Whitman.<sup>39</sup> So clearly, the device of breaking the words of songs has a long pedigree in English language popular music.

Sound file 8: George P. Watson, 'Roll On, Silver Moon' (extract).

Sound file 9: Slim Whitman, 'Roll On, Silvery Moon' (extract).

Second species yodelling subsumes the type of word-breaking known as 'black **42** falsetto', a term used by David Evan and Tony Russell, among others, in relation to some of Jimmie Rodgers's falsetto effects. 'Black falsetto' is described by Tony Russell in this way:

The voice was raised an octave, generally in the last syllable of a word, often at the end of a line; the effect was rather of a whoop or howl than of the seesawing about the voice's breaking point which makes a yodel. It is difficult to tell what relationship there was between the two devices. David Evans has suggested, very reasonably, that the blue yodel synthesised Swiss (yodelling) and African (falsetto) traditions; the falsetto 'leap' was established among Blacks since the days of the field holler . . . and Rodgers, hearing it, thought it analogous to the yodel and inserted both into his blues.<sup>40</sup>

This is all well and good, and in the case of a blues song the rising octave decorating certain words seems indeed to be modelled directly on black practices. But, as is obvious, Rodgers's material was not only influenced by black traditions.

In a sense, a distinction can be drawn between two types of second species 43 yodelling found in Rodgers: the black falsetto as described by Russell and wordbreaking in the tradition of the 'Lullaby' and 'Roll On, Silver Moon'. If we recognise 'black falsetto' in Russell's definition, then the octave leaps at the ends of words in blues songs may be taken as members of that set. They occur at the end of the line of a blues stanza. However, the other examples of word breaking in many of Rodgers's other songs are more in the tradition of yodel decoration such as we have seen in the nineteenth century classics just mentioned. His 'Daddy and Home', for example, recorded in 1928, illustrates this difference. It is the overall mood and genre context that differentiates these: that is, if it is the last word of the line in a blues stanza, as in so many of the Blue Yodels, or if the yodeleme is medial and in a song related more to the sentimental ballad tradition. To ignore the latter and to focus upon the former prioritises the black influences and tends to minimise other sources which were equally significant in shaping Rodgers's music. In any event, the differences that writers impose upon the technique are based more upon social factors, that is historical and genre relationships, than upon any physiological distinction. Numerous examples exist where it is difficult to assign a particular vocal trick to one particular line of influence, and it is at those points where distinctions such as 'black falsetto', 'Swiss yodel', 'Hawaiian falsetto', 'gospel ecstatics' and so on break down. Second species, it seems to me, handily describes all these.

Sound file 10: Jimmie Rodgers, 'Daddy and Home' (extract).

Second species yodels often correspond with plaintive or dejected moods. This is 44 clearly the case in 'Roll On, Silver Moon' which laments the death of a lover. Classic examples of such moods associated with second species in later generations include Tommy Johnson's 'Cool Drink of Water Blues' and 'Canned Heat Blues' from the blues genre and Hank Williams's 'Ramblin' Man' from the country genre.<sup>41</sup> Kenny Roberts's 'Broken Teen Age Heart' also fits this category, as do later examples such as the Velvet Underground's 'Jesus' and LeAnn Rimes's 'Blue'. When not dejection, sadness, or wistfulness, the technique sometimes suggests frailty or loss of control, such as in Chris Isaaks's 'Wicked Game' or Gabrielle's 'Out of Reach'. In such instances the word-breaking can be taken as a sonic analogue for the breaking heart or for a fall. Indeed, in the Velvet Underground's 'Jesus', it is the word 'falling' that is broken: 'Help me in my weakness 'cause I'm falling out of grace'. The singer Dido can be mentioned as well as one who frequently exploits the plaintive effect of this yodel category. Because it often occurs in singers presenting a sensitive nature (for example, Joni Mitchell and James Blunt in addition to those mentioned here), we tend to hear this break as indicative of the fragile personality near the breaking point.<sup>42</sup>

Sound file 11: Tommy Johnson, 'Cool Drink of Water Blues' (extract).

