Measuring a Measure: Absolute Time as a Factor in Meter Classification for Pop/Rock Music

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MIDDLE TENNESSEE STATE UNIVERSITY

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Kennesaw State University

Slides available at: www.midside.com/slides/

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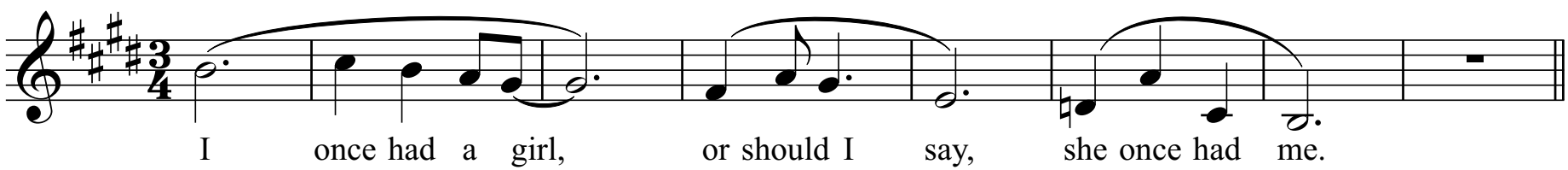
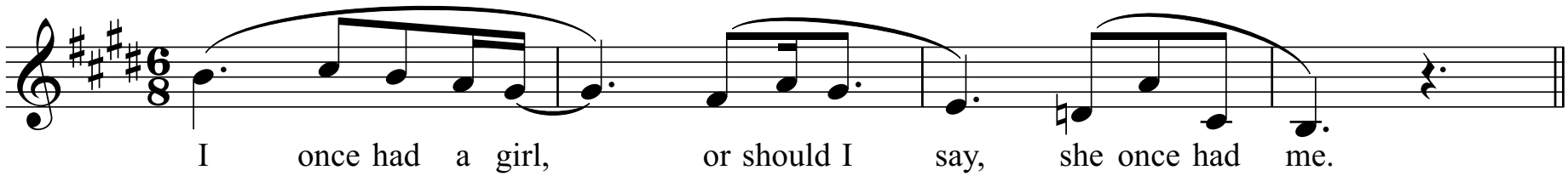
Three possible readings of meter and bar lengths for "Norwegian Wood" (The Beatles, 1965)

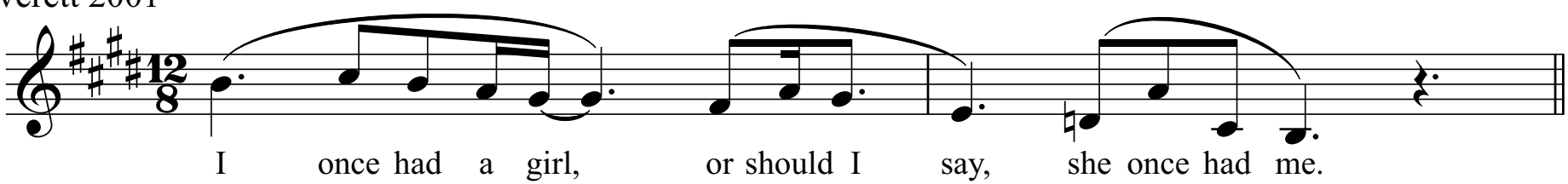
Pollack 1993



Covach 2006



Everett 2001



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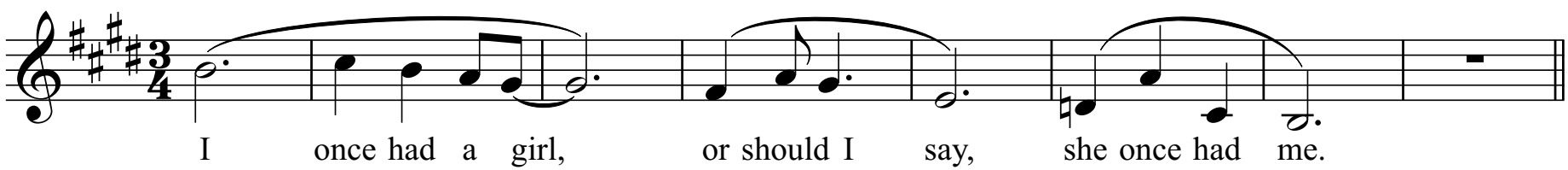

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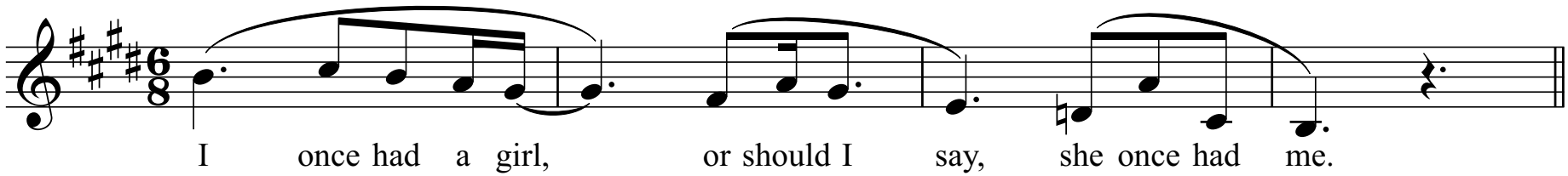

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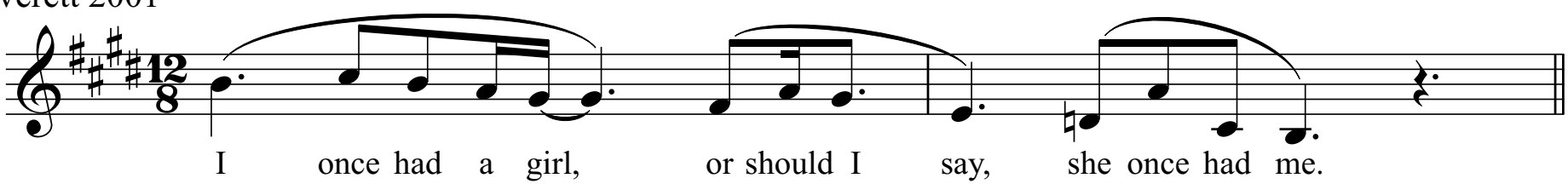
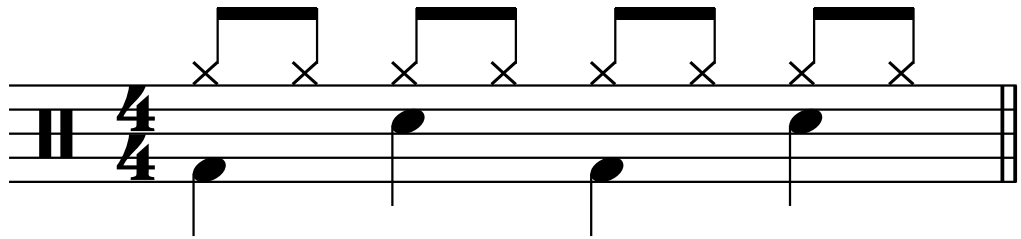


Kick and snare configurations for a “standard rock beat”



(Moore 2001; Stephenson 2002)

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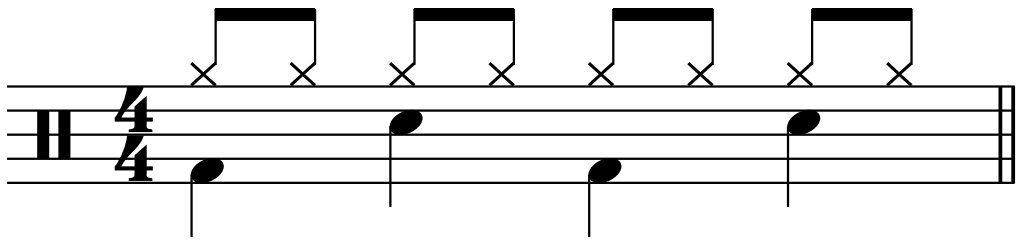

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Some recent research on rhythm & meter in pop/rock music

- Butler 2001
- Pieslak 2007
- Osborn 2010
- Rosenberg 2011
- McCandless 2013
- Osborn 2014
- Biamonte 2014
- Attas 2015

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Standard (recent) music theory scholarship on rhythm & meter

- Lerdahl & Jackendoff 1983
- Lester 1986
- Rothstein 1989
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Recent scholarship on beat (i.e., *tactus*) perception

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Recent scholarship on beat (i.e., *tactus*) perception

Source	***Ideal Tactus***
Lerdahl & Jackendoff 1983	70 BPM

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Recent scholarship on beat (i.e., *tactus*) perception

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Lerdahl & Jackendoff 1983	70 BPM
Fraisse 1982	100 BPM
Parncutt 1994	100 BPM
Semjen et al. 1998	100 BPM

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Average tempos & measure lengths for songs categorized as 4/4

	Covach 2009	**Burgoyne et al. 2011**	**Temperley & deClercq, 2013**
Number of songs in 4/4	61	509	168
(as percent of total songs)	75.3%	93.2%	84.0%
Mean BPM	121.4	119.5	119.6
(standard deviation)	22.2	33.6	34.1
(median BPM)	119.0	117.9	115.5
Mean measure length	1.98 sec	2.01 sec	2.01 sec

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Average tempos & measure lengths for songs categorized as 6/8

	Covach 2009	Burgoyne et al. 2011	Temperley & deClercq, 2013
Number of songs in 6/8	1	5	6
(as percent of total songs)	1.2%	0.9%	3.0%
Mean BPM	50.0	64.0	62.3
(standard deviation)	(n/a)	11.7	9.9
(median BPM)	50.0	63.1	60.3
Mean measure length	2.4 sec	1.88 sec	1.93 sec

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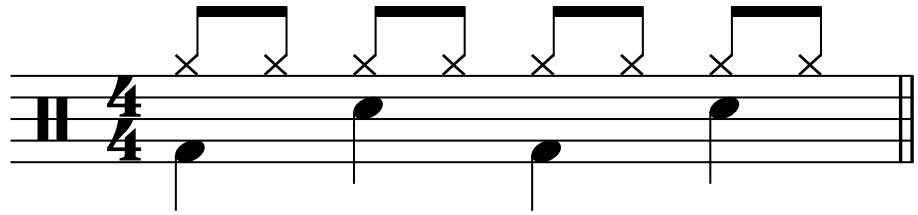
Standard rock beat



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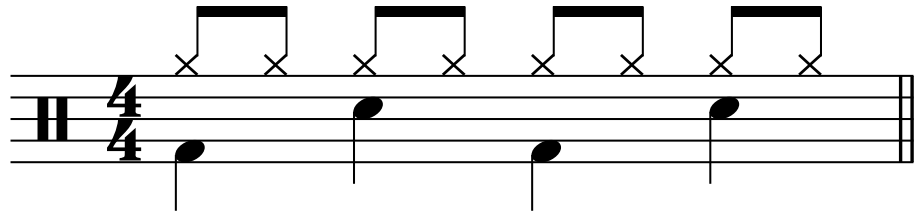
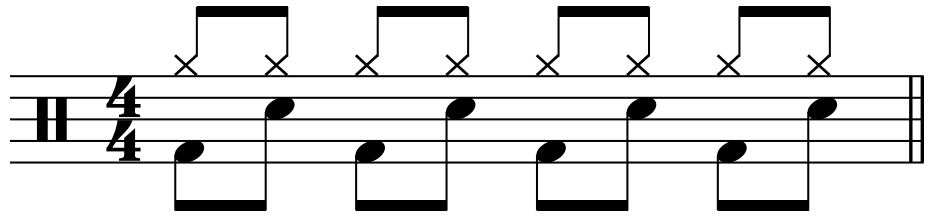


“Double-time” feel



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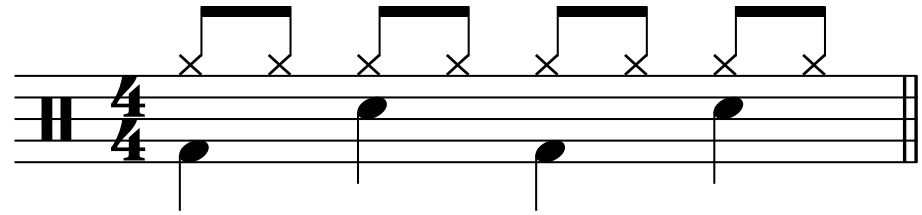

