Historical Shifts in the Metric Organization of R&B Music: A Case Study of Motown Albums, 1961–2005

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I. Background
II. Methodology
III. Statistical Analysis
IV. Discussion

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“Poison” (Bell Biv DeVoe, 1990)

Meter?

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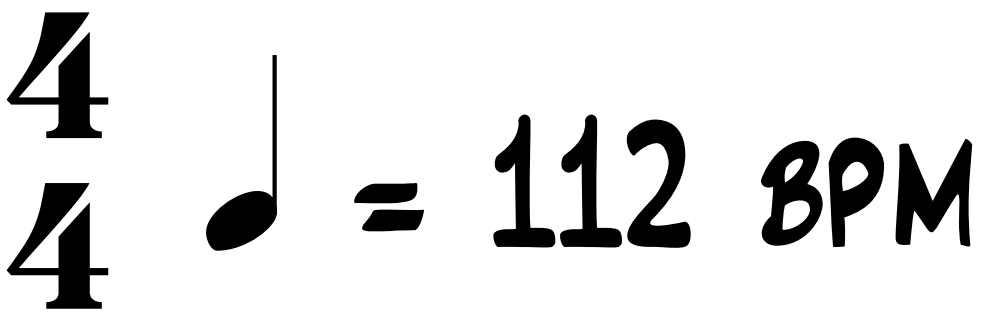

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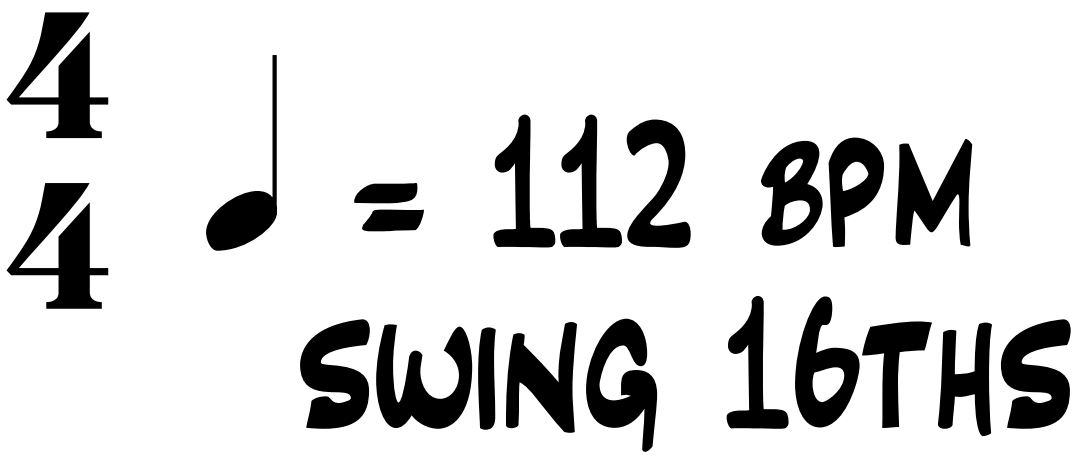

Contemporary R&B (mid-1980s to present)

SWING 16THS

Contemporary R&B (mid-1980s to present)

SWING 16THS

SWING 8THS

Contemporary R&B (mid-1980s to present)

SWING 16THS

~~SWING 8THS~~

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Motown discography, 1961–2005

Year	Artist	Album
1961	The Marvelettes	*Please Mr. Postman*
1963	Martha and the Vandellas	*Heat Wave*
1967	The Four Tops	*Reach Out*
1970	The Jackson 5	*ABC*
1971	Marvin Gaye	*What's Going On*
1976	Stevie Wonder	*Songs in the Key of Life*
1981	Rick James	*Street Songs*
1983	Lionel Richie	*Can't Slow Down*
1985	DeBarge	*Rhythm of the Night*
1990	Johnny Gill	*Johnny Gill*
1994	Boyz II Men	*II*
1999	Brian McKnight	*Back at One*
2003	Erykah Badu	*Worldwide Underground*
2005	India Arie	*Testimony, vol. 1*

Motown discography, 1961–2005

205 studio albums*

* no soundtrack albums
* no holiday albums
* no compilation albums
* no greatest hits albums
* no live albums
* no “rock operas”
* no television specials
* no unreleased albums