Sound file 12: Hank Williams, 'Ramblin' Man' (extract).

Sound file 13: LeAnn Rimes, 'Blue' (extract).

Sound file 14: Velvet Underground, 'Jesus' (extract).

However, the mood associated with second species is by no means always forlorn. In the same year that Tommy Johnson recorded 'Cool Drink of Water Blues' – 1928 – Kalama's Quartet recorded the exquisite and serene 'Inikiniki Malie' (Gentle Pinches of the Wind), featuring Mike Hanapi's second species yodelling in the Hawaiian manner.<sup>43</sup> Entirely different again is David Bowie's yodelling on a live version of 'Queen Bitch' recorded in 1976 which appears on *Rarest One Bowie*. And frequently this device suggests ecstatic moments, as for

example when the Beatles sing 'I held her hand in my-een'.<sup>44</sup>

Sound file 15: David Bowie, 'Queen Bitch' (extract).

Thus, while some mood categories tend regularly to be signalled by or associated with such vocal devices, it is only in combination with other musical parameters that the overall mood is achieved. It goes without saying that undue emphasis upon one parameter is not profitable for the analysis of musical connotation.

The *third species* is a yodelled grace note. This generally reverses the order of the second species – a long-held natural tone is followed by (or occasionally preceded by) a very brief yodelled tag. Known as 'feathering' in rockabilly parlance, this is an important vocal device as well as a style indicator for country music. Bart Plantenga notes this type in his book *Yodel-Ay-Ee-Oooo*. He calls it voice-break singing and remarks upon its use 'to add emotional resonance to a song'.<sup>45</sup> The following example is from Kenny Roberts's song 'Hillbilly Style' (Fig. 6).<sup>46</sup> In this example the high falsetto E splitting the second syllable of 'music', pronounced with a decisive 'hick', seems clearly to mark the southern rural values celebrated in the song.





Sound file 16: Kenny Roberts, 'Hillbilly Style' (extract).

As well as being style indicators for country music, third species yodels occur **46** commonly in the romantic cowboy songs of the 1930s. For example, in Wilf Carter's 'There's a Love Knot in my Lariat', the 'oh' in the fifth line of the verse is clearly decorated with such a device, suggesting high spirits and exuberance:

There's a love knot in my lariat, And it's waiting for my blue eyed gal, you bet. While I'm riding range all day, My old lasso seems to say – It twines around an orn'rey stray – oh! There's a love knot in my lariat, And it's waiting for my little prairie pet. When I swing my old lasso, You'll hear my yo-del-a-de hoo (yodelled) There's a love knot in my lariat.<sup>47</sup> Sound file 17: Wilf Carter, 'There's a Love Knot in my Lariat' (extract).

Further examples of third species yodels in a cowboy context can be heard in 47 Patsy Montana's 'Rodeo Sweetheart' of 1938 which features faint falsetto grace notes on the line 'you're the champ of the rodeo'. These decorations in a sense match the reference to being 'all dressed up and a-rearing to go'. As a final example of cowboy-style uses of third species, Tex Ritter can be singled out. His recording of 'A-Ridin' Old Paint' is simply one of many in which his spirited decoration of words with hoots and yelps is achieved with brief flashes of falsetto at the beginnings or ends of syllables.<sup>48</sup>

Sound file 18: Tex Ritter, 'A-Riding Old Paint' (extract).