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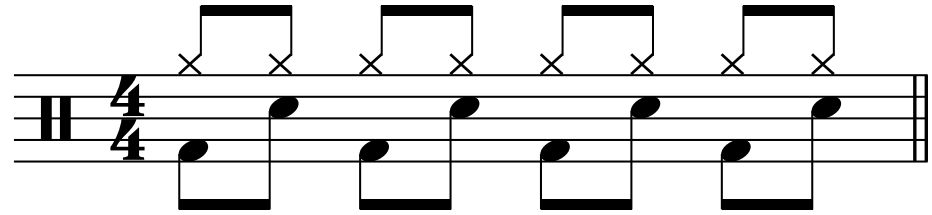
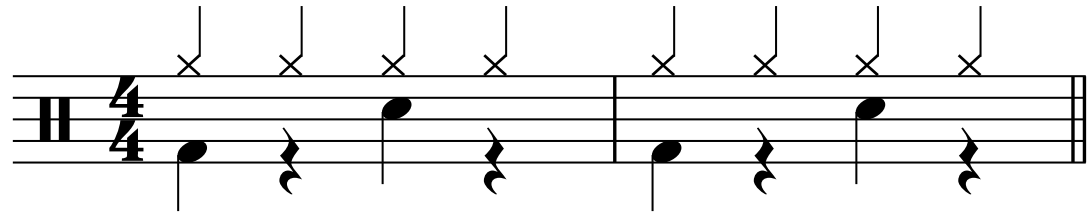
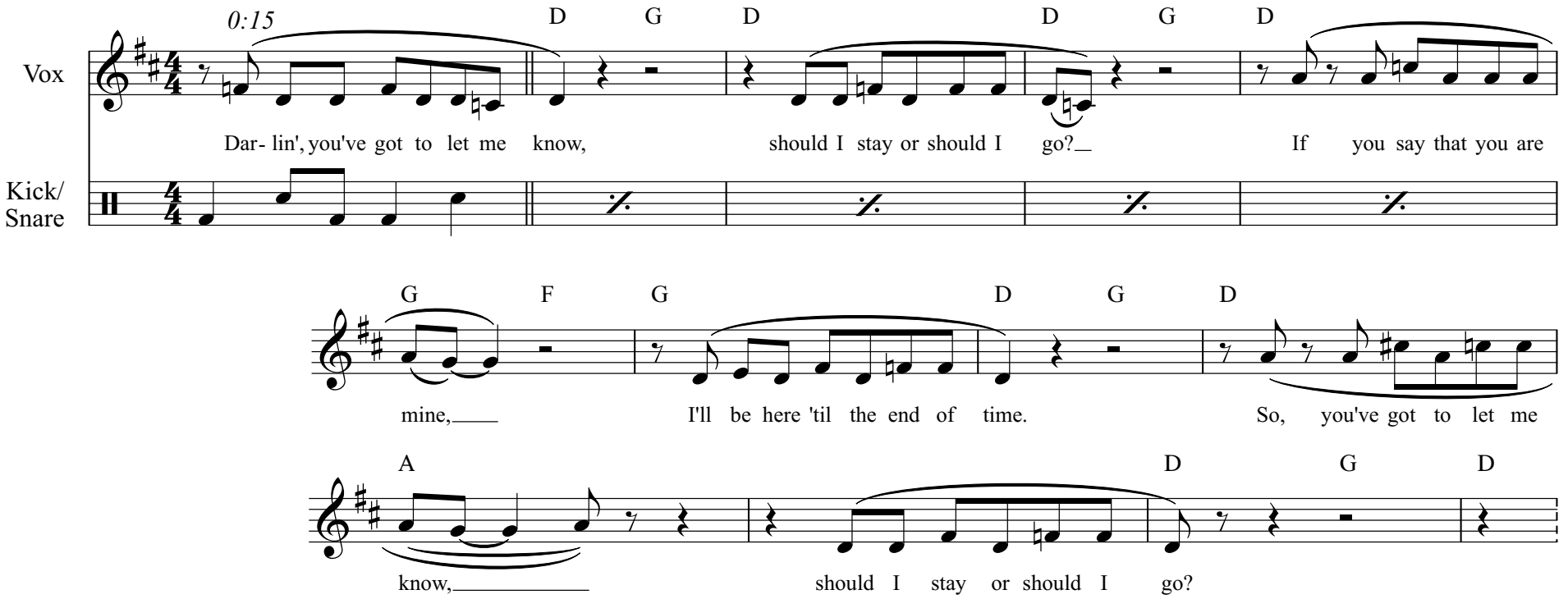


“Half-time” feel



Standard rock beat:
“Should I Stay or Should I Go” (The Clash, 1982), verse



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Standard rock beat:
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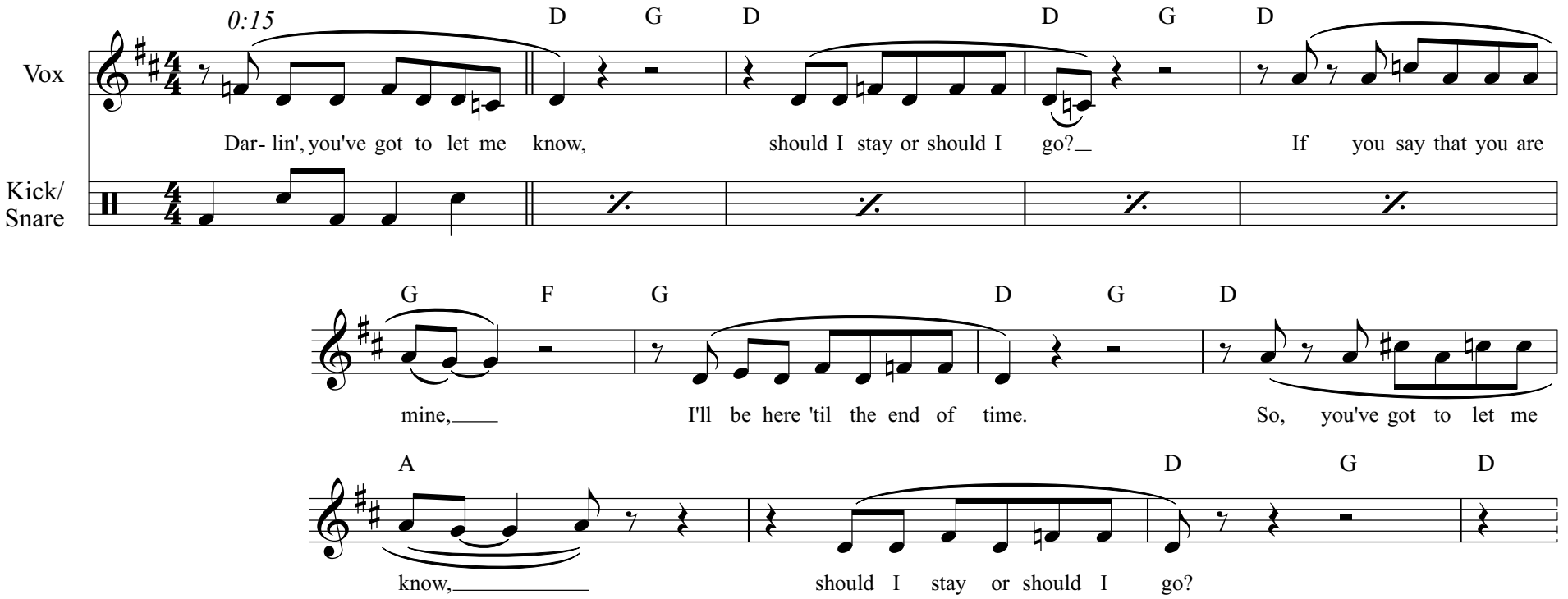

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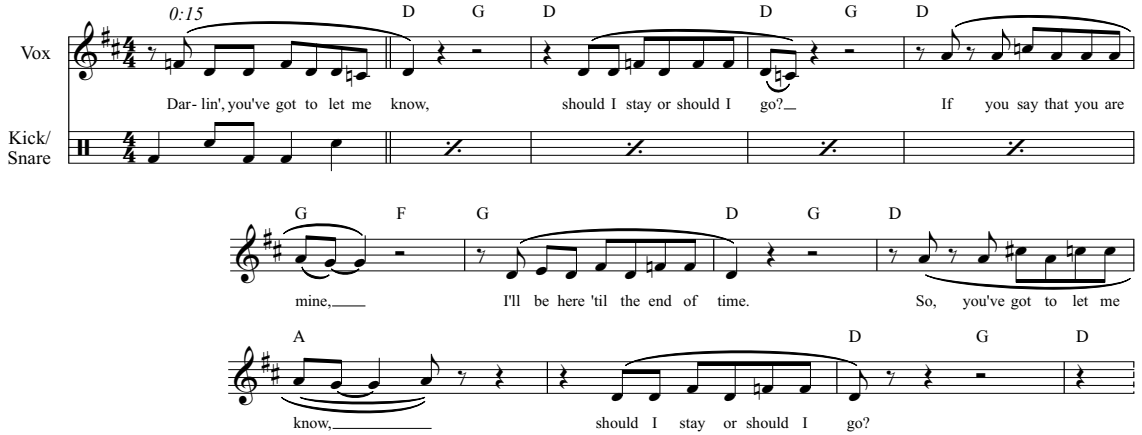
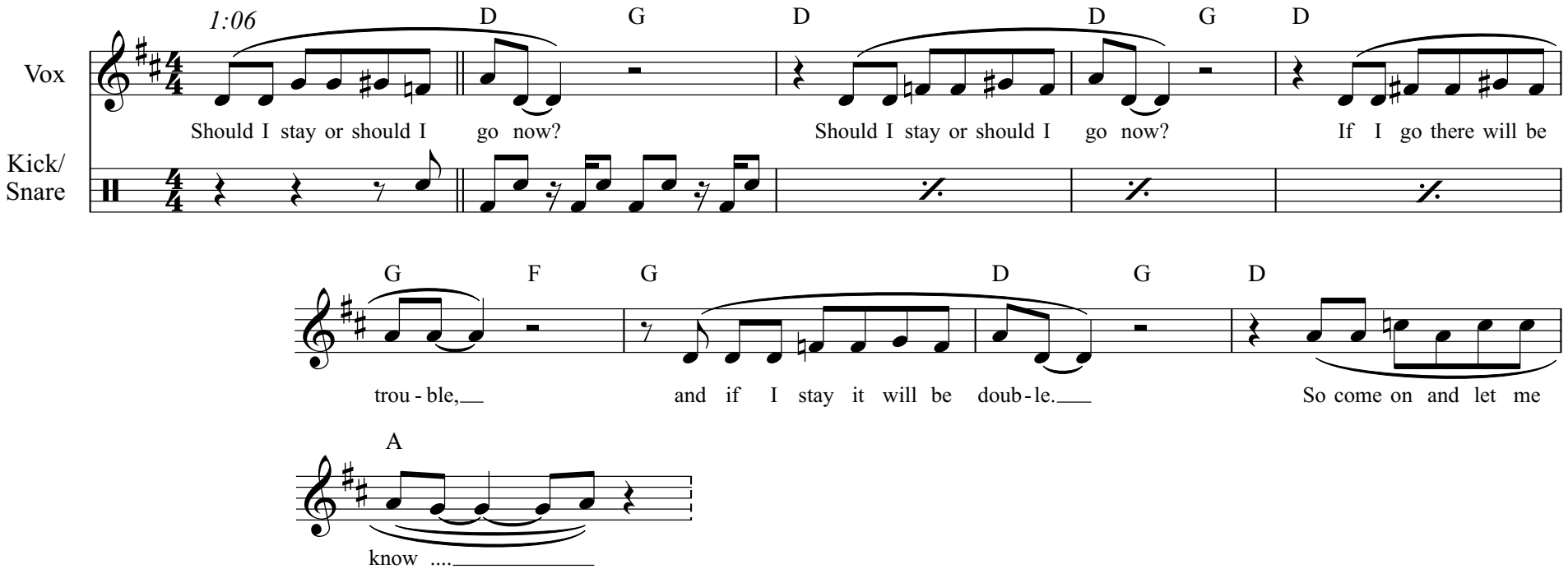


Double-time feel:
“Should I Stay or Should I Go” (The Clash, 1982), chorus



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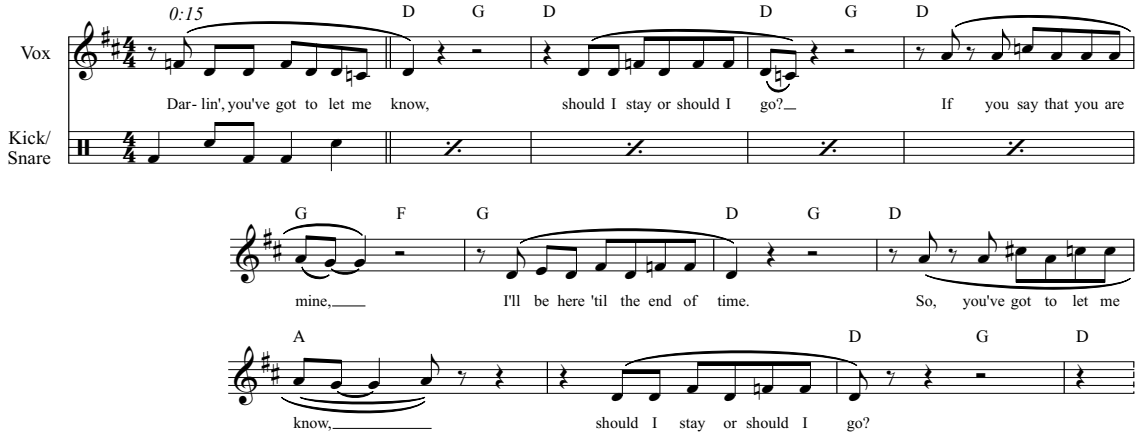

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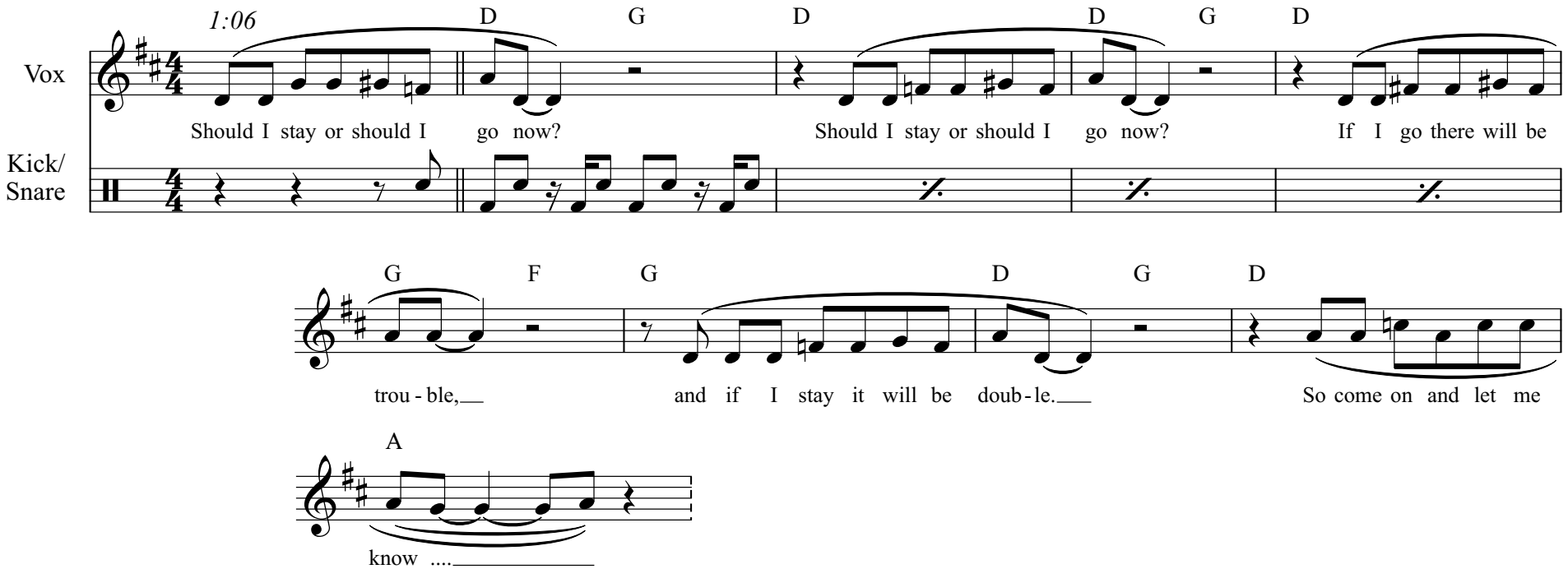

