Prosody, Performance and Perception: Tempo in LaRena Clark's Ballad-Metre Songs

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Abstract: Almost half the traditional songs in the repertoire of well-known Canadian traditional singer LaRena Clark are in ballad metre. This article develops a framework of musical prosody appropriate to ballad-metre songs in English-language oral tradition and contrasts it with the approach of literary theory. Drawing on concepts and findings in music psychology as well comparative musicology and linguistics, statistical analysis shows how LaRena Clark's ballad-metre songs are moderate in tempo relative both to other world music idioms in general and in particular to Hebridean Gaelic songs.

Tempo has been a little studied aspect of traditional English-language song. In general, published folksong transcriptions have not provided metronome markings, and commentators and performers have seldom ventured beyond describing particular folksong tempos as slow or fast, if at all. Nonetheless, traditional song performance has been far from capricious: a tragic ballad sung at breakneck speed would be as unusual in tradition as a lugubrious comic song.

Recordings of LaRena Clark's singing constitute a valuable starting-point for understanding tempo in traditional songs. LaRena learned through living oral tradition the hundreds of songs she recorded on her own and with Edith Fowke. From hearing the singing of her parents and grandparents (ca. 1910-20), LaRena retained—with seemingly iconic, photographic (or more properly, "phonographic") memory—songs that were or had been current in lumber camps and rural homes of Ontario and the Maritimes, as well as those from minstrel, medicine and vaudeville shows, and early Tin Pan Alley hits. Of these, about a hundred are "traditional." They are of unknown authorship and transmitted exclusively by voice to ear outside commercial publishing venues. LaRena heard such songs directly from the lips of family members who sang solo and unaccompanied.

Transcriptions of almost all LaRena's traditional songs appear in the life-and-works study *A Family Heritage: The Story and Songs of LaRena Clark* (Fowke and Rahn 1994). Among the 93 songs in *A Family Heritage*, the largest group of immediate relevance to questions of tempo consists of 43 in ballad metre.

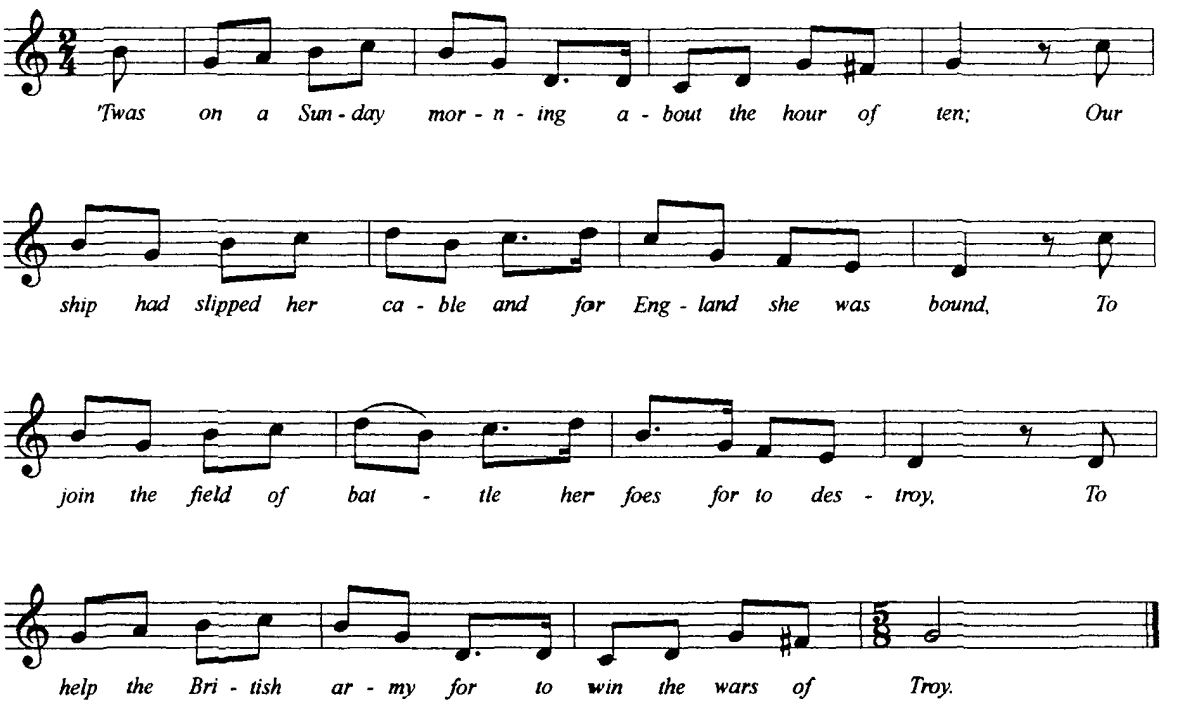
Ballad metre

In ballad-metre songs, lines are grouped in pairs. Within each pair of lines, a line with four stresses is followed by a line with three stresses. For instance, in LaRena's rendering of "The Wars of Troy" (Example1), there are four stressed syllables in the first, third, fifth, and seventh lines, and three stressed syllables in the second, fourth, sixth and eighth. Stressed syllables are indicated here by means of an acute accent (ˊ) and boldface type:

	number of stressed syllables:
'Twas **ón** a **Sún**- day **mór**-n- **íng**	4
A- **bóut** the **hóur** of **tén**;	3

Our **ship** had **slípped** her **cá**- ble **ánd**	4
For **Éng**- land **shé** was **bóund**,	3
To **jóin** the **fíeld** of **bát**- **tlé**	4
Her **fóes** for **tó** des- **tróy**,	3
To **hélp** the **Brí**- tish **ár**- my **fór**	4
To **wín** the **wárs** of **Tróy**.	3

Example 1. The Wars of Troy



In oral recitation, as in such "naturally occurring" forms of English-language speech as conversation and broadcasting, accented syllables tend to be higher in pitch (although English-language speakers often wrongly attribute the relative strength or stress of accented syllables to greater loudness and/or longer duration). A change in pitch level, especially at the end of a sentence, can also be a downward glide (Cruttenden 1997).

A religious counterpart to ballad metre is the common metre of Protestant hymns. Just as ballad metre is the most common prosodic framework for traditional English-language songs, common metre comprises a substantial plurality of English-language hymns. Like ballad-metre songs, common-metre hymns comprise 4+3 stressed syllables in each pair of lines. Because iambic (weak-stróng) feet are constant throughout such hymn tunes, their metre is generally formulated in terms of precise numbers of syllables, e.g., as '8686' for a pair of line-pairs. In this way, any 8686 hymn tune can be sung readily, i.e., with no prosodic or musical adjustment, to any four-line common-metre text. Arguably to render congregational and other group singing as uniform or "groupy" as possible, each verse or stanza of an 8686 hymn has precisely the same number of syllables in each pair of lines, and these syllables are all arranged in weak-strong pairs. Even though Protestant hymns have been to a large extent aurally transmitted, especially

with respect to the tunes, the texts enshrined and canonized in official hymnbooks have tended to prevent change in the words—especially when group singing has been led by choirs, bands, or precentors, the latter "lining out" the text by quickly reciting at the conclusion of each line the words of the next line (Porter 2000; Temperley 1998).