Motown discography, 1961–2005

50 songs per 5-year period (“pentade”)

Pentade
1961-1965
1966-1970
1971-1975
1976-1980
1981-1985
1986-1990
1991-1995
1996-2000
2001-2005

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50 songs per 5-year period (“pentade”)

Pentade
1961-1965
1966-1970
1971-1975
1976-1980
1981-1985
1986-1990
1991-1995
1996-2000
2001-2005

450 songs total (50 songs x 9 pentades)

“Higher Ground” (Stevie Wonder, 1973)

124 BPM

“Higher Ground” (Stevie Wonder, 1973)

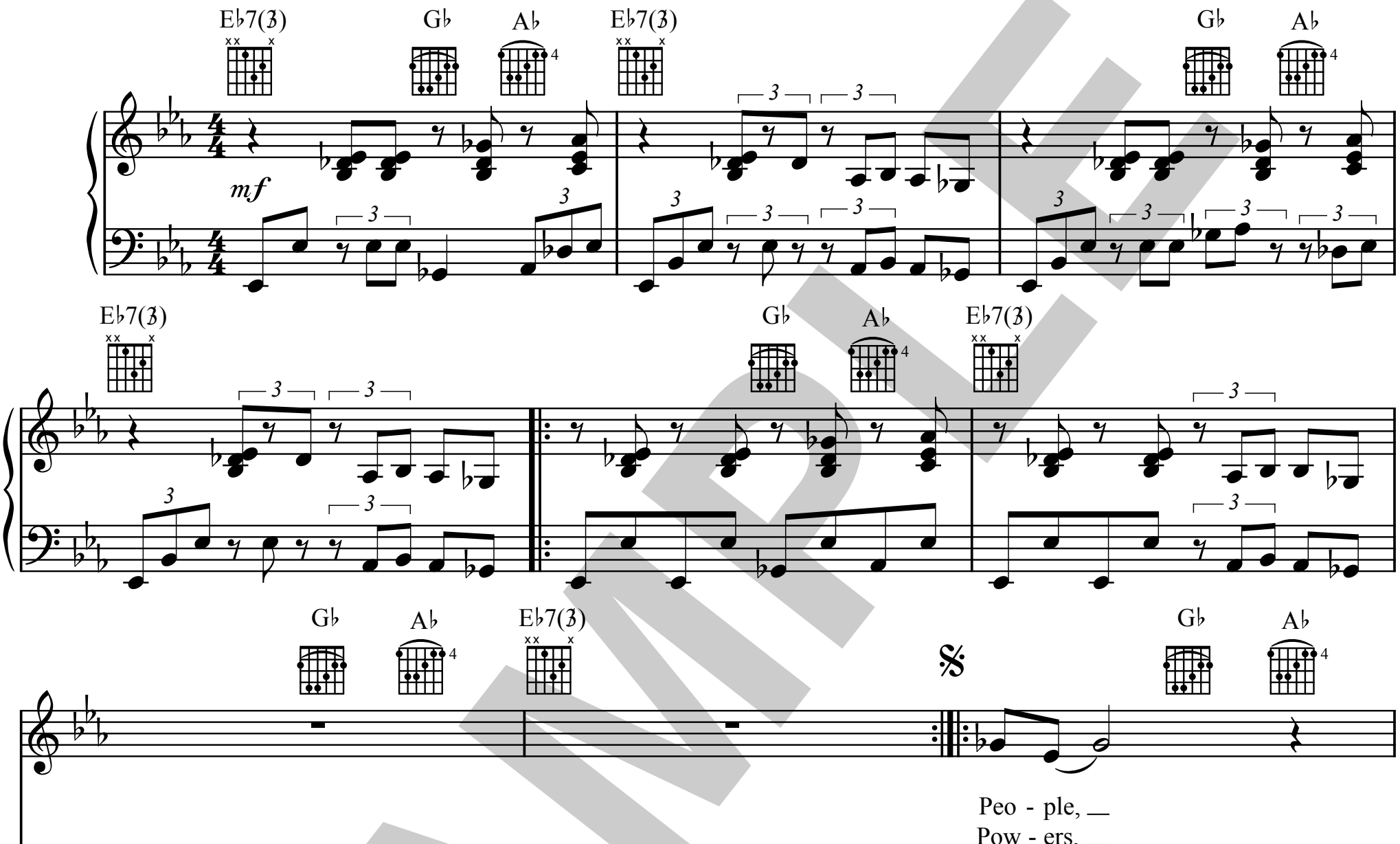
Meter?