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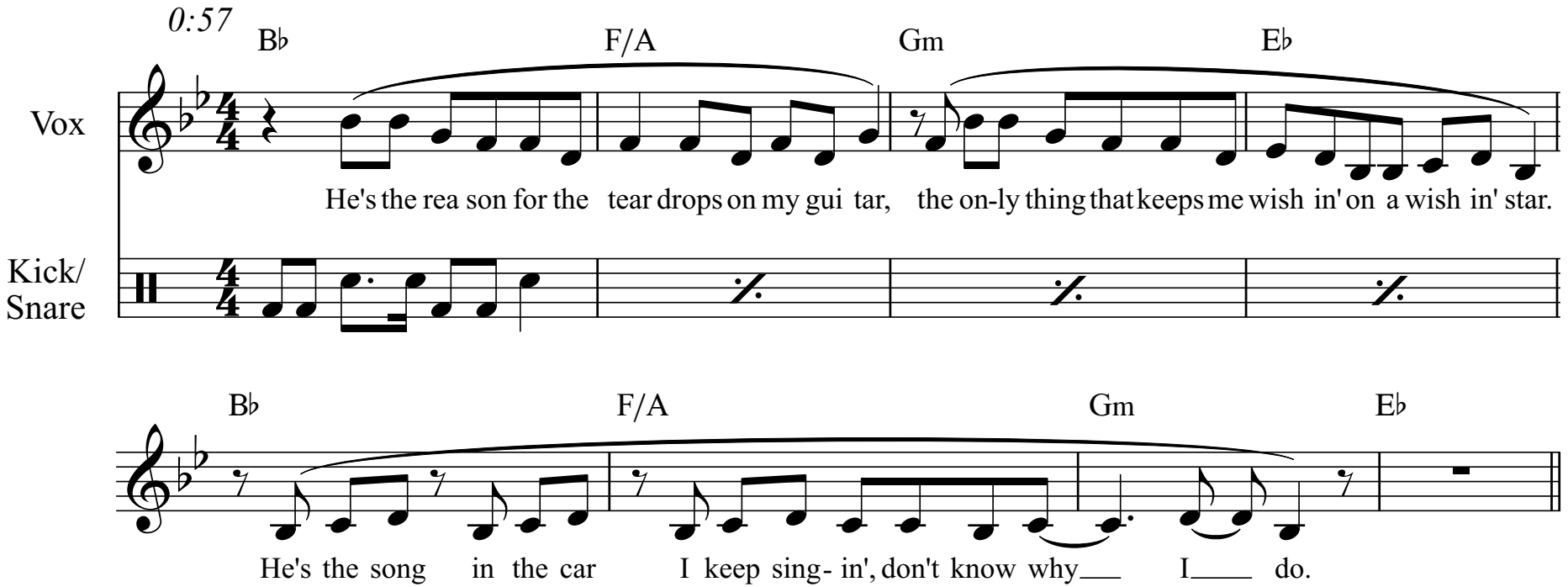

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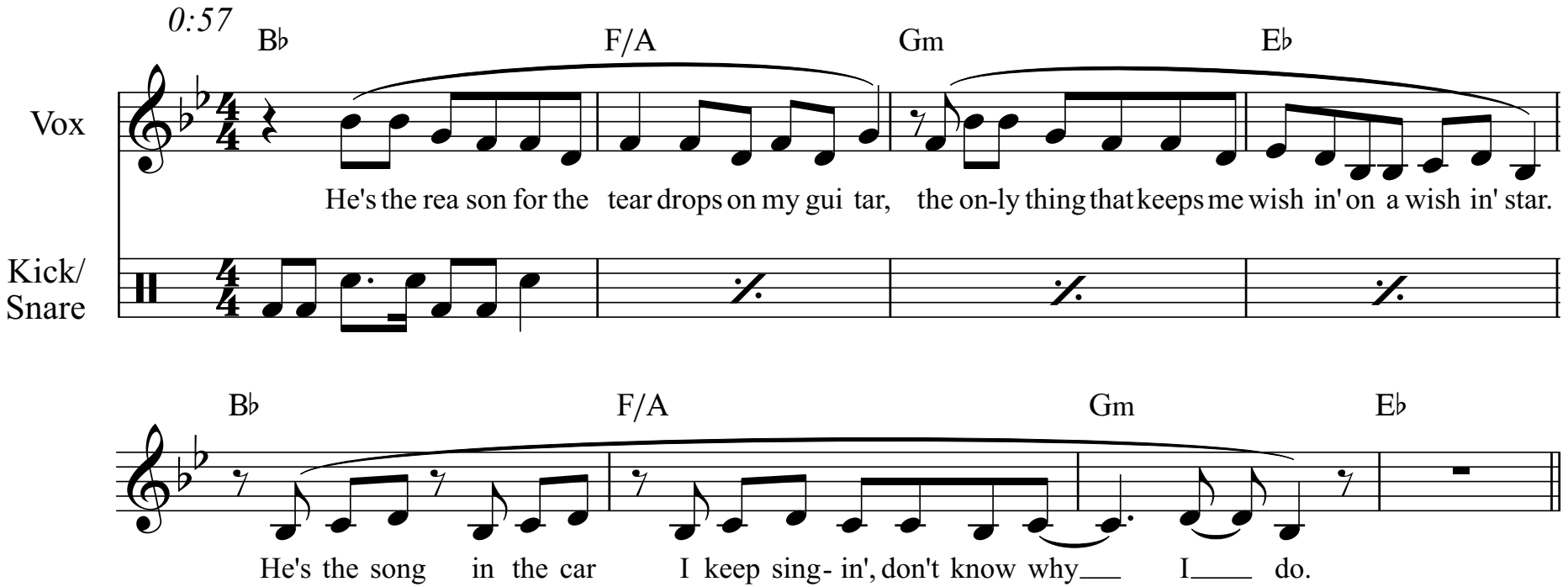

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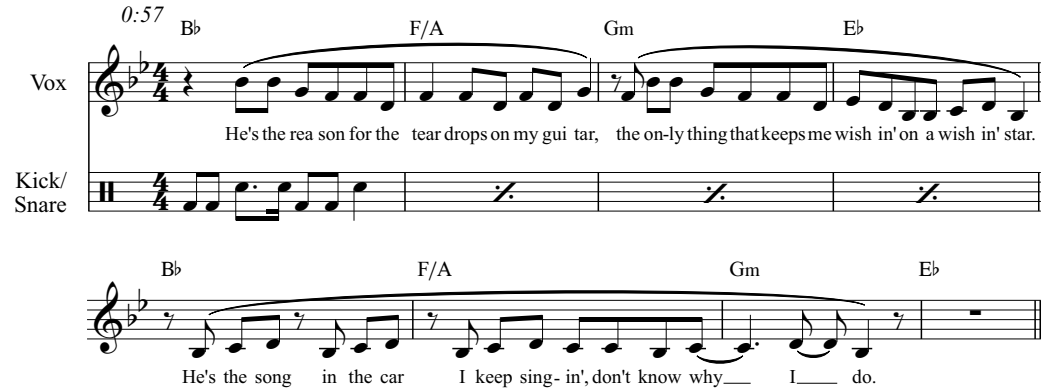

Half-time feel:
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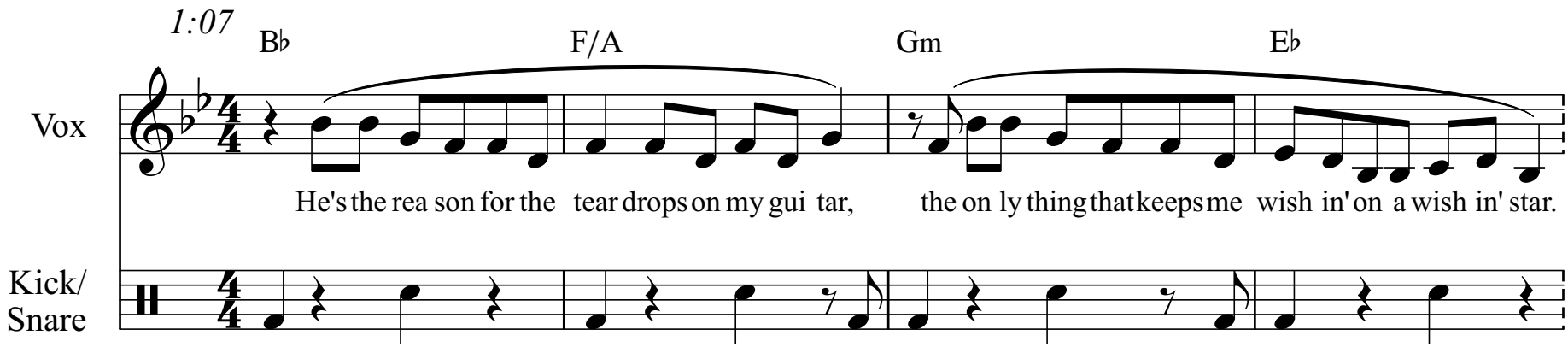

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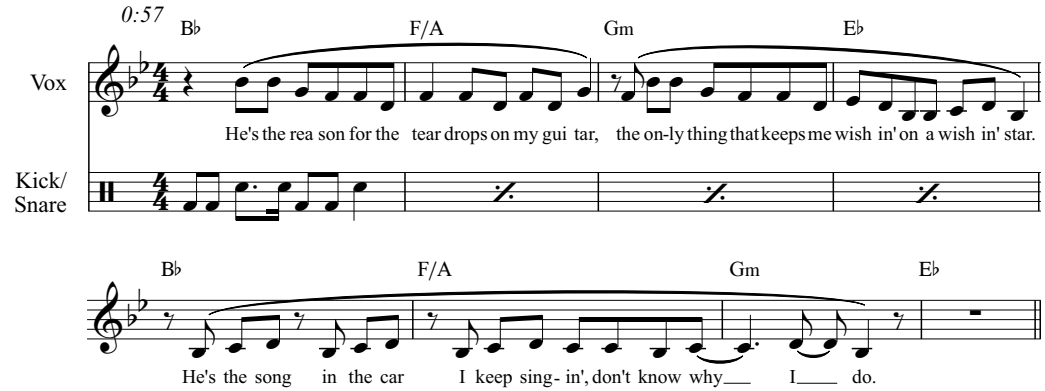

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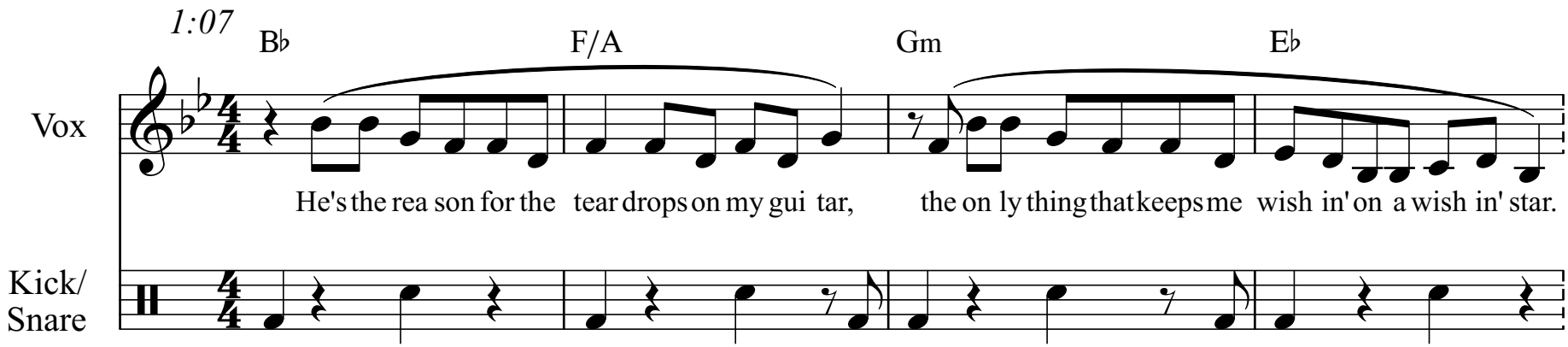