# Other mood correlations

While the third species crack in the voice may be commonly heard in cowboy 48 songs and is a regular feature of country singing styles, it is by no means restricted to these genres. Accordingly, the moods associated with the device differ substantially. Whereas in cowboy songs the falsetto grace notes seem often to indicate rambunctiousness, in other contexts the mood is very different indeed. Hank Williams's 'Ramblin' Man', already mentioned in connection with second species, exhibits third species as well. On the line 'hurry straight home and pack', 'home' is decorated with a third species yodel. Similarly in the same song when he sings 'you got to understand', the first syllable of 'understand' is also yodelled in this way. As another example, from contemporary performers, 'Type Written Trees', the third track on Havergal's album Lungs for the Race, creates an atmosphere of near-dejection with the third species yodel in the line 'I'm in love with mother, I wish I had eyes for another'.49 The word 'I'm' is intoned with an unusual initial falling vodeleme. The mood is of disturbed fragility, and the technique suggests perhaps even the breaking voice of a pubescent youth. Interestingly, such suggestions are not uncommon in the petulant adolescence connoted in the voice-break effects of punk singing styles, as in, for example, Sid Vicious's singing 'My Way'.<sup>50</sup>

Sound file 19: Havergal, 'Type Written Trees' (extract).

There is another vocal device closely associated with the yodel species outlined 49 here, often in close proximity to them; but due to the possible absence of any register breaking, it cannot really be classed as a yodel. This type is a long wordless melisma entirely in falsetto. Its possible inclusion as a fourth species is problematic, since in many instances it occurs without any breaking of the voice whatsoever; consequently, it is more accurately described simply as a falsetto vocalise. However, it is not uncommon to hear falsetto vocalise passages end with a descending yodeleme into natural voice.

The clearest example of this type occurs in the very popular 'Cattle Call'.<sup>51</sup> This **50** cowboy song was written and recorded by Tex Owens in 1936, but became a big hit later for Eddy Arnold, and has since been covered by many others, including Slim Whitman.<sup>52</sup> In Owens's original, the opening falsetto vocalise makes no use of register breaking, whereas performed by Arnold and Whitman, the long falsetto vocalise eventually drops back into modal voice and has a little yodeleme pattern as a closing. In this way the entire passage can be imagined as a falsetto vocalise with a first species yodel tacked on at the end. Interestingly, this procedure is exactly in line with Baumann's statement that Ranz des vaches, which are entirely in falsetto, may end with a yodel.<sup>53</sup> This is a fascinating connection, as both 'Cattle Call' and Ranz des vaches mean the same thing. In some ways the long falsetto vocalise as performed by Owens also resembles kulning, the most common name for Swedish herding calls, because of its association with herding and its high tessitura. The method of performance is very different, however. Owens's falsetto is very dreamily intoned, whereas kulning is performed with 'a sharp attack and a piercing, almost vibrato-free sound, often very loud'.<sup>54</sup> That all these examples relate to herding is remarkable. Another very similar example is Skip Gorman's 'Night Herding Song'.<sup>55</sup>

Clearly, not every falsetto vocalise has a connection with cows. The wonderful **51** singer Lee Morse, who frequently decorated her singing with third species yodels, often sang a kind of falsetto scat, as in for instance her 'I Love My Baby' of 1925 (and note also in the recording her use of the chestiest chest voice in the lyric that follows).<sup>56</sup> In a similar vein, Cliff Carlisle's 'Shanghai Rooster Yodel' from 1931 combines falsetto scat singing with first species yodelling.<sup>57</sup>

Sound file 20: Lee Morse, 'I Love My Baby' (extract).

From this analysis it becomes clear that the principal difference between the **52** various species is simply prolongation. This fact makes problematic the assertion of Tony Russell quoted above that the 'seesawing' around a note constitutes the yodel. I argue that the presence of the yodeleme is what constitutes the yodel: yodelling is a laryngeal mechanism and whether it occurs singly or in elaborate groupings the difference is merely a matter of quantity and not quality. The three species I have presented adequately describe the various manifestations of the phenomenon in popular music.