In contrast, English-language folksongs have much more variety in the number of syllables in lines of text. For example, in the fifth line of "The Wars of Troy" (above), the fourth accented syllable, "-tle," is not preceded by an unaccented syllable. In general, the numbers of stressed syllables in the lines of a folksong text are quite rigidly patterned throughout an entire song, rather than precise successions of particular kinds of feet.

Most important, the framework for stressed syllables is musical performance rather than prescriptive rules for poetry written in order to be read, recited or sung by a group in a single unvarying, "authoritative" version. Accordingly, syllables that would not ordinarily be accented in a recitation or speech are sometimes accented within a musical performance: for instance, "and" and "for" at the end of the third and seventh lines of "The Wars of Troy." Moreover, such a voiced consonant as the first *n* of "morning" might be sung as a syllable in its own right (e.g., mor-n-ing in the first line of "The Wars of Troy"), though this would not usually occur in speech or recitation.

In general, then, syllables that would usually be stressed in speech or recitation are fitted into a musical framework, not vice versa. Before and/or after each musically (and in general, verbally) stressed syllable—or what Charles Seeger (1958) might have termed a "stressed sung syllable"—zero, one or two unaccented syllables might be fitted. Although such a "musical foot" might comprise one, two, three, or even four syllables (precisely one of which is musically accented), two or three are most frequent by far.[1]

The notion of a line of (written) text might seem incongruous in a discussion of a predominantly oral/aural tradition; but the unit of a line is relevant because traditional songs almost always feature a word break between lines. Similarly, grammatical units invariably coincide with pairs of lines, so that enjambment does not occur. Nonetheless, between the first and second line of a pair, such an overflow of grammar occurs quite often. For example, the enjambment between the seventh and eighth lines of "The Wars of Troy" increases the rhetorical effect of the musical accent on "for." While the words of these lines would be grammatically analyzed as "To help the British army/For to win the wars of Troy," in LaRena's version they are grouped as "To help the British army for/To win the wars of Troy."

Finally, pairs of lines also provide a framework for rhymes. Although rhymes usually involve the last syllables of a consecutive pair of lines—producing in this way a rhyming couplet—this pattern is not constant or universal. For example, in LaRena's singing of "The Wars of Troy," the sixth and eighth lines rhyme, but the second and fourth do not:

'Twas on a Sunday morning
About the hour of ten;
Our ship had slipped her cable and
For England she was bound,
To join the field of battle

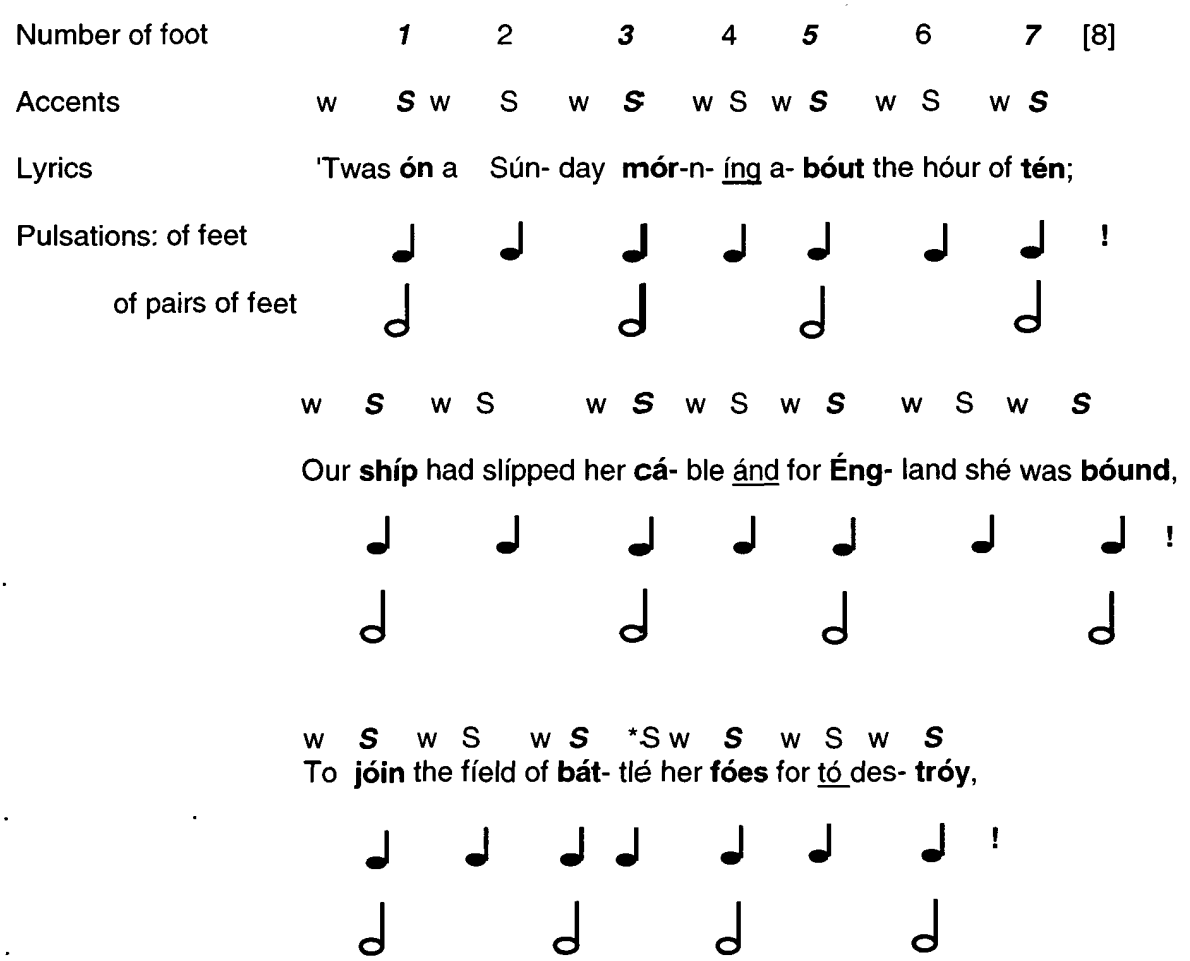
[1] In literary theory, these would be termed, respectively, iambs (and more rarely trochees) on one hand, and on the other, anapests, amphibrachs, and dactyls. See Stillman 1965; Malof 1970.

Her foes for to destroy,
To help the British army for
To win the wars of Troy.

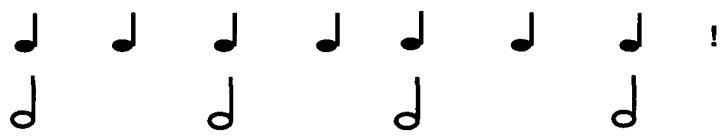
The beat

Of relevance to tempo is the fact that accented syllables coincide with a constant musical pulsation or beat. The term "beat" might seem inappropriate to describe performance in an oral tradition, associated as it is with written music. However, the coincidence of accented syllables with beats is so uniform in traditional English-language song, and the primacy of regularly recurring beats is so great—even "overwriting" as it does the usual stress patterns of speech and recitation—that such a term seems preferable to a neologism (see also Attridge 1982; Tarlinskaja 1993) .

In LaRena's ballad-metre songs, the seven stressed syllables in a pair of lines coincide with a single pulsation. In the transcription of "The Wars of Troy" (Example 1, above) this pulsation corresponds to quarter notes:



w ***S*** w S w ***S*** w S w ***S*** w S w ***S***
To **hélp** the Brí- tish **ár**- my fór to **wín** the wárs of **Tróy**.