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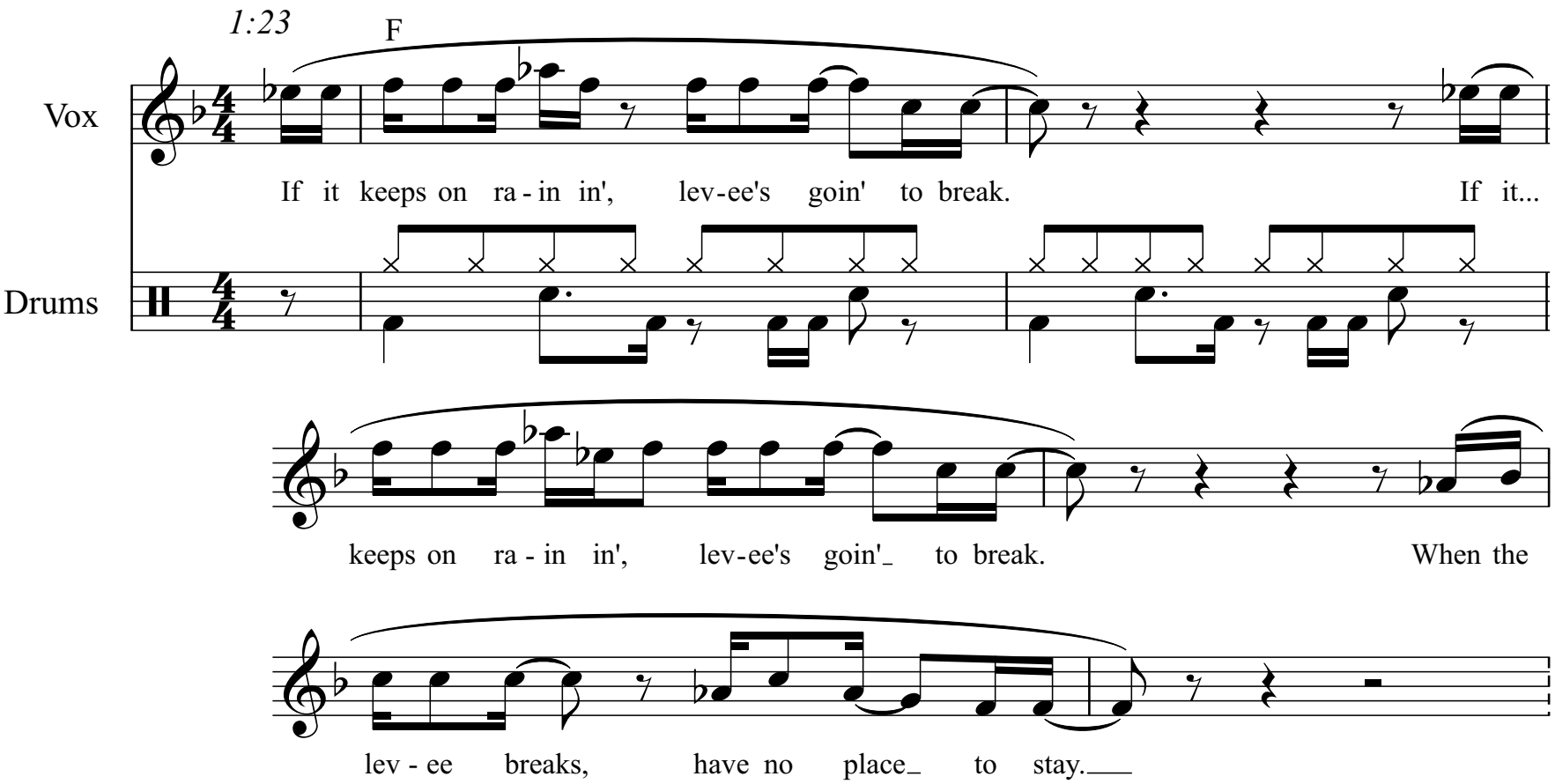
“When the Levee Breaks” (Led Zeppelin, 1971), 6-bar reading of opening material



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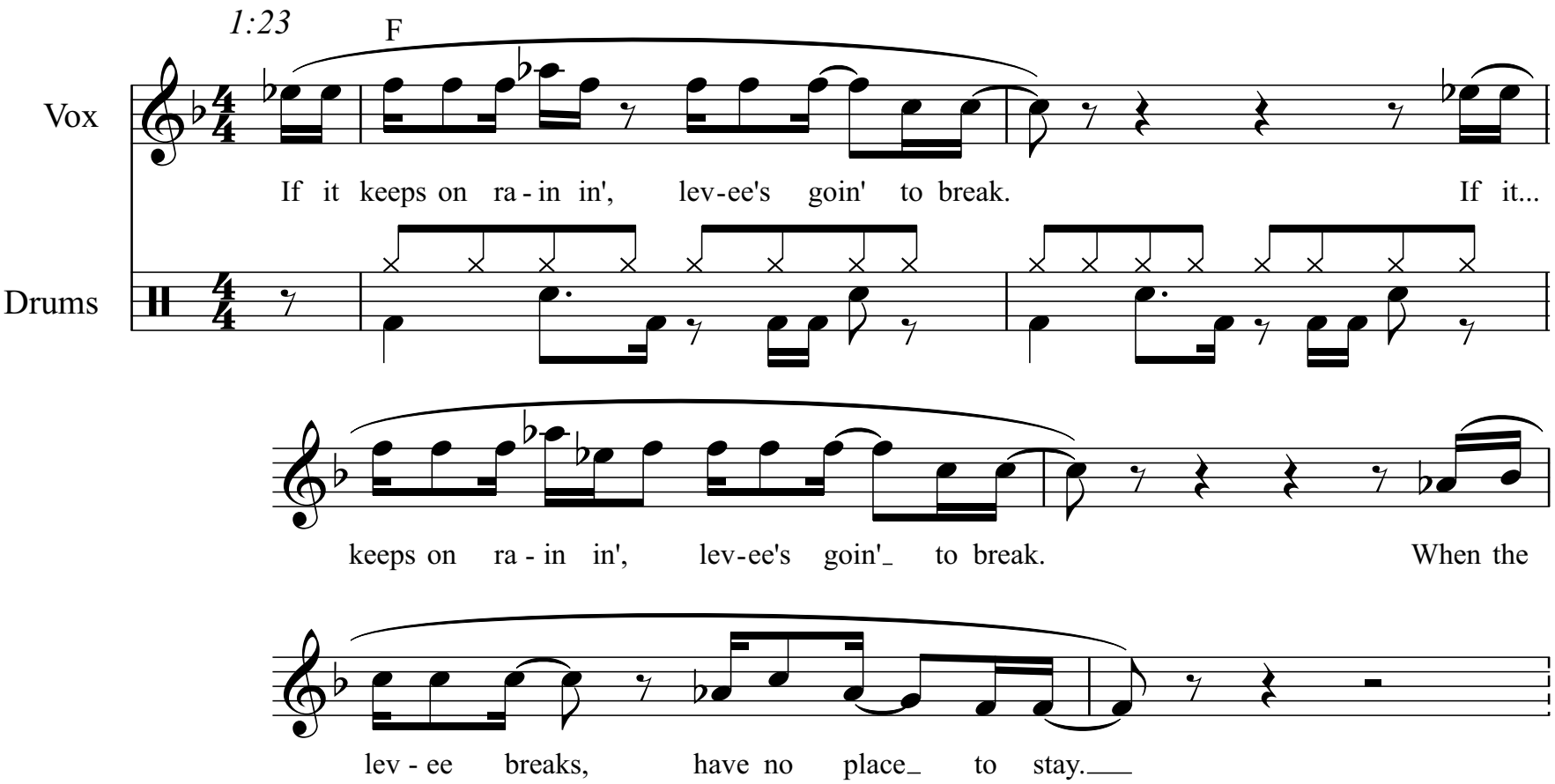

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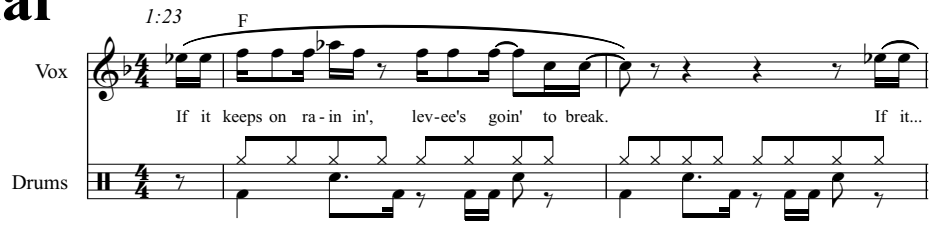
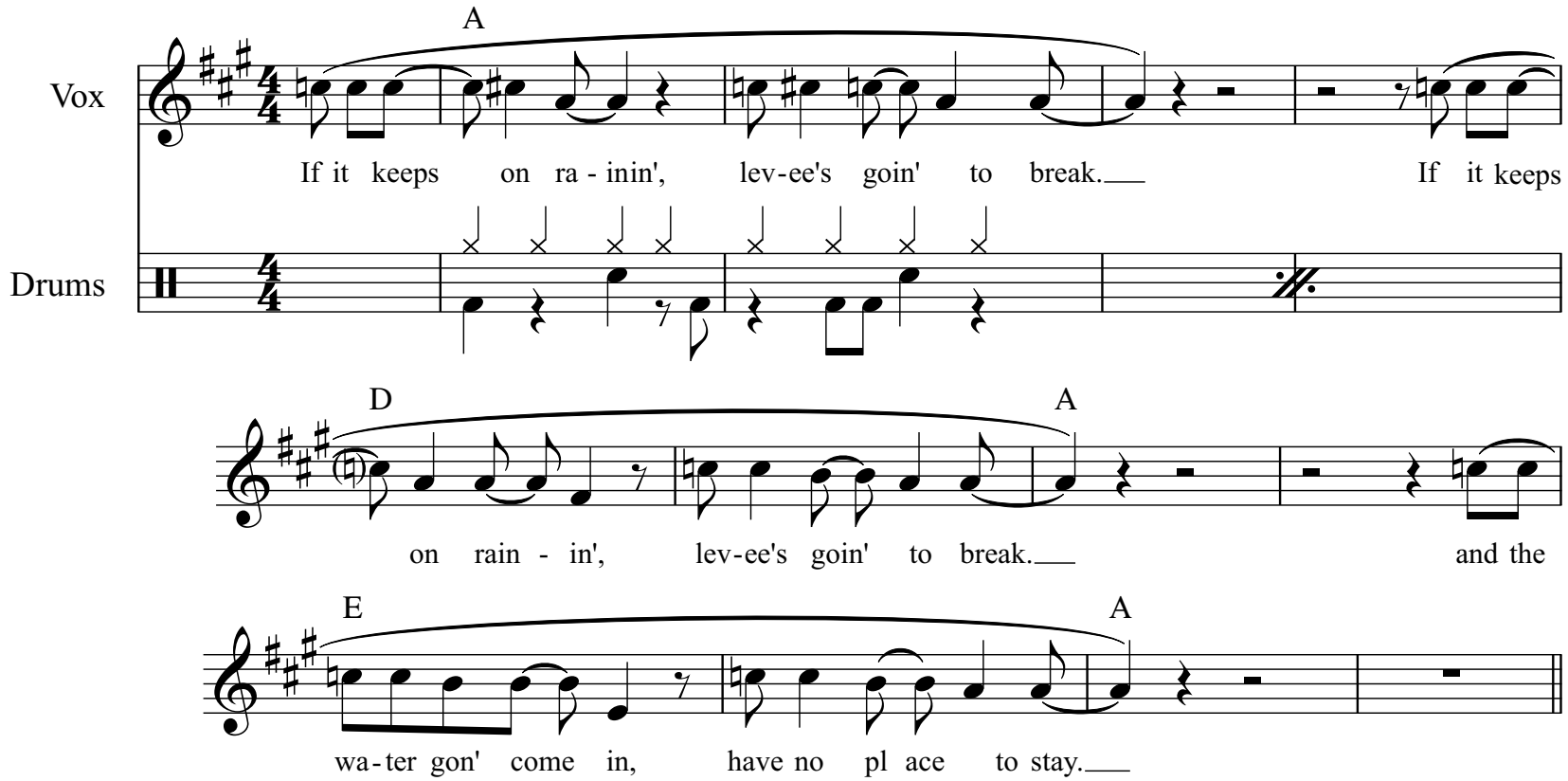


“When the Levee Breaks” (Joe McCoy & Memphis Minnie, 1929), 12-bar reading, mashed-up with Led Zeppelin drumbeat



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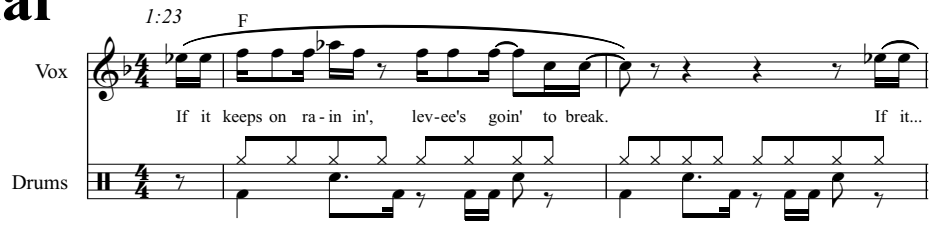