124 BPM

HIGHER GROUND

Words and Music by
STEVIE WONDER

Moderate Shuffle



HIGHER GROUND

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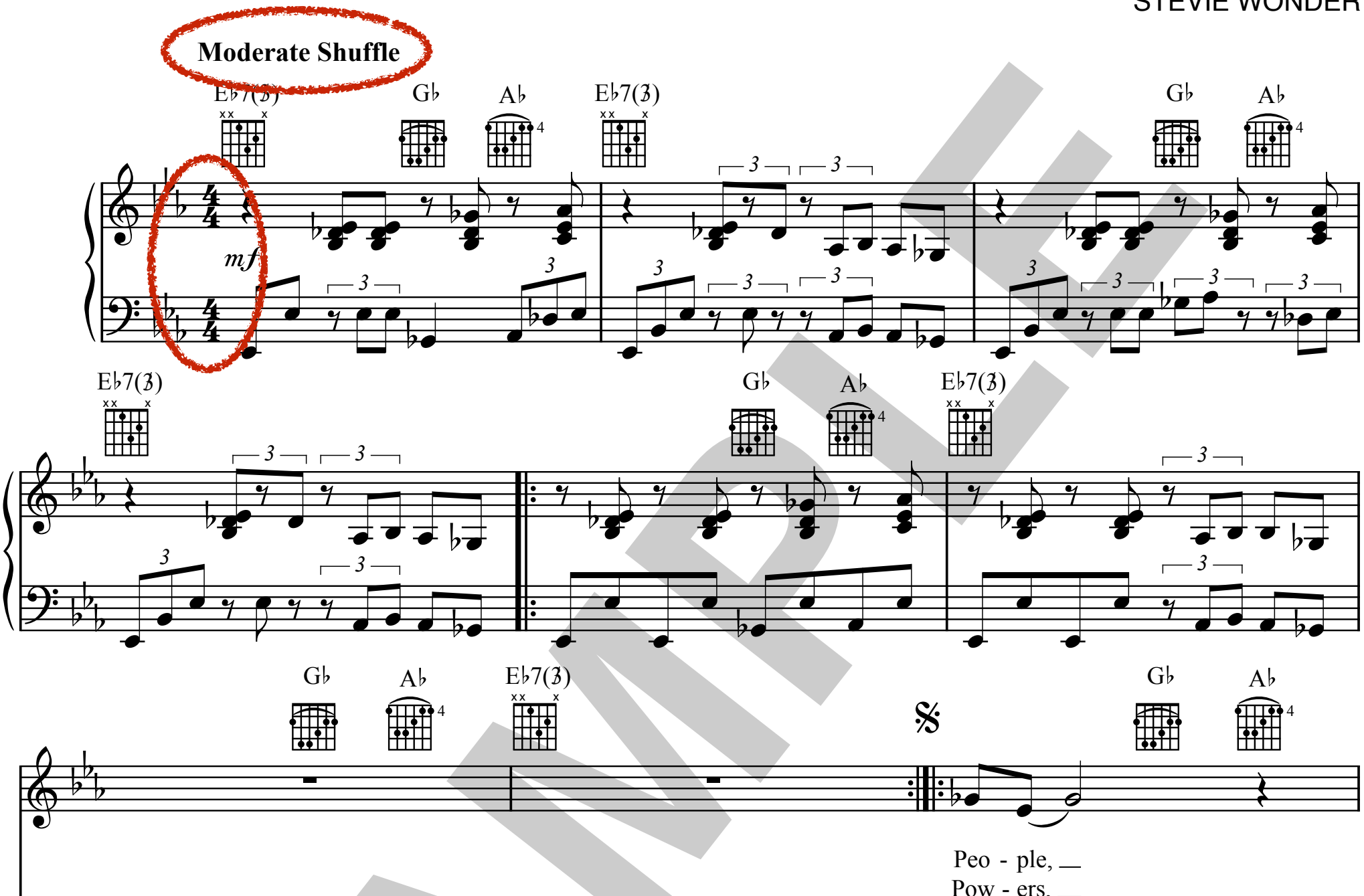
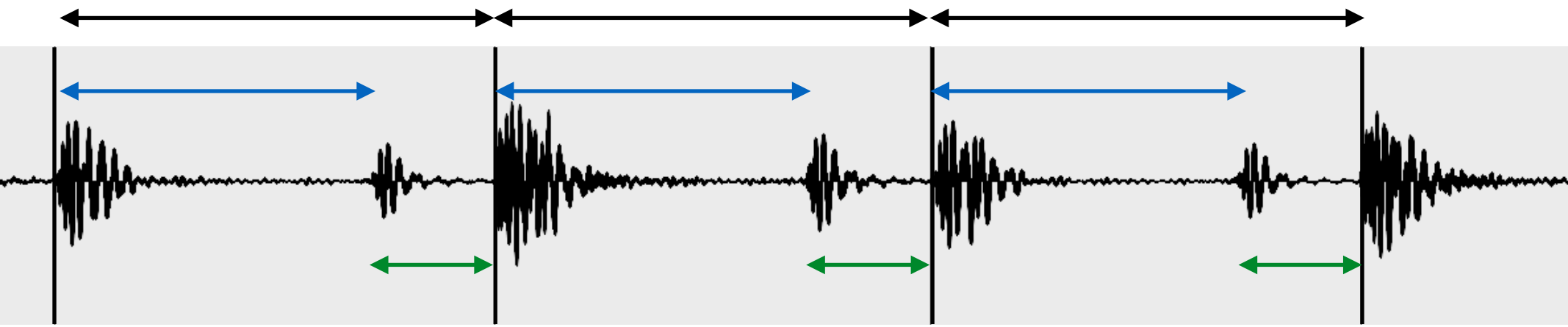