Whereas the quarter-note pulsation is interrupted after each group of seven stressed syllables, a slower pulsation in half notes remains constant throughout. This slower half-note pulsation coincides with every other stressed syllable in each pair of lines: specifically, the first, third, fifth, and seventh. Furthermore, the half-note pulsation is not interrupted after each group of seven stressed syllables. Instead, it continues unbroken from one couplet to the next, throughout the entire song.

Thus one can clearly demarcate consecutive levels of ballad-metre as follows:

- beat/stressed syllable/foot
- slower beat/pair of stressed syllables
- pair of slower beats/line/word boundary
- couplet/pair of lines/grammatical boundary/rhyming syllable

Within this framework, and with almost no exceptions, a song's tune is sung to each couplet—or in the case of double-ballad-metre songs, to each pair of couplets. From a musical point of view, the 43 ballad-metre tunes in *A Family Heritage* are divided rather evenly between couplets (15) and pairs of couplets (24). In two of the remaining songs, "The Faggot Cutter" (Example 4) and "My Irish Girl" (Example 5), the verse spans two couplets and the refrain (or chorus) a single couplet. In "I Had But Fifty Cents," the verse comprises two pairs of couplets and the refrain a couplet; and in "The Ploughboy," the verse consists of four couplets, as does the refrain.

Although it is usual in notating traditional and popular songs to indicate a refrain by the rubric "chorus," in the immediate setting in which LaRena first heard traditional songs, refrains seem to have been performed by the solo singer alone. Nonetheless, it is likely that for such a song as "I Had But Fifty Cents," everyone in the social clubs of the 1870s joined in on the refrain (see Randolph 1980). That such refrains sometimes result in a non-symmetrical tune indicates that the relationship between soloist and chorus, even in a rendition in which a single singer embodies both roles, might have been supplementary or even oppositional, instead of complementary or subsidiary.

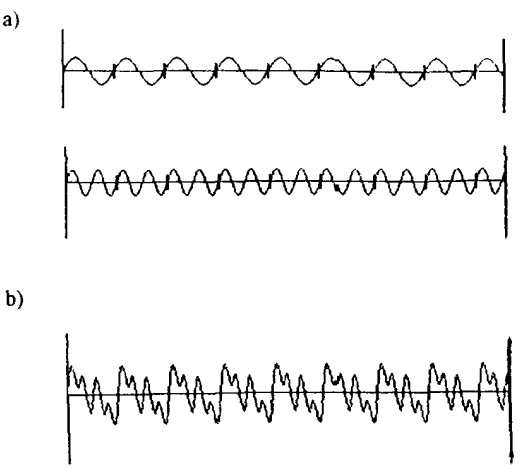
But scanning such lyrics in the framework of literary theory, one is sometimes uncertain where (or more properly, when) one foot ends and the next begins (i.e., whether one or more unaccented syllables are to be included in one foot or the next). However, if one scans folksong lyrics within a framework of musical prosody, there is no such difficulty. Moreover, whether one's approach is literary or musical, from the level of the individual beat/stressed syllable/foot onward, demarcation of levels is generally unambiguous. Indeed, determining when one beat ends and the next begins is not as germane to the idiom as are particular moments within a tune's rhythmic cycling.

Rhythmic cycling: Ballad-metre "groove"

From the level of the individual beat/stressed syllable/foot onward, rhythmic cycling in ballad-metre songs is uniformly binary or duple. In the standard notation of "The Wars of Troy" (Example 1), the cycles within cycles, or simultaneous, superimposed cycles, comprise quarter-note pulsations, half-note pulsations, whole-note pulsations, breve pulsations, etc. Each pulsation that has a longer period (i.e., a longer time interval) between pulsations coincides with (or is "in phase with") all the pulsations that have shorter periods. In this way, as simple as these cycles within cycles might seem, and although they can be easily taken for granted, they comprise a kind of "groove." Whereas the term "groove" has been most closely associated with popular music of the African diaspora (e.g., Brownell 2002: 9, n. 4), the ballad-metre groove described here differs from the grooves of Africa-derived popular music. This difference consists mainly in the kinds of cycles on which each is based, rather than on their fundamentally cyclic structure.

To draw on acoustics for a metaphor, the ballad-metre groove is like a Shepard's tone. In a Shepard's tone, the sine waves of high school physics and trigonometry are combined as follows: all the sine waves are in phase with each other, and their frequencies (or inversely, their periods, i.e., their durations, time intervals, or wave-lengths) form a series of octaves: x, 2x, 4x, 8x, 16x, all in terms of powers of 2: (2^0)x, (2^1)x, (2^2)x, (2^3)x, (2^4)x, etc. (Shepard 1964). In the ballad-metre groove, a couplet of four lines corresponds to the fundamental (x), a single pair of lines concluding with a rhyme syllable to the first overtone (i.e., the second harmonic or partial: 2x), an individual line to an octave above the first overtone (4x), etc. Although the individual component waves all have the same smooth shape of a sine wave (with allowance for their various amplitudes and their periods or wavelengths), when combined in-phase with each other, they yield a characteristic shape that corresponds at any particular moment to the sum of the amplitudes of the component waves (Figure 1).[2]

Figure 1 a) Two component waves of ballad-metre groove (e.g., with frequencies x and 2x); b) single ballad-metre wave comprising three components (e.g., with frequencies x, 2s and 4x).

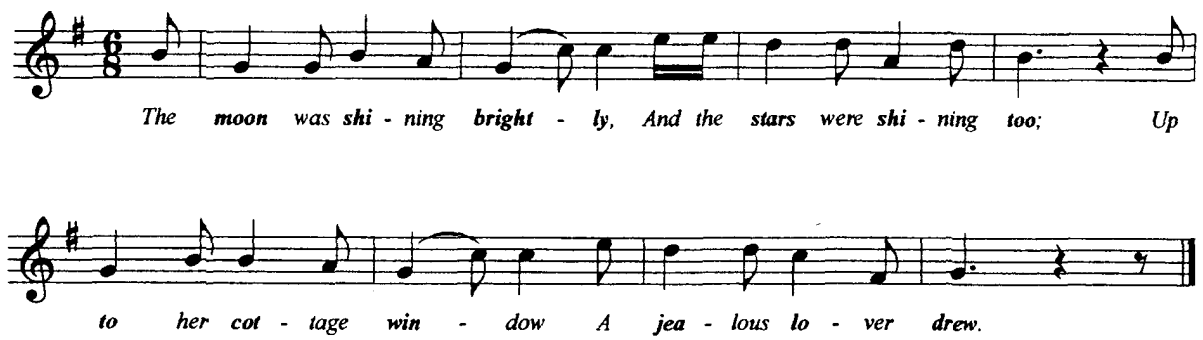


[2] An early, albeit informal, use of the wave metaphor for musical rhythm appears in Zuckerkandl 1956: 168-69.

"Feel" in ballad-metre songs

Just as various Africa-derived grooves might differ in "feel" (e.g., 'swing' as distinguished from 'straight eighths'), so too do various samples of the ballad-metre groove. For example, in LaRena's version of "The Wars of Troy," beat subdivisions are uniformly simple, so that the song is "duplet" or "straight-eighth" in its feel (Example 1). In contrast, her version of "The Jealous Lover" (Example 2) has consistently compound subdivisions.