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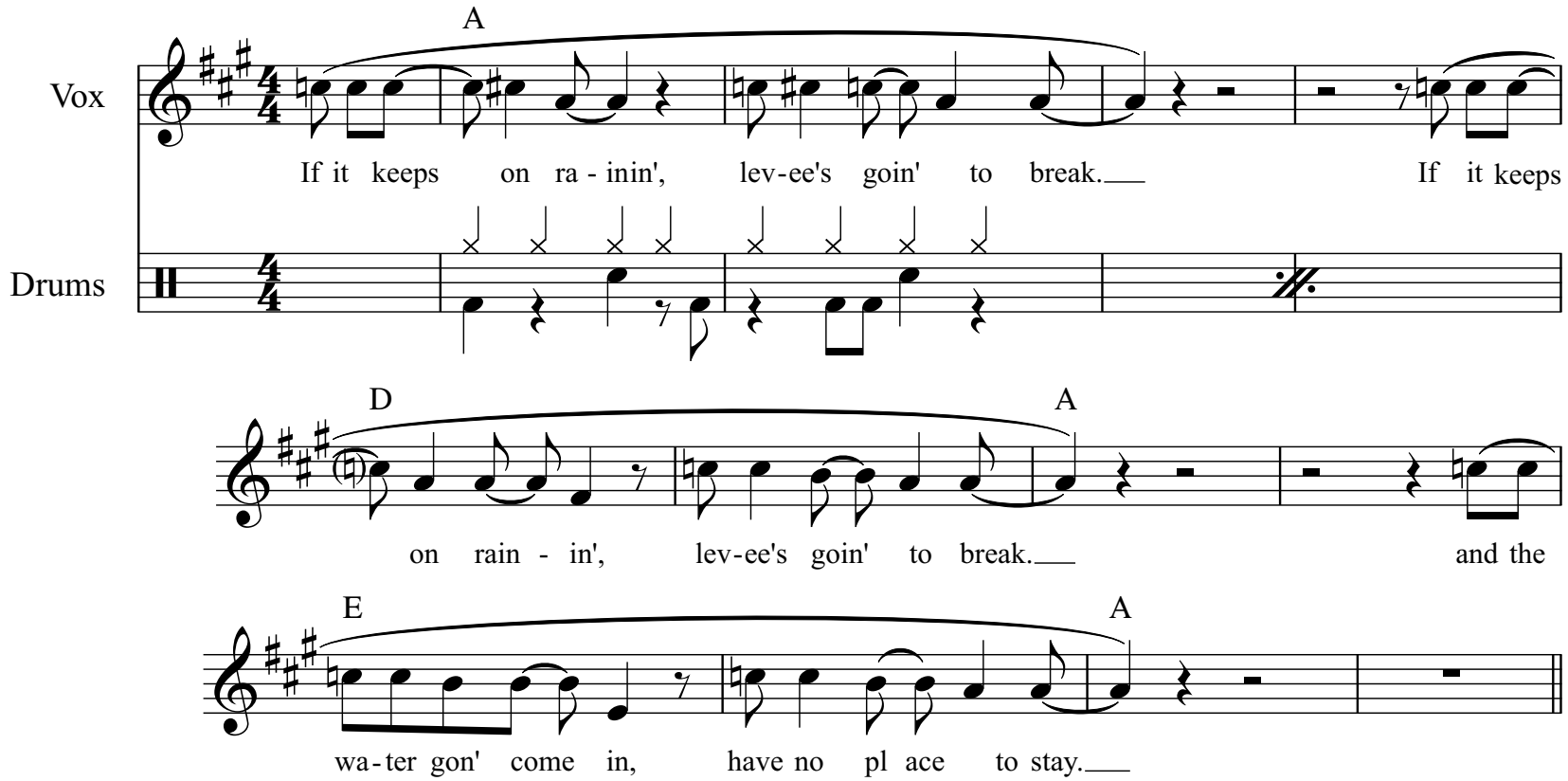
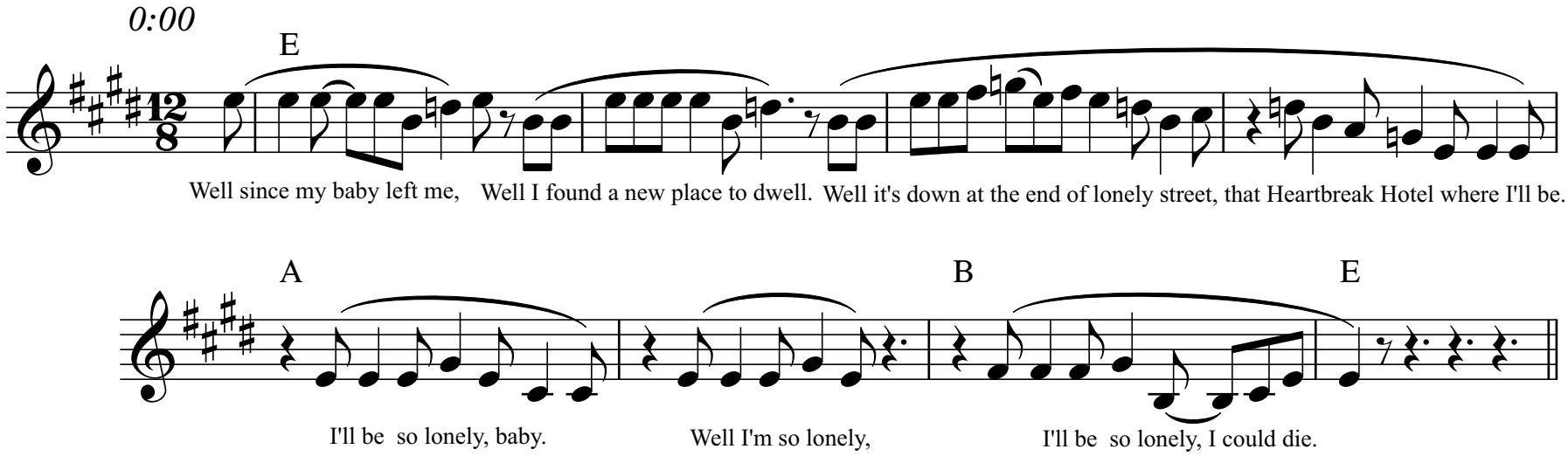


IV. Analysis

“Heartbreak Hotel” (Elvis Presley, 1956), main material



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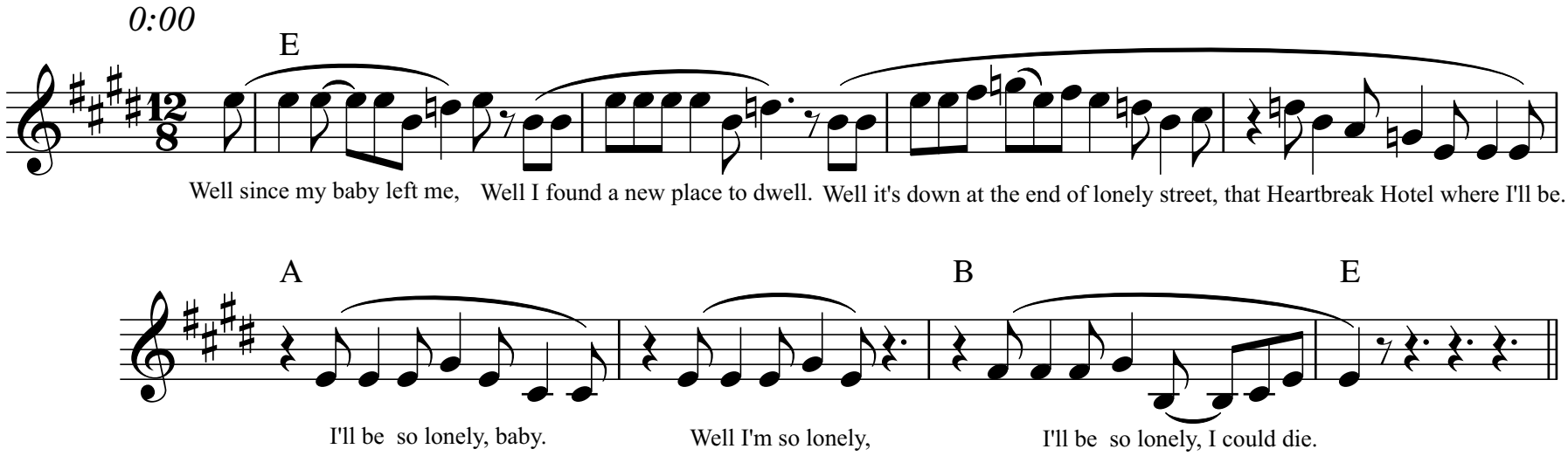

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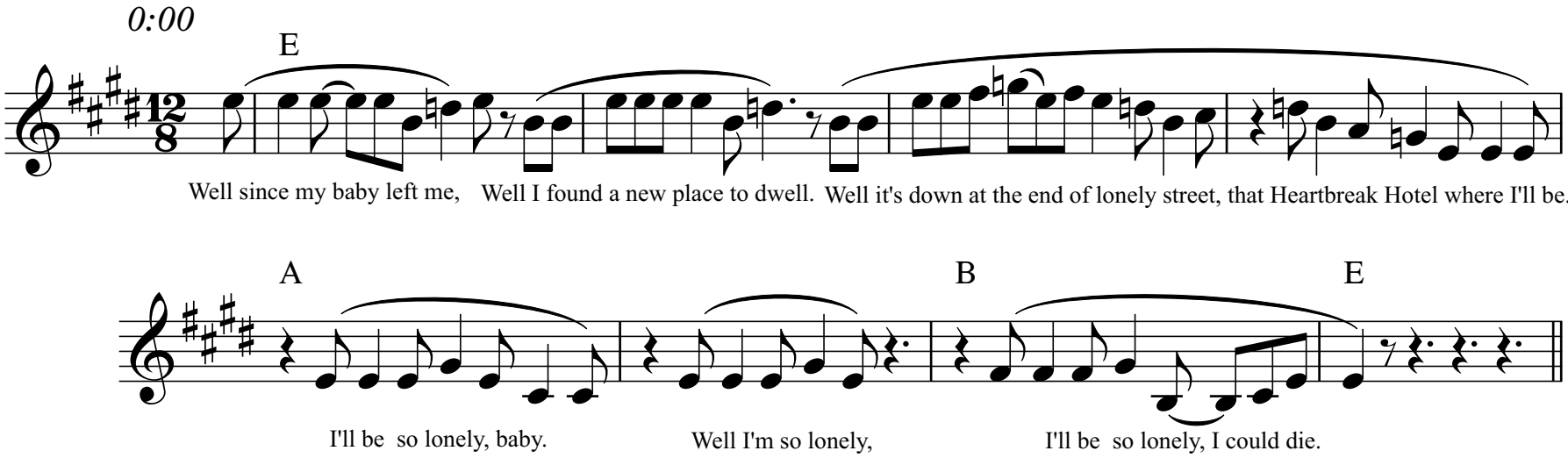
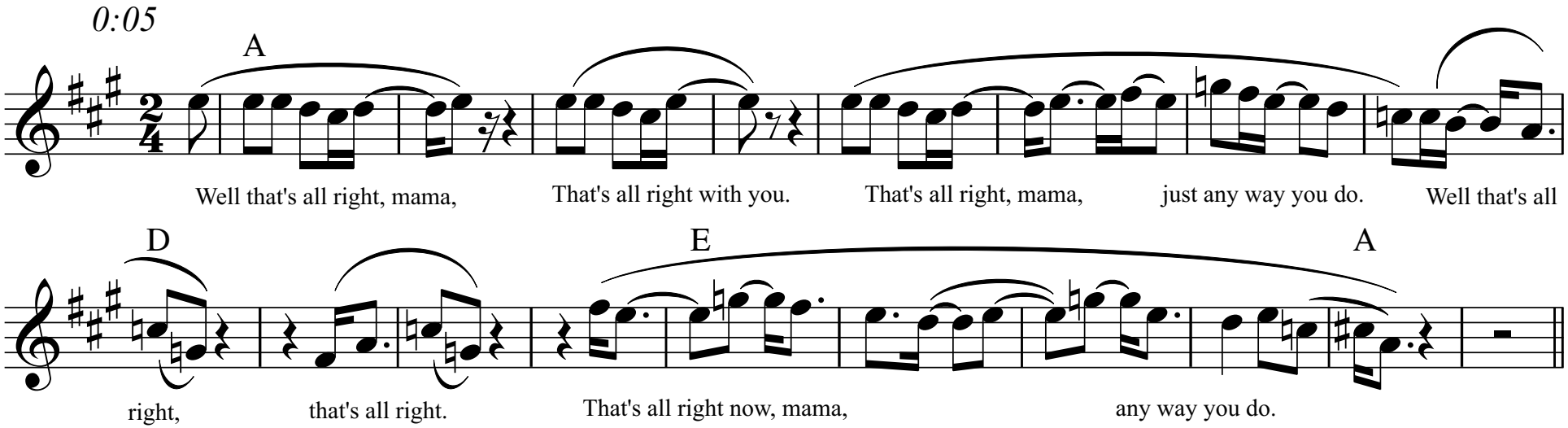
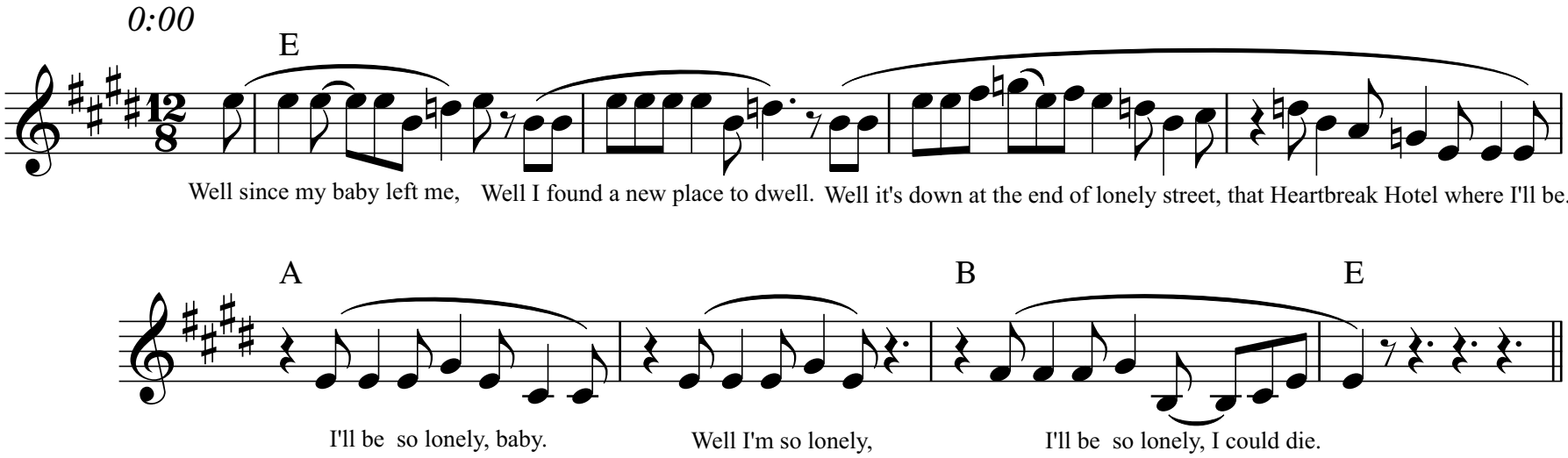