Because the definitions and parameters of yodelling and vocal registers are **53** socially determined, it follows that these conceptual categories will have a bearing on the perception of these vocal phenomena. In other words, if one defines yodelling too narrowly, then some vocal devices will not fit the category and are termed 'yodel-like', or 'something like a yodel', or similar. Consider, for example, yodelling performed while humming. This might not in all cases be immediately understood as yodelling, primarily because of its low dynamic level and because it is a variation not specific to Swiss or German styles. It has nothing to do with the distance-calling aspect of yodelling the way it is frequently conceptualised. But in

the context of a Jimmie Rodgers song, for example 'Why Did You Give Me Your Love', it is clearly understood as a yodel.<sup>58</sup> This is because Rodgers, who billed himself as 'America's Blue Yodeller' and who yodelled in virtually every song he recorded, was *expected* to yodel. Therefore, any break in his voice, even the sob-like breaking such as occurs in 'Roll Along, Kentucky Moon', is likely interpreted as a form of his yodelling; in another context, say high in the Alps, such vocalisations at such low amplitudes and without any suggestion of distance calling might not be.<sup>59</sup> So clearly, context and expectation play vital roles in our reception of vocal signs. However, in light of a conception of yodelling as a laryngeal mechanism, then these examples unequivocally are yodelled.

Sound file 21: Jimmie Rodgers, 'Why Did You Give Me Your Love' (extract).

Sound file 22: Jimmie Rodgers, 'Roll Along, Kentucky Moon' (extract).

There are, of course, many falsetto techniques that have a different origin from 54 Swiss yodelling, such as the ecstatic leaps into falsetto so frequently heard in gospel music, or the voice-breaking in Hawaiian music, or even perhaps the voicebreaking in the Cranberries' 'Zombie'.<sup>60</sup> Because yodelling and other falsetto styles have merged in popular music, it is not always possible to say with certainty from which source a particular feature derives. While this may be true, it seems, nevertheless, beside the point. When we encounter obvious examples of parallel evolution, such as that of the Aka or the Mbuti peoples, or of the falsetto leaps in *huapango*, we have no difficulty with the term yodel: musicologists commonly describe such vocalisations as yodelling.<sup>61</sup> However, where styles have merged due to the inevitable mixing that characterises popular music, there is an apparent tendency among performers to try to maintain a distance from 'yodelling', whose associations are felt to be the wrong kind. This is an example of the negative connotations that have dogged yodelling seemingly throughout its history in English language popular music. So people who make breaks between registers in their singing may deny they are yodelling when their larynxes confirm that they are.<sup>62</sup>

# Conclusion: The Rough and the Smooth

To summarise, vocal register is conceptualised in various ways in music; but with regard to yodelling, vocal register is best understood as a result of a particular laryngeal mechanism. Yodel phenomena are thus characterised by the presence of a yodeleme: it is the essential feature of any yodelled passage. Three different musico-expressive types of yodelling occur in the context of popular music, which I have designated species. While in many cases these vocal decorative features seem to have entered the musical language through the influence of singers specialising in yodelling, they have long since become a general feature of popular singing styles.

The yodeleme can be conceived metaphorically as a switch, on or off. Its binary 56

nature gives it especial interest as an item of information, as a moment when change is perceived: it jumps. This phenomenon must be a key to its semiotic potential, particularly considering the difference of effect between smooth connectedness and sudden jerks. Even the consonants of the word 'smooth' indicate this, as do the connotations of its translations: suave, in the style sense, and soave in the taste sense. Smooth carries suggestions of sophistication and poise, easy grace among the social elite: smoothness is a marker relating to diplomatic manoeuvring among the refined classes. It is no wonder that classical techniques, in their valorisation of smoothness, have found no place for such register-breaking effects, since the snap in the voice signals something working against the valued concealment: the gauche break in the voice of the awkward pubescent - one may think of Havergal or Sid Vicious - or the losing of one's cool in the sob such as the expressive sob-like sounds of Jimmie Rodgers or the intimate revelations of the confiding individual – or the uncouth hillbilly boisterously proclaiming his identity. Smooth means never losing the esteemed control, whereas, paradoxically, the control of the superb yodeller only strengthens the impression of unselfconsciousness and lack of inhibition. The unhidden crack in the voice becomes a clear boundary separating the aesthetics of the idiosyncratic 'popular' from the normative 'classical'.