Example 2. The Jealous Lover



Continuing the acoustical analogy, the eighths within the first six dotted-quarter beats of each pair of lines correspond to a recurring partial a "'perfect twelfth" above the continuous partial of beats and stressed syllables. Similarly, the sixteenth on the word "the" in the phrase "And the" at beginning of the second line corresponds to an ephemeral partial a perfect twentieth: i.e., two octaves and a fifth above the beat partial.

Although standard literary prosody might scan the first and third lines as three feet (two iambs followed by an anapest), within the versification framework of performed song outlined here, both these lines comprise the first four quarter-note beats of the seven realized explicitly in each pair of lines. Moreover, the absence of a tone after each series of seven explicit beats can be construed as a recurrent disappearance of the beat partial. Though this disappearance affects the groove's "shape" (i.e., the shape of its wave), this effect occurs regularly throughout the song and is thus a characteristic feature of ballad-metre groove. It is shared by simple and compound ballad-metre songs, but not by other traditional English-language song grooves and can be described using historically parallel terms from hymnology as "long-" and "short-metre" grooves.

Just as quatrain and octet tunes appear with similar frequency among La Rena's ballad-metre songs, so too do tunes with simple and compound feel: 21 and 20, respectively. To be sure, a single compound beat appears in the simple-feel song "Though Rocks and Hills" (at the end of m. 14 in Example 3, below). Conversely, in "The Ploughboy," a compound-feel song, there is a single simple beat. However, in general, a song's feel remains constant throughout a performance, as do the main waves that comprise its groove. In this regard, the two exceptions to the otherwise uniformly duple measures of LaRena's ballad-metre songs are of interest. Although one of these, "Barbara Allen" (Example 6), has triple measures throughout and the

other, "My Irish Girl" (Example 5) combines triple and duple measures, neither diverges from simple feel.

"Phrasing"

In Euro-American popular song, performers have been distinguished to a great extent by their "phrasing." For example, various song stylists can be characterized by the ways in which they are "ahead of" the beat or "behind" the beat. In popular idioms, singers regularly accompany themselves (e.g., on guitar or keyboard) or are accompanied (e.g., by a backing group or rhythm section). In either case, the accompaniment provides a constantly pulsatile framework in comparison with which a singer's divergences from the beat are clear.

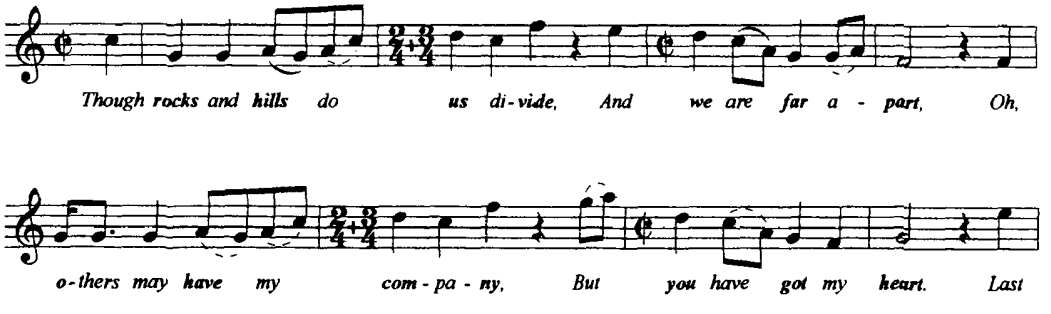
By contrast, LaRena performed traditional songs solo and unaccompanied, as did her parents and grandparents. Nonetheless, clear divergences from the beat occur. Performed in a "detached" manner, traditional songs do not feature such large, gradual changes as the crescendo, diminuendo, ritardando, and accelerando of "art" music; nor do they feature abrupt, vivid changes in loudness or tempo (Seeger 1966). However, because a single singer is the sole performer of all a song's aspects, she or he can "stretch" or "compress" the durations of individual beats, making them longer or shorter, without upsetting the performance as a whole.

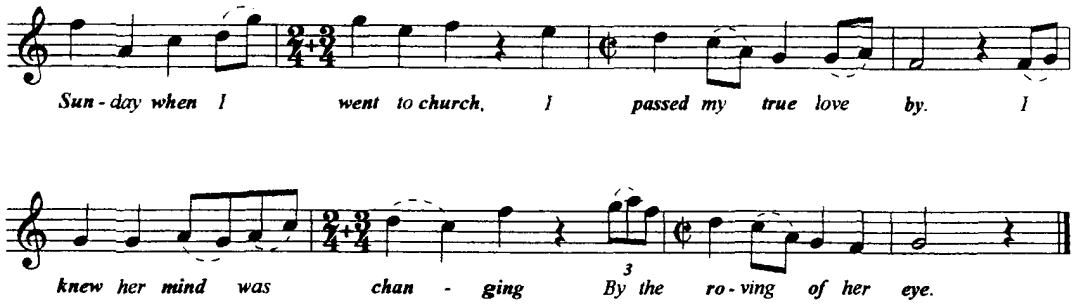
Cecil Sharp pointed out instances of stretching or compression in traditional English-language song almost a century ago (1907); but published transcriptions, both before and since, generally have not conveyed such divergences from otherwise uniform pulsation. Exceptional are the transcriptions in *A Family Heritage* (Fowke and Rahn 1994). From these, one can arrive at the following generalizations about LaRena's singing style—about LaRena as a "song stylist," to use a popular-music term.[1]

First, although stretching and compression are common in LaRena's singing, they only appear in half (22) of her ballad-metre songs. Second, and with only one exception (see below), beats are stretched or compressed very slightly, by no more than a single beat. Third, far more usual in LaRena's ballad-metre songs is stretching, which occurs in nineteen songs, in contrast to the seven songs in which she compresses beats.

Fourth, among all possibilities for altering the beat, LaRena favours stretching beats at the fourth beat of a seven-beat pair of lines. Specifically, in sixteen of the nineteen songs that feature stretching, LaRena stretches beats at the end of the first line in a pair, as in all four pairs of lines in "Though Rocks and Hills" (Example 3: mm. 2, 6, 10, and 14. Stretching is indicated by replacing an ordinary time signature, e.g., 2/2, with a composite time signature: e.g., 2/4 + 3/4).