“Higher Ground” (Stevie Wonder, 1973)

Beat length ~ 488 ms

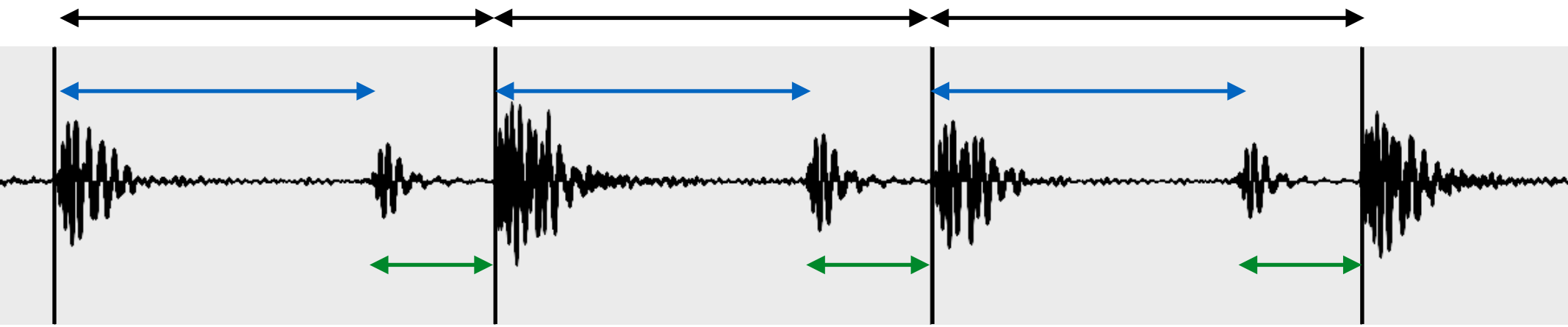


long-short ratio for compound meter = 325 ms : 163 ms

(2 : 1)

“Higher Ground” (Stevie Wonder, 1973)