“That’s All Right” (Elvis Presley, 1954), main material

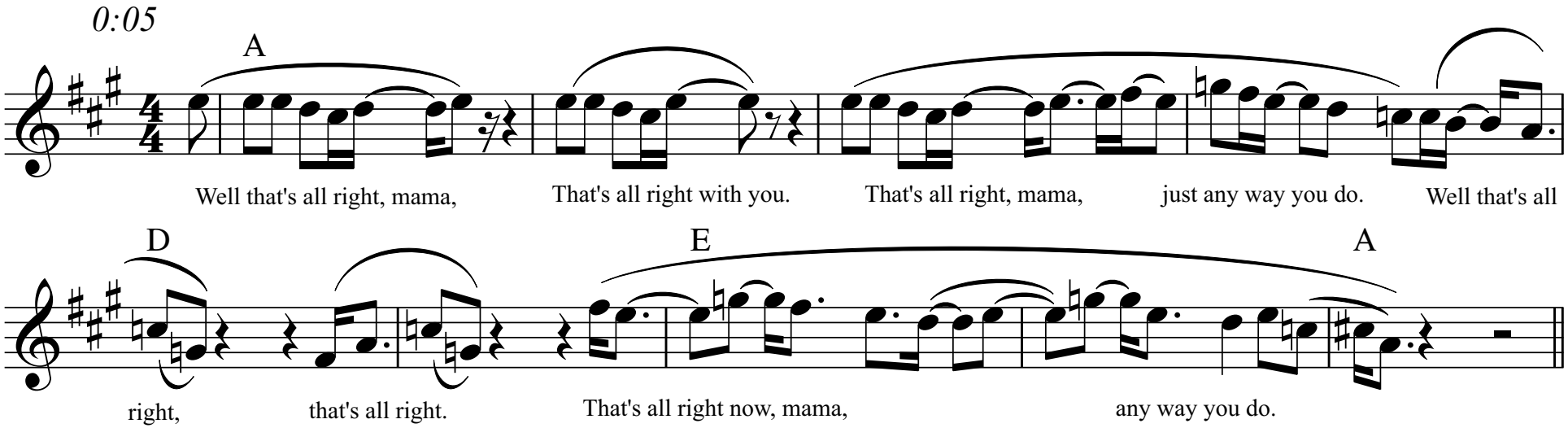


IV. Analysis

“Heartbreak Hotel” (Elvis Presley, 1956), main material

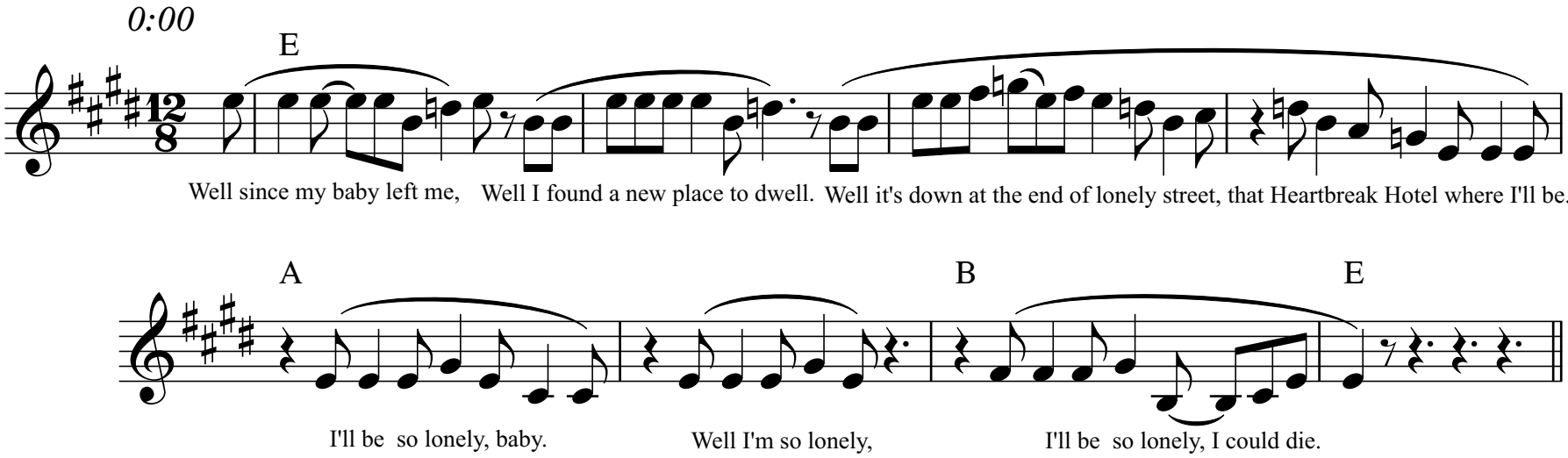


“That’s All Right” (Elvis Presley, 1954), main material

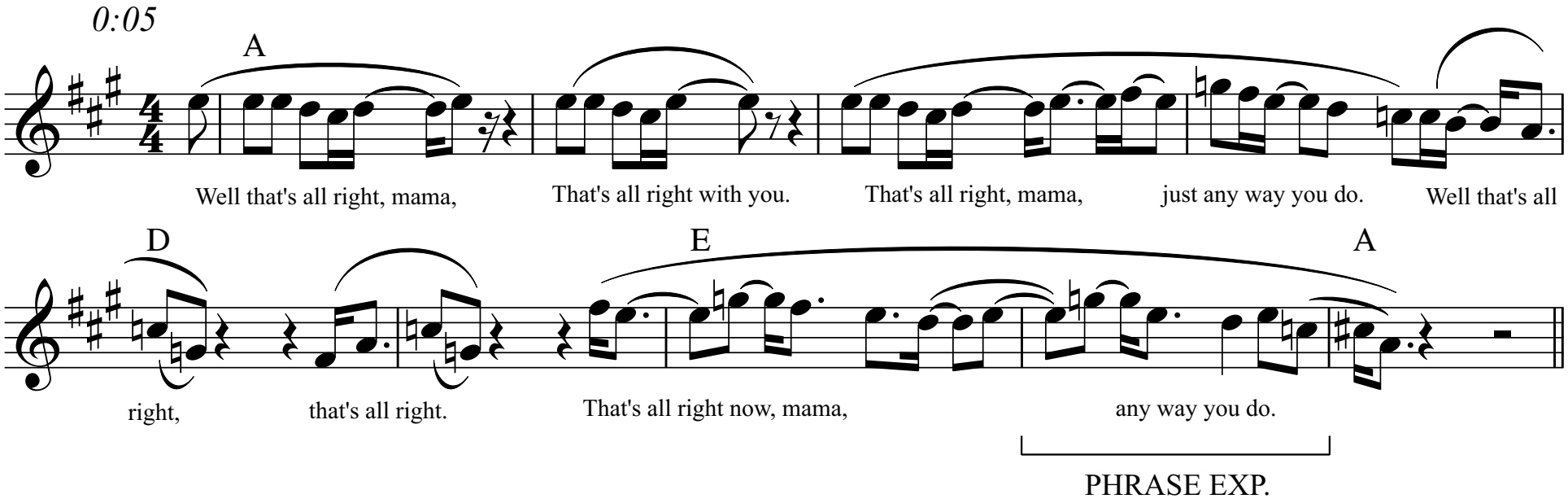


IV. Analysis

“Heartbreak Hotel” (Elvis Presley, 1956), main material

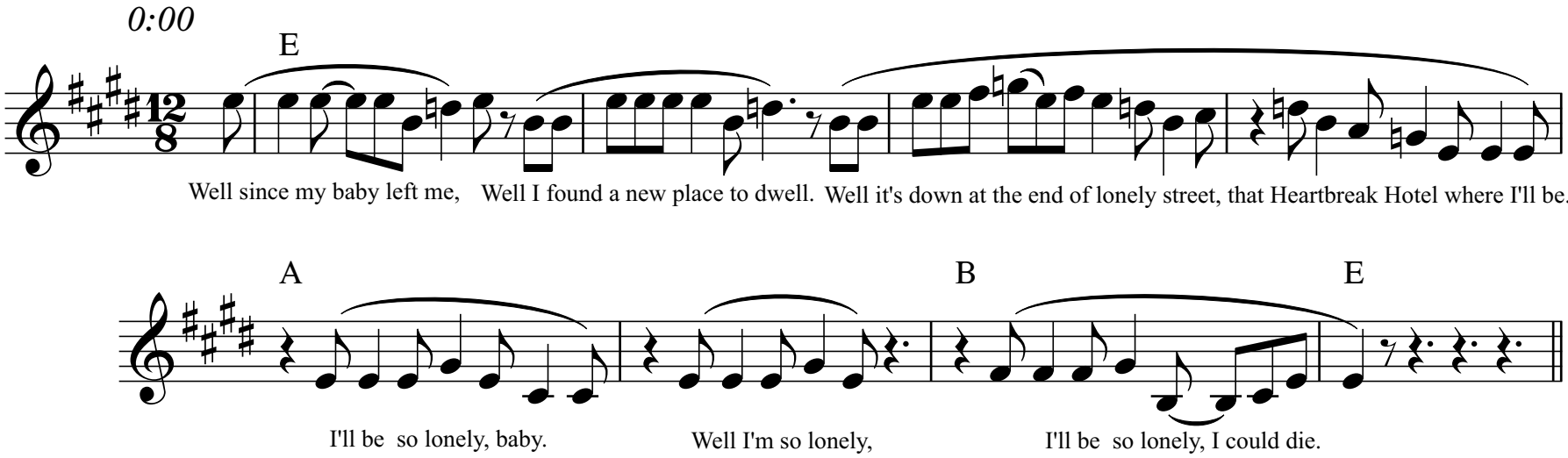


“That’s All Right” (Elvis Presley, 1954), main material

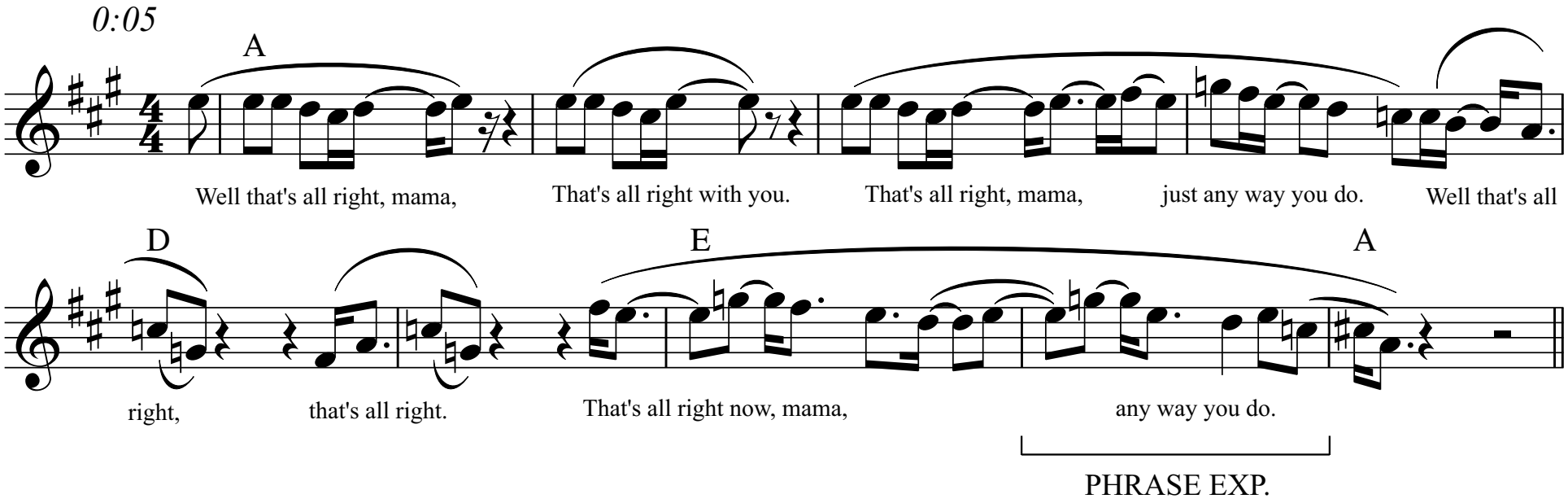


IV. Analysis

“Heartbreak Hotel” (Elvis Presley, 1956), main material

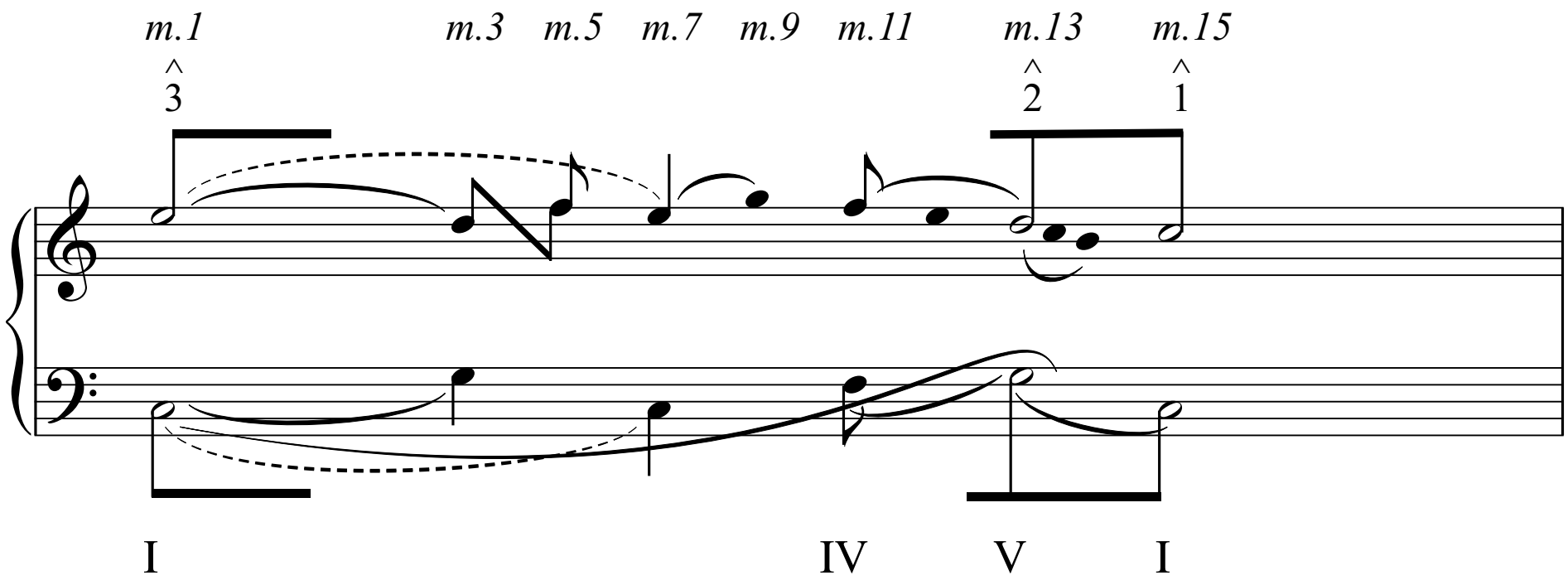


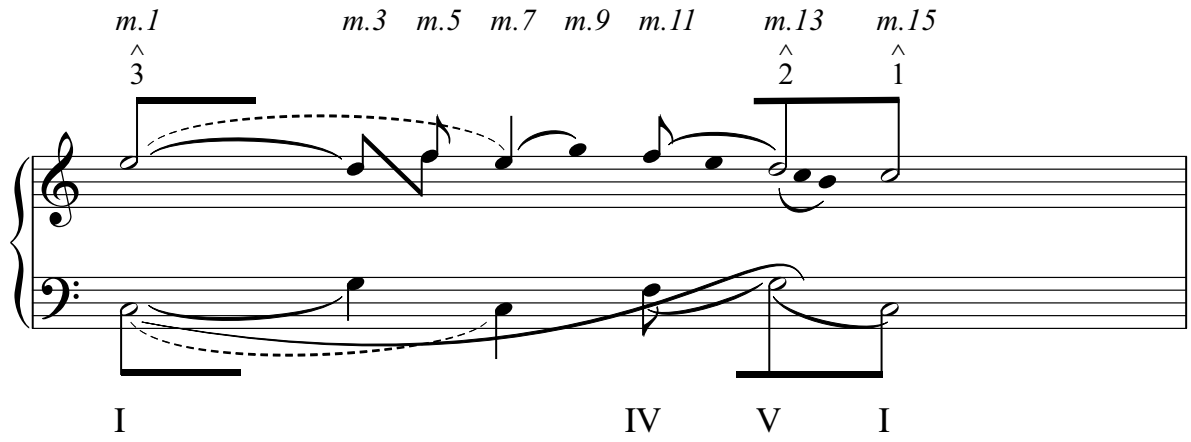
“That’s All Right” (Elvis Presley, 1954), main material