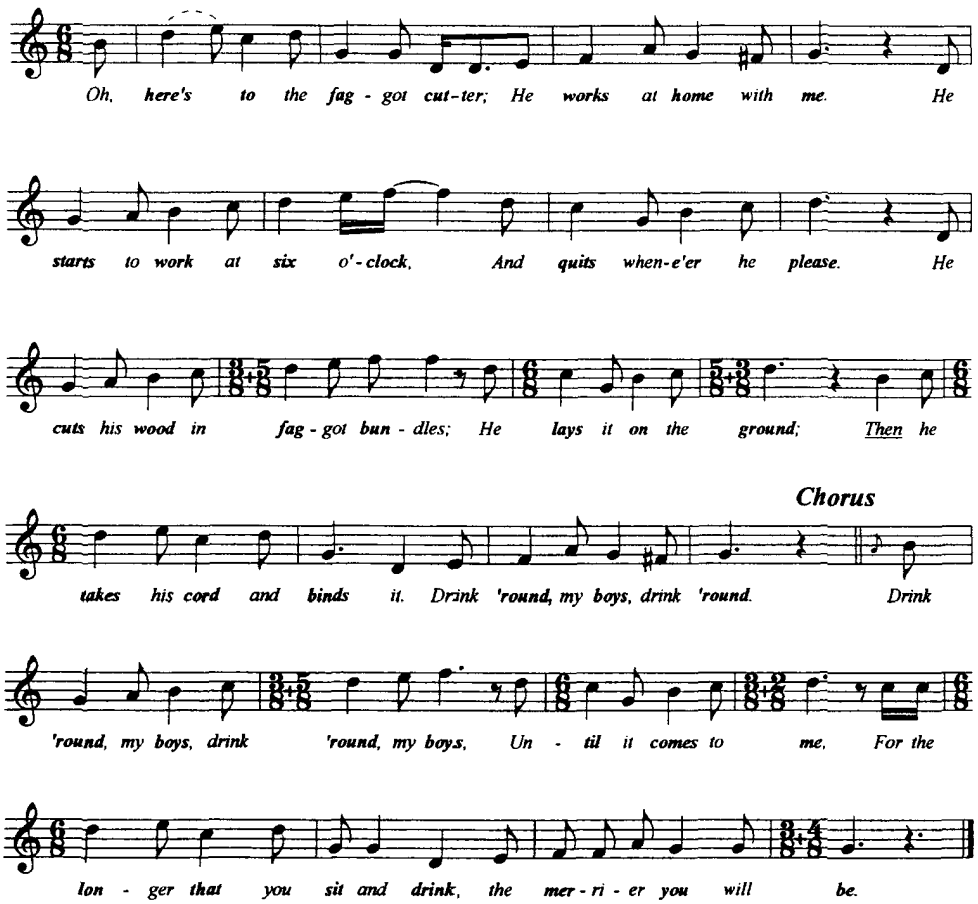
Example 3. Though Rocks and Hills Do Us Divide





Fifth, at the end of the second line in a pair, LaRena's alterations are evenly divided between stretching and compression. In particular, she stretches beats in six songs and compresses beats in seven songs. For instance, in "The Faggot Cutter" (Example 4), LaRena stretches beats at the end of the third and sixth line-pairs (mm. 12 and 24) and compresses a beat at the end of the fifth line-pair (m. 20).

Example 4. The Faggot Cutter



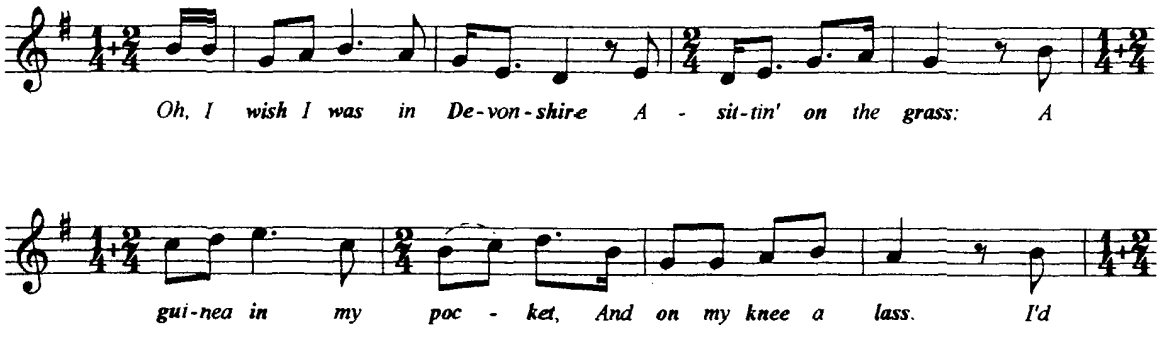
LaRena's phrasing is especially elaborate in "The Faggot Cutter." Not only does she stretch or compress beats at the end of most line-pairs, but she also stretches a beat at the end of the first line in the third and fifth line-pairs (mm. 10 and 18). Further, she stretches the usually unaccented beginning of a prosodic foot at the outset of the fourth line-pair (underlined at m. 12 in Example 4) –a rhythmic effect as rare in her singing as the syncopation at "clock" in the second line-pair (m. 6). Such a syncopation is all the more significant as it necessarily perturbs the even pulsation of beats within a pair of lines. A couple of syncopations also occur in her otherwise consistently duple-simple singing of "There Was Lord in Edinburgh." Here syncopations perturb the second and third of seven beats in different line-pairs, whereas in "The Faggot Cutter," the fourth of seven is perturbed.

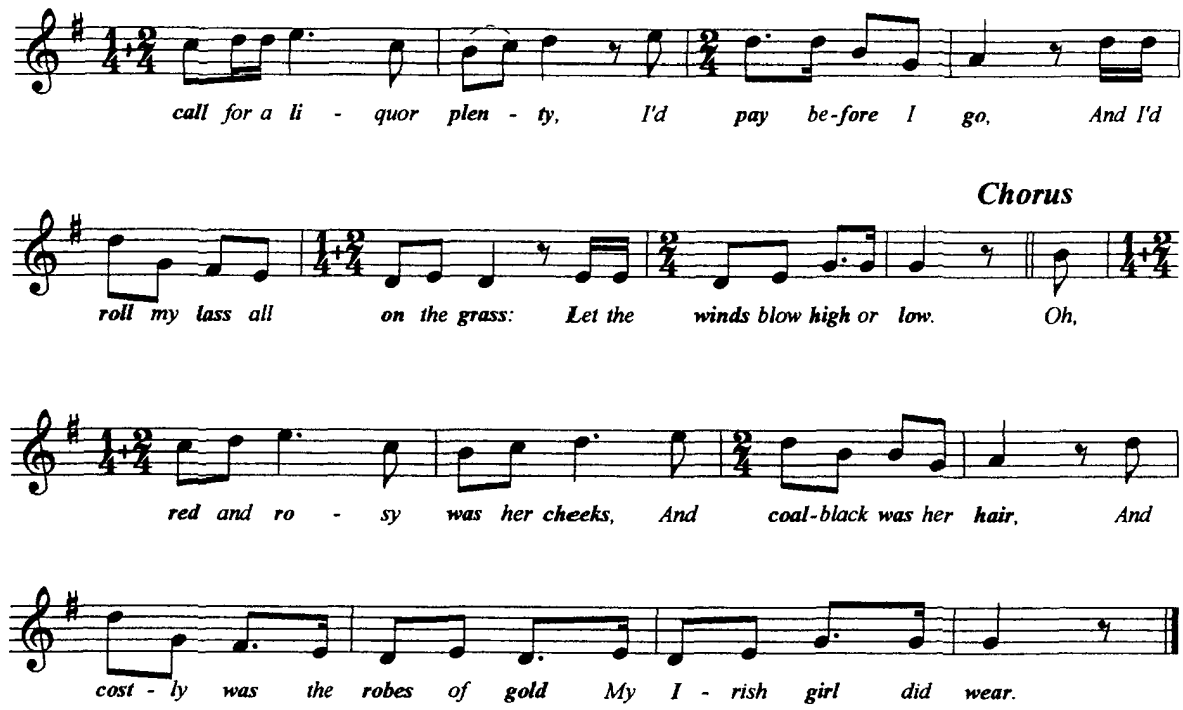
That LaRena tends to compress beats at the end of a pair of lines can be understood as a tendency to begin the next pair of lines early, as can her stretching of beats at the beginning of a prosodic unit. Both practices can be understood as adding urgency to the beginning of segments within the overall ballad-metre groove. Studies of so-called "expressive timing" among "art music" performers (e.g., Todd 1985; Palmer 1989) show that they tend not only to begin segments early but also to stretch values at the end of segments, as does LaRena, especially at the end of the first line of a pair. Despite this similarity in phrasing between "classical" musicians and LaRena, an important difference is in the amount of time by which they stretch and compress beats. Classical performers stretch or compress by amounts quite close to the so-called "just-noticeable difference" for time intervals (i.e., ca. 10 to 20 milliseconds or one hundredth to one fiftieth of a second). But LaRena's stretching and compression are on a much larger scale and quite audible, involving amounts of 150 milliseconds or more (i.e., about ten times as large or even much greater).