This essay has explored only one small facet of the myriad expressive uses of the singing voice. Even so, the typology it presents is not entirely unproblematic. Indeed, some falsetto shadings of the third species are so subtle and fleeting that the transition between registers is almost entirely masked: these may not be laryngeal voice breaks of the sort described here at all but a far more fluid transition of the overtone content of the voice. Only empirical acoustical tests can determine this. In any event, the fact remains that classifications will always be socially determined, and the names given to these will inevitably carry a connotative force. Undoubtedly, the word yodel itself is so highly charged with negative associations that I would not be surprised if some of the contemporary singers mentioned in this essay were to object to their singing being so described. But that is altogether a different issue.<sup>63</sup> By defining these vocal phenomena according to physiological mechanisms and their basic musical structures, a neutral classification system becomes possible. That is something I hope may benefit musicology.

<sup>&</sup>lt;sup>1</sup> Carl Eckert's 'Swiss Song' (New York: Wm. Hall & Son, 1852) features a lithograph of Henriette Sontag on its cover. Jenny Lind's name appears on the cover sheet of Jacob Ahlström's 'Herde Sång' (New York: Frith, Pond & Co., 1850). Both their names were featured on the cover of Eckert's 'Swiss Song' when it was published by Oliver Ditson in Boston (1880).

<sup>&</sup>lt;sup>3</sup> There are rare exceptions, such as the Fiakermilli in *Arabella* by Richard Strauss and Hugo von Hofmannstal, first performed in 1933. However, despite passages in the score marked, for example, 'stimmt ein freches übermütiges Jodeln an' and 'antwortet zärtlich, ohne Worte, mit einem Jodler', these indications are something modern sopranos appear usually to ignore. See

Arabella, Richard Strauss Edition, Complete Stage Works, Vol. 13, Vienna: Verlag Dr. Richard Strauss GmbhH & Co., 237 and 317.

<sup>4</sup> Owen Jander and Ellen T. Harris, 'Singing, Performing Practice', *The New Grove Encyclopedia of Music and Musicians*, ed. Stanley Sadie, Macmillan Publishers Ltd., 2001, Vol. 23, 428-436: 434.

<sup>5</sup> There is one exceptional case I am aware of in which a classical voice teacher advocates teaching yodelling to help young singers become familiar with their break: 'Yodel up to a Better Register' by Ivan Kortkamp, *Music Educators Journal*, Vol. 55, No. 8. (Apr. 1969), 50-52. But even in this example, the technique is intended merely to facilitate movement into head or loft register with the ultimate aim still the smooth concealment of the break, not yodelling *per se* as is found in popular music.

<sup>6</sup> Roland Barthes, 'The Grain of the Voice', tr. Stephen Heath, *Image Music Text* (London: Fontana Press, 1977), 181.

<sup>7</sup> Ibid.

<sup>8</sup> The use of such devices in an earlier phase of popular music is discussed in my 'Lullabies, Laments, Ragtime Cowboys: Yodelling at the Turn of the Twentieth Century', in *American Music*, forthcoming.

<sup>9</sup> Max Peter Baumann, *Musikfolklore und Musikfolklorismus* (Wintertur: Amadeus, 1976); Heinrich Leuthold, *Der Naturjodel in der Schweiz: Wesen, Entstehung, Charakteristik, Verbreitung: ein Forschungsergebnis über den Naturjodel in der Schweiz* (Altdorf: Robert Fellmann Liederverlag, 1981).

<sup>10</sup> Max Peter Baumann, 'Switzerland, Traditional Music', *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie (Macmillan Publishers Ltd., 2001, Vol. 24), 790.

<sup>11</sup> These at least are the intervals characteristic of European, American, and Hawaiian styles. However, Susanne Fürniss has shown that the Aka yodel with smaller intervals than these. See Suzanne Fürniss, *Die Jodeltechnik der Aka-Pygmäen in Zentralafrika: eine akustisch-phonetische Untersuchung* (Berlin: Reimer, 1992).