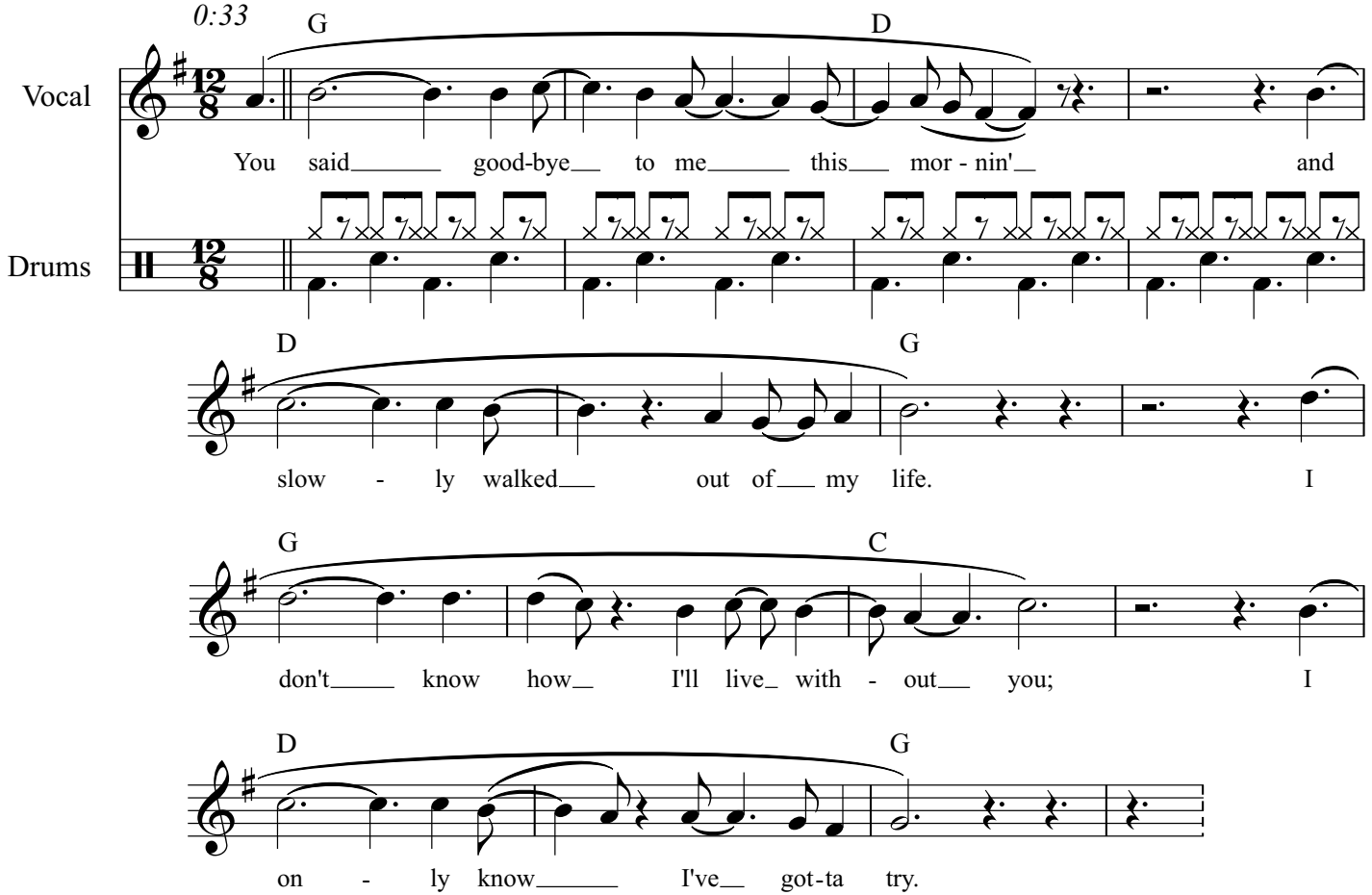
IV. Analysis

Buck Owens voice-leading schema

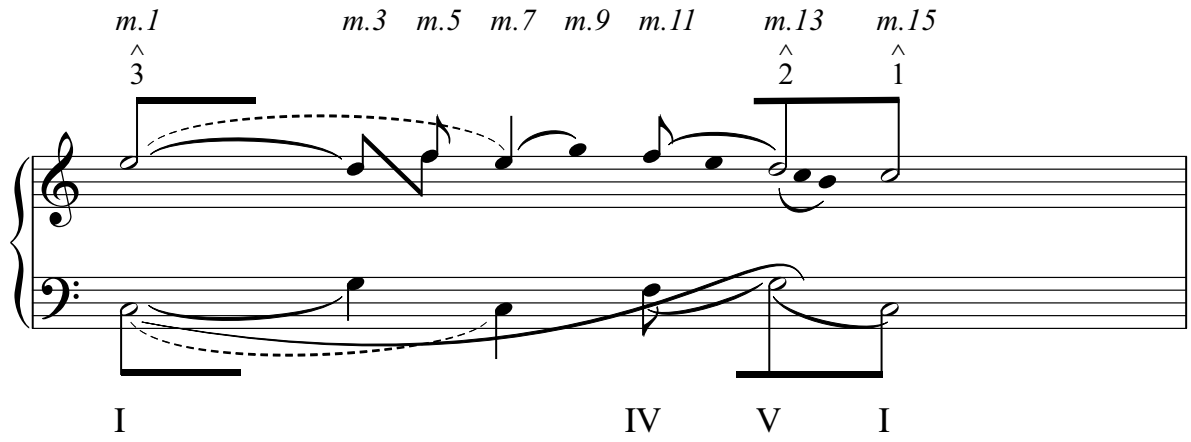




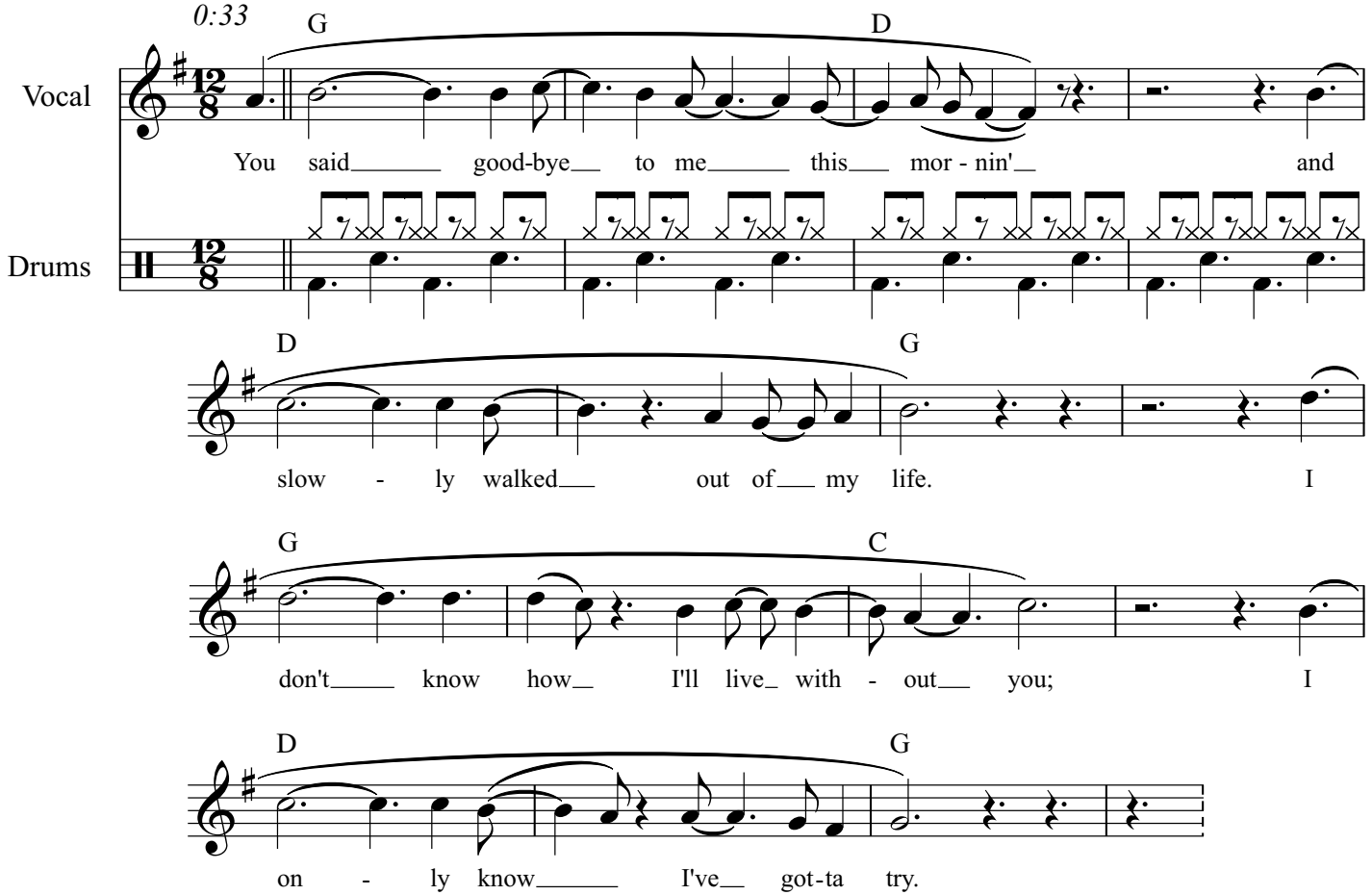
“Down to the River” (Buck Owens, 1962), verse



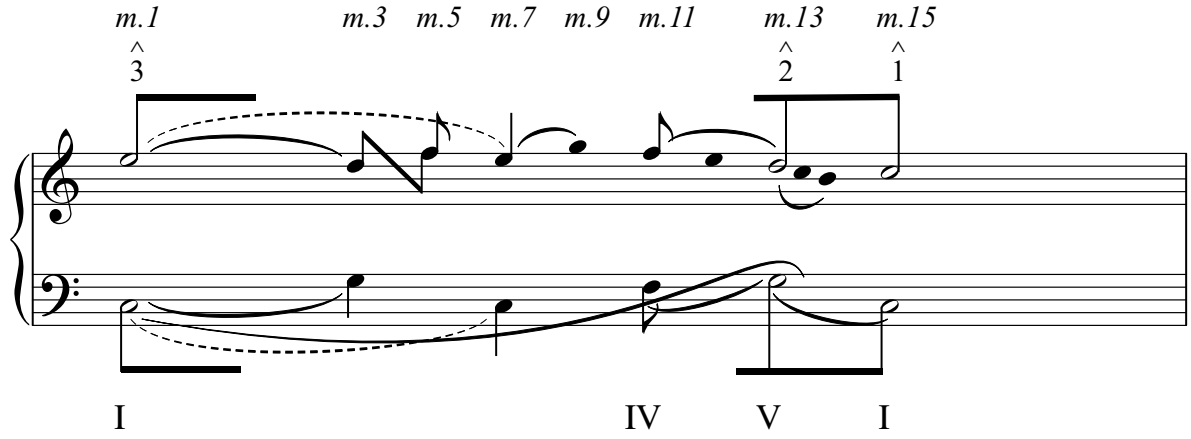
IV. Analysis



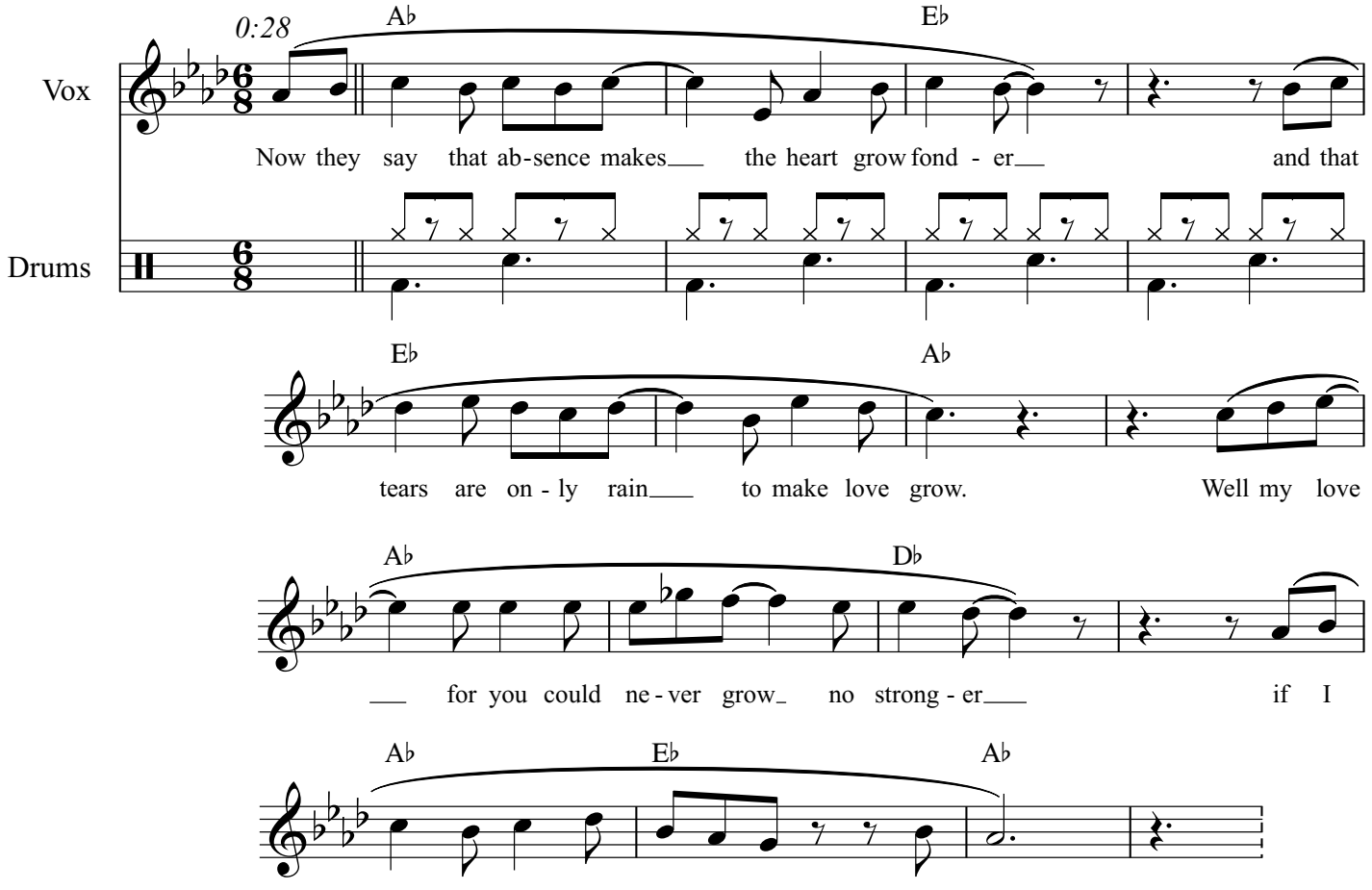
“Down to the River” (Buck Owens, 1962), verse