"Phrasing" or "feel"?

As rare as LaRena's syncopation and stretching of beats at the beginning of prosodic units is her stretching of beats at the end of the first half of a line. In "My Irish Girl" (Example 5), LaRena stretches the end of the first half of the first, third, fifth and ninth lines (mm. 1, 5, 9 and 17)—as well as the end of (the second half of) the first, fifth, seventh and ninth lines (mm. 2, 10, 14 and 18). Since each of these stretched beats is stretched by an entire beat, the musical metre seems to shift between duple and triple (notated in Example 5 by means of the composite time signature 1/4 + 2/4 to show that the second of the two beats in 2/4 is considered to be stretched, rather than the first).

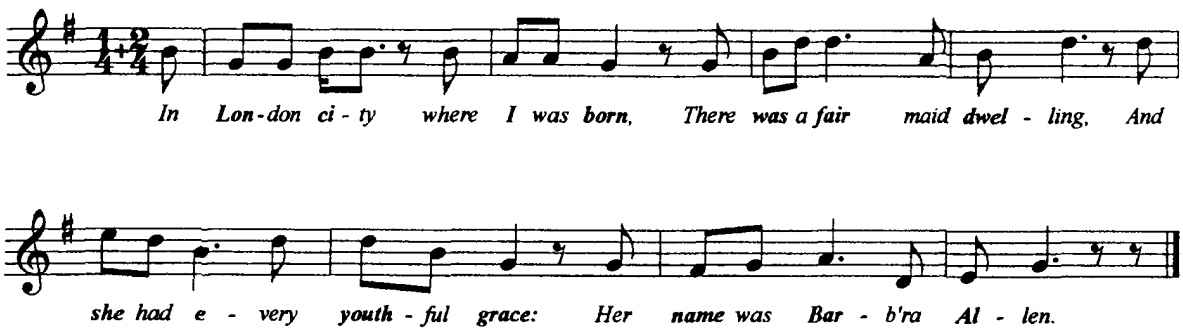
Example 5. My Irish Girl





In LaRena's singing of "My Irish Girl" duple metre (2/4) predominates over triple (3/4=1/4 + 2/4), even though her performance clearly begins in triple. By contrast, her rendition of "Barbara Allen" is uniformly triple throughout (Example 6). As an example without duple beat-pairs, LaRena's rendering of "Barbara Allen" can also be considered a kind of groove in its own right. Though "Barbara Allen" is the only ballad-metre song she sings in this way, triple metre predominates among her long-metre songs.

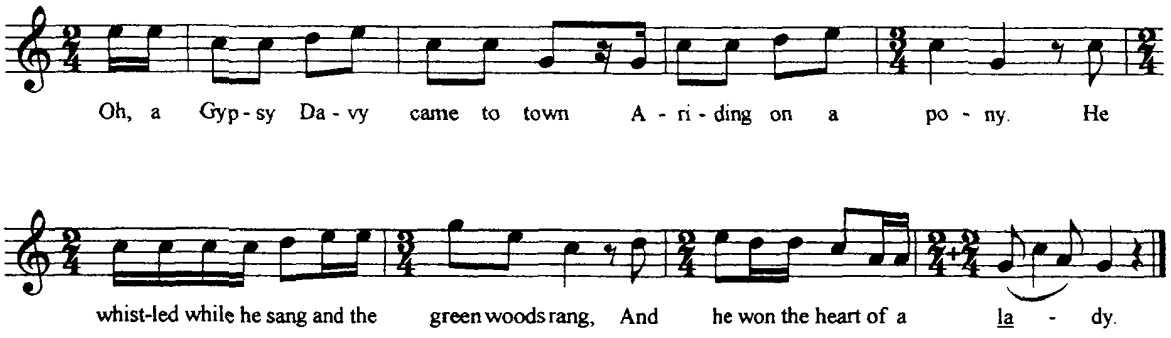
Example 6. Barbara Allen



Musical prosody: Tones per syllable

Like many other traditional singers, LaRena's singing style is almost exclusively syllabic. That is, almost without exception LaRena sings each syllable to a single pitch. Sometimes she sings a syllable to two pitches (as in m. 10 of "The Wars of Troy," Example 1; mm. 2 and 6 of "The Jealous Lover," Example 2; "The Faggot Cutter," Example 4, m. 1, and the grace note in m. 12; mm. 6 and 10 of "My Irish Girl," Example 5). But in only one of the ballad-metre songs, "The Gypsy Davy" (Example 7) she sings three pitches to a single syllable (underlined in the phrase "And he won the heart of a la-dy." This phrase is further exceptional in that it is the only instance where LaRena stretches two consecutive beats, for both "la"- and "-dy" are stretched from one to two beats as indicated by the change to a 2/4+2/4 time signature). In any event, this case of three tones on a single syllable is extremely rare, and in none of her other songs does she sing more than three pitches to a syllable.

Example 7. The Gypsy Davy



Several instances of two-pitch syllables involve musical passages that are otherwise sung syllabically. Compare, for example, mm. 10 vs 6 of "The Wars of Troy"; mm. 1 vs 13 and 21 of "The Faggot Cutter"; and mm. 6 and 10 vs 18 of "My Irish Girl." Often such alternative syllabification suggests that the first line of a pair might conclude with (to borrow terms from French prosody) feminine or masculine word (as in "The Wars of Troy" and "My Irish Girl"). Conversely, like LaRena's pronunciation of "mor-n-ing" in "The Wars of Troy," a single syllable might be sung as two, resulting in a syllabic performance.

In summary, LaRena's singing is almost entirely syllabic, exceptions often being slight extensions of this norm rather than clear disjunctions from it. In this respect, the fact that 17 (i.e., 29%) of the 57 syllables in "Though Rocks and Hills" are sung to two pitches rather than one is extremely unusual in her singing (although one of these, on "chan-ging" in m. 14, is merely a "feminine" variant of the previous first-line endings in mm. 2, 6, and 10). By contrast, in the majority of her ballad-metre songs (24 of 43), there is precisely one pitch on each syllable, and on average the number of tones exceeds the number of syllables by only 3 percent. One can thus generally regard the number of tones LaRena sings to be virtually the same as, or only slightly greater than, the number of syllables.[3]

[3] For all the statistics in this study that involve rates or ratios (e.g., tones per syllable), the original figures were converted into logarithms.

Syllables per foot

As outlined above, the number of syllables in a prosodic foot ranges from one to four. Although individual feet within a song might differ considerably in numbers of syllables, and hence to the greatest extent in numbers of tones, the average number of syllables per foot in a song ranges only from about 2 to 3 (more precisely, from 1.9 to 2.9, respectively). These extremes correspond to ideal cases in which the prosodic feet in a song would be solely of 2 syllables (e.g., in literary theory, iambs) or 3 (e.g., anapests or amphibrachs). However, such extreme cases never actually occur.