<sup>12</sup> 'A vocal break is a sudden transition from one voice register to another'. J. Švec and J. Pešak, 'Vocal Breaks from the Modal to the Falsetto Register', *Folia Phoniatrica et Logopaedica*, Vol. 46, No. 2 (1994, 97-103), 98.

<sup>13</sup> Max Peter Baumann, 'Yodel', *The New Grove Dictionary of Music and Musicians*, ed. Stanley Sadie (Macmillan Publishers Ltd., 2001), Vol. 27, 662.

<sup>14</sup> J. B. Steane, 'Falsetto', *The New Grove Dictionary of Opera*, ed. Stanley Sadie (Macmillan Press, 1992), Vol. 2, 113.

<sup>15</sup> Nick Tosches, *Where Dead Voices Gather* (Boston, New York and London: Little, Brown and Company, 2001), 64. The audio recording which follows is Emmett Miller, 'The Lovesick Blues', *American Yodeling 1911-1946* (CD, Trikont US-0246-2, 1998), track 15.

<sup>16</sup> Kevin Coffey, 'Slim Whitman', book accompanying *Slim Whitman – Rose Marie* (Bear Family BCD 15768 F1, 1996), 11.

<sup>17</sup> Bryan Chalker, 'Yodellin' Gold', *Traditional Music Maker*, No. 51 (February/March, 2002), 20.

<sup>18</sup> Tim Wise, 'Register', *Continuum Encyclopedia of Popular Music of the World* (London and New York: Continuum, 2003), Vol. II, *Performance and Production*, 591-92.

<sup>19</sup> The piano is included here for the reason that a different bridge and a different type of stringing (wound strings fewer in number in the bass, unwound sets of three in the tenor) result in marked variations in string tensions between these registers. The tone regulator's task is to try to minimise the changes in tone-quality that result from these mechanical disparities in order to produce the homogeneity of sound classical music aesthetics seems always to demand. <sup>20</sup> For informative discussions on the history of classical singing techniques, the connection of the

<sup>20</sup> For informative discussions on the history of classical singing techniques, the connection of the registers, the valorisation of an idealised tone, and the centrality of training to the tradition see Richard Wistreich, 'Reconstructing pre-Romantic singing technique' and John Rosselli, 'Grand Opera: Nineteenth-Century Revolution and Twentieth-Century Tradition' in *The Cambridge Companion to Singing*, ed. John Potter, Cambridge University Press, 2000, 178-91 and 96-108, respectively.

21 Johan Sundberg, The Science of the Singing Voice (Dekalb, Illinois: Northern Illinois University Press, 1987), 50.

<sup>22</sup> Ibid.

<sup>23</sup> The De Zurik Sisters, 'The Arizona Yodeler', American Yodeling 1911-1946 (CD, Trikont US-0246-2, 1998), track 3,

<sup>24</sup> For an important investigation into these processes and the gradual loss of individual schools of playing and national styles, see Robert Philip, Performing Music in the Age of Recording (New Haven and London: Yale University Press, 2004), particularly chapters 3 and 6.

<sup>25</sup> Michèle Castellengo, 'The Human Voice and its Registers: the Value of Interdisciplinary Collaboration'. PAS Conference, October 3-5. 2002. http://www.med.rug.nl/pas/Conf contrib/Castellengo/Castellengo bio touch.htm (16/12/2003).She writes, 'We were surprised by the hostility or the misunderstanding of the greater part of those present. In fact, the discussion was distorted because of register terminology. The same problem occurred at the Stockholm SMAC Conference in 1983.'

Sundberg, 51.

<sup>27</sup> Harry Hollien, 'On Vocal Registers', Journal of Phonetics, Vol. 2, (1974), 125-43.

<sup>28</sup> Conway Twitty, 'Lonely Blue Boy', *Lonely Blue Boy* (LP, MGM SE-3818, 1960), track 7.

<sup>29</sup> Clarence 'Frogman' Henry, 'Ain't Got No Home', The Best of Clarence 'Frogman' Henry (CD, Chess 9346, 1994), track 10.