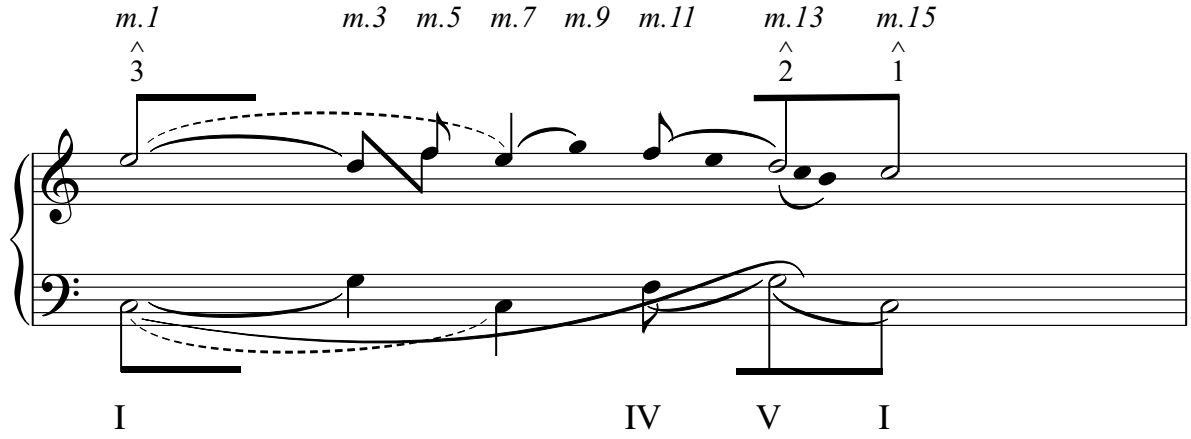
IV. Analysis



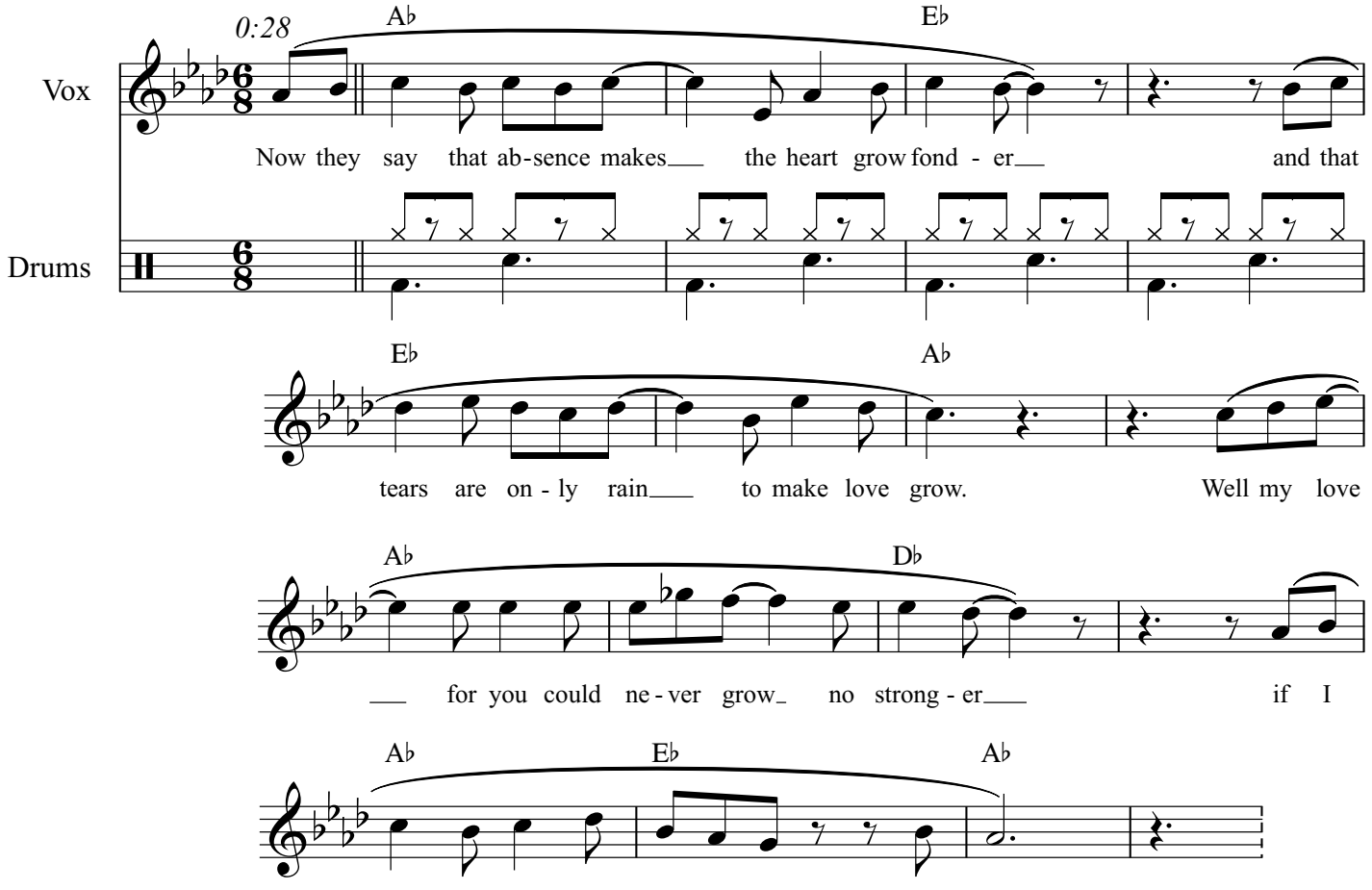
“Cryin’ Time” (Buck Owens, 1964), verse



IV. Analysis



“Cryin’ Time” (Buck Owens, 1964), verse

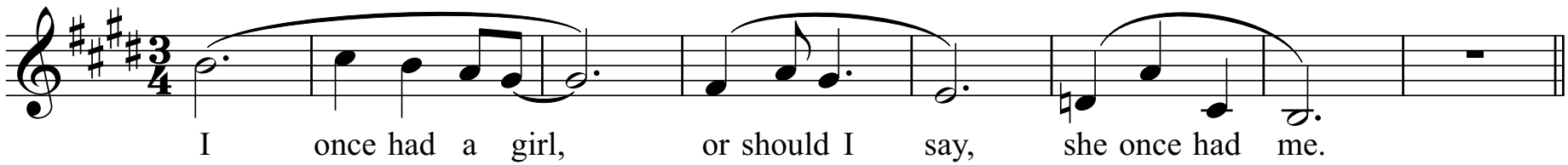


IV. Analysis

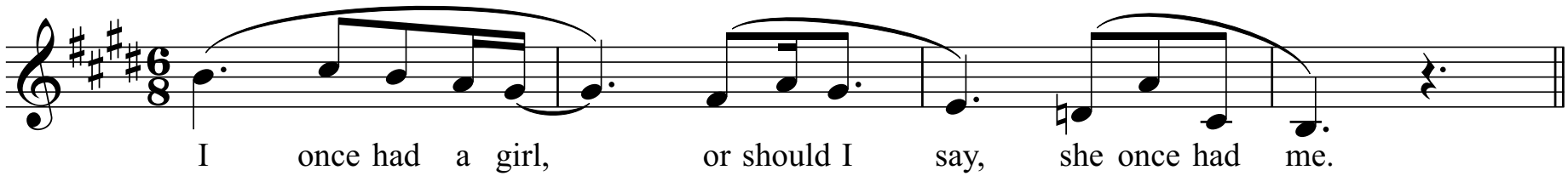
- The drum pattern is not a reliable guide for measure lengths
- Absolute time should be considered in bar length decisions
- The 2-second measure may be the ideal perceptual reference

Three possible readings of meter and bar lengths for "Norwegian Wood" (The Beatles, 1965)

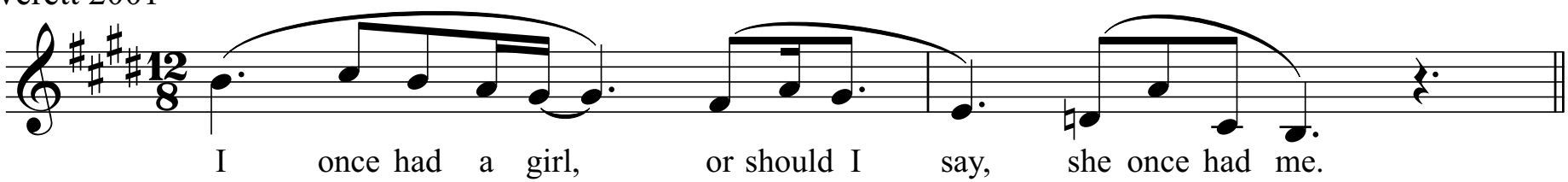
Pollack 1993



Covach 2006



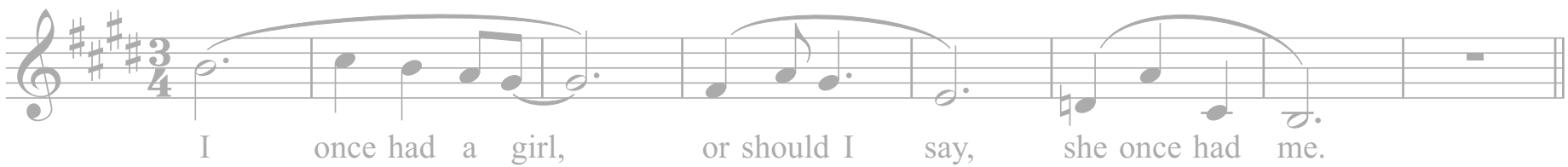
Everett 2001



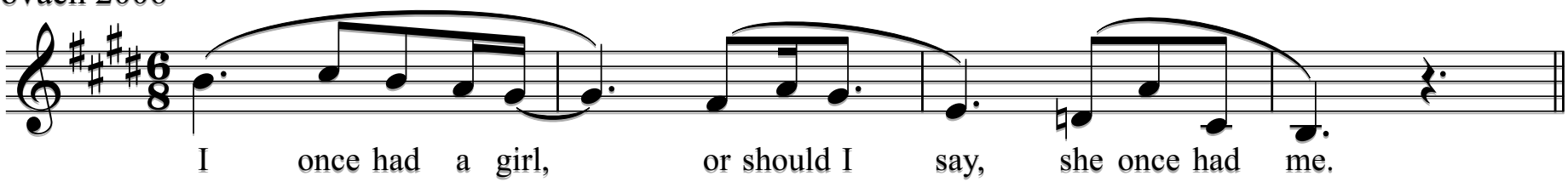
V. Conclusion

Three possible readings of meter and bar lengths for “Norwegian Wood” (The Beatles, 1965)

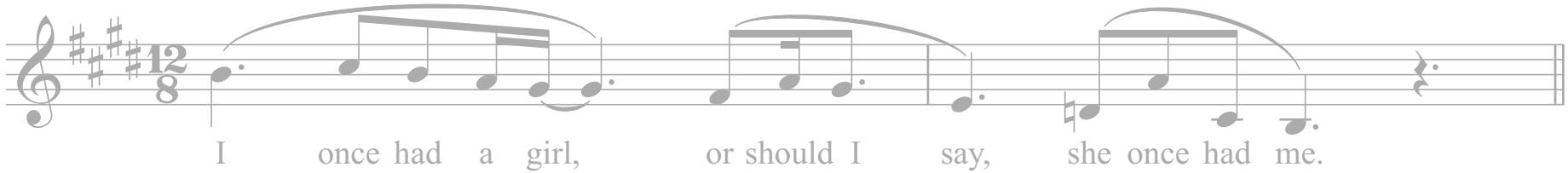
Pollack 1993



Covach 2006



Everett 2001



V. Conclusion

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Beat Rate (BPM)	Quadruple Measure	Triple Measure	Duple Measure
30	8.00	6.00	4.00
34	7.03	5.27	3.51
39	6.17	4.63	3.08
44	5.42	4.06	2.71
50	4.76	3.57	2.38
57	4.18	3.13	**2.09**
65	3.67	2.75	1.83
75	3.22	2.42	1.61
85	2.83	**2.12**	1.41
97	2.48	1.86	1.24
110	2.18	1.64	1.09
125	**1.92**	1.44	0.96
143	1.68	1.26	0.84
163	1.48	1.11	0.74
185	1.30	0.97	0.65
211	1.14	0.85	0.57
240	1.00	0.75	0.50