Among all 43 songs, the number of tones in each foot tends to be 2.2, i.e., much closer to 2 than to 3. In this way, what would be a "rule" in literary renderings of ballad metre, namely, that all feet are iambic, corresponds in traditional song only to a tendency. All the same, this tendency is toward two-syllable iambic feet, rather than three-syllable anapests or amphibrachs. Further, although this tendency is toward feet of 2 rather than 3 syllables, a continuous, unbroken spectrum of possibilities between 1.9 and 2.9 is found in LaRena's ballad-metre songs.

Tempo

How fast or slow are LaRena's performances? In ethnomusicology, music psychology and linguistics, there have been various approaches to tempo. In one approach, tempo is merely the number of tones per minute; in another, the number of beats per minute; in yet another, the number of syllables per second.

Tones per minute

Expressed in tones per minute, LaRena's ballad-metre songs range from 107 to 252 (i.e., from just below 2 to just above 4 per second), and on average 170 (i.e., just below 3 per second). As fast or slow as this average might seem, it is actually quite moderate compared to the number of tones per second in other repertoires. For example, Mieczyslaw Kolinski (1959) found that for African and African diasporic groups in Dahomey and Surinam, the average number of tones per minute, which he termed their "tempo figure," was higher: respectively, 229, the lowest and highest being approximately 150 and 360; and 239, the lowest and highest also being approximately 150 and 360. In contrast, the average numbers of tones per minute in songs of various North American indigenous groups of the Plains, Southwest and Northwest were lower than LaRena's: from 118 to 143, with correspondingly lower ranges between the lowest and highest tempo figures in each group.

Historically and culturally closer to LaRena's are Hebridean Gaelic songs of South Uist. To be sure, the tones per minute for lullabies average 113, and for dance songs 270. However, for walking songs, which, like the majority of LaRena's traditional songs, form part of the pan-European repertoire of ballads, the average is 169, the lowest and highest being approximately 115 and 255. In short, in cross-cultural comparison, LaRena's ballad-metre songs are moderate in their number of tones per minute and are quite close to a historically related repertoire of ballads, which are themselves moderate within their own immediate cultural setting.[4]

[4] Expressed in logarithms, Kolinski's averages would be a little lower.

Syllables per second

Expressed in terms of a variable linguists use to analyze speech, LaRena's ballad-metre songs proceed on average at a rate of 2.7 syllables per second and range from a low of 1.5 to a high of 4.2. These figures are relatively low if compared with averages for "naturally occurring," "normal," conversational speech in a variety of languages: French (5.2, 5.29, 5.7), Italian (6.4), Dutch (6.1), German (5.55, 5.7), and English (3.3 to 5.9) (Dankovicova 1994; Arnfield et al. 1995). To be sure, pauses have been generally excised in arriving at such averages. However, in LaRena's ballad-metre songs, the only relevant pauses for comparisons of this sort occur only at the eighth beat of each line-pair. Accordingly, even if LaRena's figures are adjusted upward by one-seventh (i.e., for an adjusted average of approximately 3.1 and adjusted low and high rates of approximately 1.7 and 4.8), they remain on the low side for English in particular and western European languages in general.

To be sure, the rate at which people speak varies considerably with particular social settings or what linguists term "styles of speech." Within the speech of French, Spanish, Finnish, German and English speakers, storytelling has been found to be uniformly slower than conversation or interviews (Kowal et al. 1983), with no significant differences between storytelling rates in various languages. As well, differences in speaking rate between English and French have been found to be due to style of speech rather than the language spoken (Barik 1977).

Beats per minute

Expressed in beats per minute (i.e., in metronome markings), LaRena's ballad-metre songs range from 46 to 133 (i.e., from less than 1 to more than 2 per second), and on average 85 (Figure 2).[5] As one would expect, there are on average twice as many tones per minute (170) as there are beats per minute. As Figure 3 shows, the number of tones per minute increases as the number of beats per minute increases, the amount of dispersion around the trend line being relatively small (adjusted $R^2 = 0.82$).[6] In other words, for these songs, both beats and tones per minute are strongly associated and one could quite well substitute for the other as a measure of tempo.

Figure 2. Beats per minute in LaRena's ballad-metre songs. Durational value of beat in *A Family Heritage* indicated as follows: q (for quarter), q. (for dotted quarter), and h (for half).

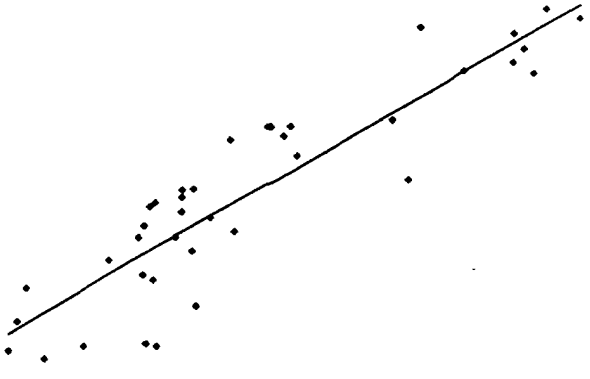
The Dapple Grey	49 q.
The King's Daughter	52 h
Lord Gregory	57 h
The gypsy Davy	93 q
There was a Lord in Edinburgh	78 q
The House Carpenter	46 q
The Gallant Hussar	52 q.

[5] Figure 5 presents numbers of beats per minute in LaRena's ballad-metre songs, from which tones per minute and syllables per second can be derived. Note that "Barbara Allen" and "My Irish Girl" are excluded from Figure 5 because they depart substantially from duple metre.

[6] Such statistical measures as R^2 and standard deviation (below) are explained in elementary statistics textbooks (e.g., Gravetter and Wallnau 2000).

The Rifle Boys	65 h
The Wars of Troy	82 q
The Banks of the Nile	79 q.
Though Rocks and Hills	51 h
Lord Allan's Daughter	87 q.
I'll Remember You, Love	63 q.
the Jealous Lover	62 q.
The Bonny Young Irish Boy	104 q.
The False Young Man	88 q
Adieu Unto Cold Weather	96 q
Young Jimmy Brown	50 h
Bloody Waterloo	101 q.
The Banks of Claudy	94 q
The Foggy Dew	103 q
The Roving Shantyboy	102 q
Green Leaves So Green O	102 q.
The Banks of the Pembina	96 q
Pat and His Old Leather Britches	100 q.
I Had But Fifty Cents	133 q
Come Tiddly Wink Some Day	124 q.
The Burglar Boy	115 h
The Banks of the Newfoundland	91 q
The Faggot Cutter	80 q.
Thyme, 'Tis a Pretty Flower	101 q
Young Charlotte	97 q
The Arkansas Traveller	110 q.
The Ploughboy	131 q.
Bridget from Washago	104 q.
The Farmer's Son and the Shantyboy	96 q.
Hurry Up, Harry	129 q.
The Squire Boys	103 q.
The Raftsmen's Song	94 h
Woes of Two Fishermen	96 h

Figure 3. Number of tones per minute vs. number of beats per minute. Tones per minute range from 107 to 252 (left to right); beats per minute, from 46 to 133 (bottom to top).