<sup>30</sup> Švec and Pešák, 98.

<sup>31</sup> Harvey Fletcher, Speech, Hearing, and Communication (Princeton, N.J.: D. Van Nostrand Co., 1965).

Jan Švec, Harm K. Schutte, and Donald G. Miller, 'On Pitch Jumps between Chest and Falsetto Registers in Voice: Data from Living and Excised human Larynges', Journal of the Acoustical Society of America, Vol. 106, No. 3, Pt. 1 (September 1999, 1523-29), 1523.

Jimmie Rodgers, 'Dear Old Sunny South by the Sea', Jimmie Rodgers, the Singing Brakeman (6CD, Bear Family BCD 15540 FI, 1992), Disc 1, track 7.

Slim Whitman, 'I'm Casting My Lasso Towards the Sky', Slim Whitman - Rose Marie (6CD. Bear Family BCD 15768 FI, 2000), Disc 1, track 5.

<sup>35</sup> James Blunt, 'Out of My Mind', live at the BBC, *Chasing Time: The Bedlam Sessions* (DVD, Atlantic/Custard 7567-93521-2, 2006). <sup>36</sup> Kenny Roberts, 'Broken Teen Age Heart', *Jumpin' & Yodelin'* (CD, Bear Family BCD 15908)

AH, 1996), track 2.

By acoustic recording I mean the early period of commercial sound recording prior to the invention and adoption of the electric microphone, that is, until around 1925. The singers I refer to are George P. Watson (Columbia A-575, 1909) and Frank Kamplain (Columbia A-2904, n.d.).

<sup>38</sup> Watson, George P. 'Roll On, Silver Moon'. (78 rpm disc, Victor 4836, 1906); May MacDonald, 'Roll On, Silver Moon' (78 rpm disc, Victor Vi16077B, 1908); Frank Kamplain, 'Silver Moon' (78 rpm disc, Columbia A-2378 [78996], n.d.); George P. Watson, 'Alpine Specialty' (78 rpm disc, Victor 20247-B. n.d.).

<sup>39</sup> Slim Whitman, 'Roll On, Silvery Moon', Slim Whitman – Rose Marie, Disc 3, track 9.

<sup>40</sup> Tony Russell, Blacks, Whites, and Blues, in Paul Oliver, Tony Russell, et al., Yonder Comes the Blues (Cambridge University Press, 2001), 143-242: 194. <sup>41</sup> Tommy Johnson, 'Cool Drink of Water Blues' and 'Canned Heat Blues', *Tommy Johnson,* 

Complete Recorded Works in Chronological Order (CD, Document DOCD-5001, 1990), tracks 1 and 5, respectively. Hank Williams, 'Ramblin' Man', Hank Williams, 40 Greatest Hits (2CD, Polydor 821 233-2, 1988), Disc 2, track 6.

<sup>42</sup> The Velvet Underground, 'Jesus', *The Velvet Underground* (LP, Polydor 531 252, 1969), track 6; LeAnn Rimes, 'Blue', Blue (CD, Curb CURCD 028, 1996), track 1; Chris Isaak, 'Wicked Game', Wicked Game (CD, Reprise 7599265132, 1991), track 1; Gabrielle, 'Out of Reach', Bridget Jones's Diary Soundtrack (CD, Mercury 548 795-2, 2001), track 1.

<sup>43</sup> Kalama's Quartet, 'Inikiniki Malie', *Kalama's Quartet, Early Hawaiian Classics, 1927-1932* (CD, Arhoolie Folkloric CD 7028, 1999), track 2.

44 David Bowie, 'Queen Bitch', Rarest One Bowie (CD, Dead Quick Music Inc., GY104, 1995), track 2; The Beatles, 'I Saw Her Standing There', Please Please Me (LP, Parlophone PMC 1202/PCS 3042, 1963), track 1.