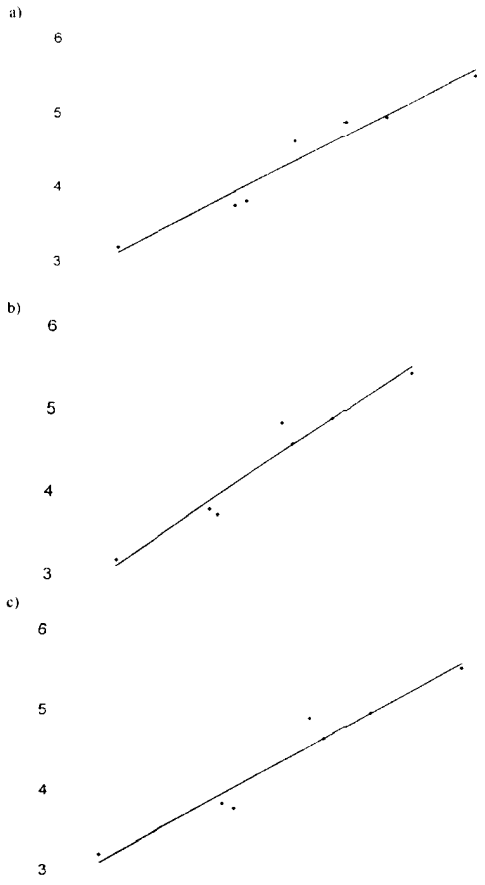
That there tend to be 85 beats per minute is especially interesting from the point of view of research in music cognition. 85 beats per minute (i.e., a beat interval of ca. 700 milliseconds) corresponds to the so-called "indifference interval." Since the nineteenth century, music psychologists have found that various aspects of temporal cognition and performance correspond to rates quite near 85 per minute. In particular, Richard Parncutt (1994) found that when subjects were asked to tap along evenly while hearing a wide variety of rhythms performed at a similarly wide variety of speeds, they tended to tap at a rate close to 85 per minute.

Tempo perception

For LaRena's songs, the rate of 85 per minute has other significance. We can consider 85 beats per minute a moderate tempo for her songs, relatively fast or slow songs being higher or lower than this rate. Yet in this study, the number of beats per minute is directly related to the number of feet per minute, for in general there are eight beats in each pair of lines, which itself comprises seven feet. Accordingly, if people actually respond to the musical prosody of LaRena's songs as outlined here, one would expect them to judge individual songs by her as being relatively slow or fast depending on how slow or fast the musical beats/feet proceed.

Within the framework of a larger study of tempo perception, David Patterson (2002) included seven of LaRena's ballad-metre songs. Subjects were asked to rate each on a scale from 1 (extremely slow) to 7 (extremely fast). As Figure 4.a shows, their responses, on average, corresponded quite closely to the number of beats per minute as determined in the present study. In other words, Patterson's study supports the account of musical prosody described here. To be sure, as Figures 4b and 4c indicate, subjects might instead have been responding to the number of tones per minute or to the number of syllables per minute. However, in the present study, the latter rates are considered to be shaped by the number of beats per second, rather than being independent aspects of tempo (e.g., the 8 beats per line-pair correspond to 7 feet, each of which tends to consist of a little more than 2 syllables, 97% of which tend to be sung to a single pitch). In any event, it is clear that the kinds of tempo distinctions made here correspond quite closely to ways in which people actually respond to LaRena's ballad-metre songs. (See Figure 4)

Figure 4. Average tempo responses (on a 7-point scale from bottom to top) to seven of LaRena's ballad-metre songs vs. a) the number of beats per minute (from 62 to 133); b) the number of tones per minute (112 to 248); and c) the number of syllables per minute (1.7 to 4.1)



Feel and phrasing in tempo perception

Among the seven ballad-metre songs in Patterson's study, only one involves a stretching or compression. As shown in "The Faggot Cutter," beats are stretched and compressed—and there is even a rare instance of syncopation. Did these divergences from LaRena's usual phrasing and unsyncopated rhythms perturb the study subjects' judgment of tempo? Although "The Faggot Cutter" is in these respects a highly exceptional song within this part of Patterson's experiment, its unusual phrasing and rhythm seem not to have "thrown off" the subjects' judgments. The dispersion of their responses to all seven songs, calculated as standard deviations, ranged from of 0.75 to 1.21, with an average of 1.13, whereas the standard deviation for "The Faggot Cutter" is relatively low: 1.06.

Finally, did the difference between simple and compound feel affect the subjects' judgments? Apparently not. With regard to all the variables considered here (beats and tones

per minute, syllables per second), none of the differences found between simple and compound songs was substantial. Similarly, none of the differences between the four compound and three simple ballad-metre songs in Patterson's experiment were substantial.

Conclusion

Special song types: Child ballads and comic songs

At the outset, I asserted that a tragic ballad sung at breakneck speed would be as unusual in tradition as a lugubrious comic song. In the case of LaRena's ballad-metre songs, one can check this claim. Among her ballad-metre songs, seven are Child ballads, and four are comic songs. On average, the tempos of LaRena's Child ballads are much slower than her comic songs: 59 beats per minute vs. 117 beats per minute. (Respectively, their ranges and standard deviations, the latter expressed as ratios, are 46-93 and 100-133, and 1.30 and 1.13). Moreover, these song types are respectively slower and faster than her ballad-metre songs in general. Further, these generalizations hold true even if one groups LaRena's bawdy songs with her comic songs. Her three bawdy songs in ballad metre are very close in tempo: 102 beats per minute for two, 103 for the other. A little faster than her ballad-metre songs in general, the tempos of her bawdy ballad-metre songs are at the slow end of her comic songs.

Individual tunes: Tempo and feel

Traditional songs share with Protestant hymns the practice of using a single tune for several texts and vice versa. Throughout her traditional repertoire, LaRena used only a single melody for each individual text. Conversely, however, for eleven of her ballad-metre texts, she used four tunes. In each case, the tempos of her songs that use a single melody are very close. As well, all the tempos for these melodies are just above her average tempo for ballad-metre songs in general. Further, in each ballad-metre melody that LaRena used for more than one text, the feel is constant: simple or compound. Briefly, in LaRena's ballad-metre songs, a particular melody is closely associated with a single feel and with a narrow range of tempos (Figure 5).

Figure 5. Tempo (i.e., beats per minute) and feel (simple or compound) of four ballad-metre melodies sung to different texts.

Text:	Tempo:	Feel:
The Burglar Boy	115	simple
Young Charlotte	97	simple
The Raftsmen's Song	94	simple
Woes of Two Fishermen	96	simple
The Bonny Young Irish Boy	104	compound
The Faggot Cutter	80	compound
Bridget from Washago	104	compound
The Wars of Troy	86	simple
The Banks of Claudy	94	simple
Bloody Waterloo	101	compound
The Farmer's Son and the Shantyboy	96	compound

Finally, it should be emphasized that not all traditional source singers' musical-prosodic styles have been the same as LaRena's. Obvious contrasts can be heard readily between her delivery and the florid stylings of, for example, Angelo Dornan (as documented in Creighton 1962 and 1971). Nonetheless, even a cursory survey of widely available recordings will show how close LaRena's approach to "putting across" a song is to that of many other Canadian English-language traditional singers. Most important is that the general framework outlined here for LaRena's singing should provide a point of departure for studies that would illuminate aspects of other singers" styles—aspects that might otherwise have remained unarticulated.

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