<sup>45</sup> Bart Plantenga, *Yodel-Ay-Ee-Oooo* (London and New York: Routledge, 2004), 310.

<sup>46</sup> Kenny Roberts, 'Hillbilly Style', Jumpin' & Yodelin', track 21.

<sup>47</sup> Wilf Carter, 'There's a Love Knot in my Lariat', Cowboy Songs (8CD, Bear Family BCD 15939 HI, 1997), Disc 4, track 18.

<sup>48</sup> Patsy Montana, 'Rodeo Sweetheart', The Best of Patsy Montana (CD, Sony Music Special Products, A 52035, 2001), track 13; Tex Ritter, 'A-Ridin' Old Paint', Blood on the Saddle (4CD, Bear Family BCD 16260 DI, 1999), Disc 1, track 1.

<sup>49</sup> Havergal, 'Type Written Trees', Lungs for the Race (CD, Secretly Canadian SC23, 2001), track

3. <sup>50</sup> The Sex Pistols (Sid Vicious), 'My Way', *Kiss This* (CD, Virgin CDV 2702, 1992), track 17.

<sup>51</sup> Tex Owens, 'Cattle Call', Cattle Call (CD, Bear Family BCD 15 777 AH, 1994), track 1.

<sup>52</sup> Eddy Arnold, 'Cattle Call', Eddy Arnold – Cattle Call (CD, Bear Family BCD 15441 AH, 1994), track 3: Slim Whitman. 'Cattle Call' (Slim Whitman - Rose Marie). Disc 2. track 20.

<sup>53</sup> Baumann, *Musikfolklore*, 127.

<sup>54</sup> Anna Johnson, 'Voice Physiology and Ethnomusicology: Physiological and Acoustical Studies of the Swedish Herding Song', Yearbook of Traditional Music, Vol. 16 (1984), 40-66. <sup>55</sup> Skip Gorman, 'Night Herding Song', *Hills of Home* (2CD, Rounder AN 17/17, 1995), Disc 1,

track 20.

<sup>56</sup> Lee Morse, 'I Love My Baby', *Echoes of a Songbird* (2CD, Jasmine JASCD 646, 2005), Disc 1, track 14.

<sup>57</sup> Cliff Carlisle, 'Shanghai Rooster Yodel', Cliff Carlisle: Blue Yodeler and Steel Guitar Wizard (CD, Arhoolie CD 7039, 1996), track 5.

Jimmie Rodgers, 'Why Did You Give Me Your Love', The Singing Brakeman, Disc 3, track 12.

<sup>59</sup> Jimmie Rodgers, 'Roll Along, Kentucky Moon', *The Singing Brakeman*, Disc 5, track 2.

<sup>60</sup> The Cranberries, 'Zombie', Stars: The Best of 1992-2002 (CD, Island Records 04400632772, 2002), track 3.

<sup>61</sup> For example, in the liner notes to *Mbuti Pygmies of the Ituri Rainforest* (Smithsonian Folkways CD SF 40401, 1992) Colin Turnbull writes, with regard to 'Elephant Hunt Song' (track 3), 'He ends his act with a series of yodels of satisfaction'. Philip Tagg, discussing the Mexican song 'Malagueña salerosa', writes, 'The long held note is frequently sung as a yodel, the singer leaping into falsetto after about one quaver of standard pitch'. (Philip Tagg and Bob Clarida, Ten Little Title Tunes: Toward Musicology of the Mass Media, New York and Montreal: Mass Media Music Scholars' Press, 2003, 350) The figure Tagg describes is a second species vodel according to my classification.

This blurring of the distinction between Swiss practice and other traditional practices is somewhat analogous to the blurring of the tradition of Hawaiian steel guitar techniques with black bottleneck styles. These guitar techniques represent two different lines of development that merged in popular music styles in the American South in the first third of the twentieth century. This is more or less the same time that these vocal techniques of different origins blended together.

<sup>63</sup> I explore the reasons behind the class associations and subsequent ironisation of yodelling over the course of the twentieth century in another paper, forthcoming.

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