Beat length ~ 488 ms



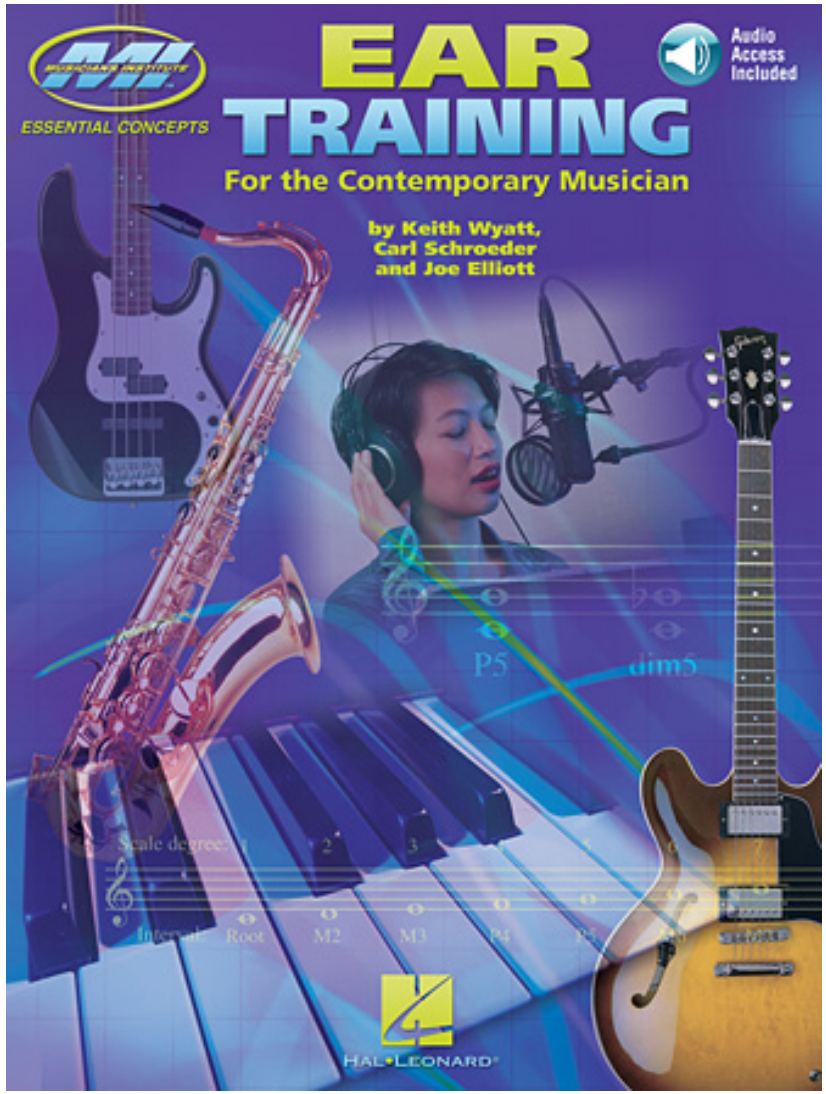
long-short ratio for compound meter = 325 ms : 163 ms

(2 : 1)

actual long-short ratio here = ~ 353 ms : ~ 135 ms

“Higher Ground” (Stevie Wonder, 1973)

“In popular music, compound meter is generally used only at slower tempos; when the tempo picks up, the triplet feeling is better defined as *shuffle* or *swing*.” (Wyatt, Schroeder, and Elliott, 2005, p. 77)



Meter Categorization Strategy

Kick / Snare = “Beat”

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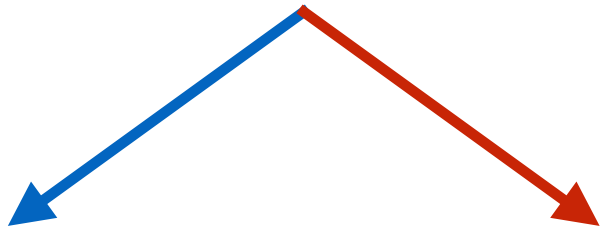

Divides into
2 equal parts

Does NOT divide
into 2 equal parts

(e.g., 6/8, 12/8, swing 8ths)

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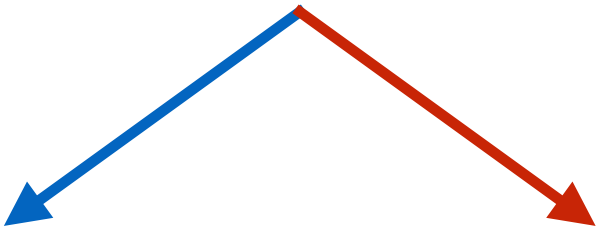

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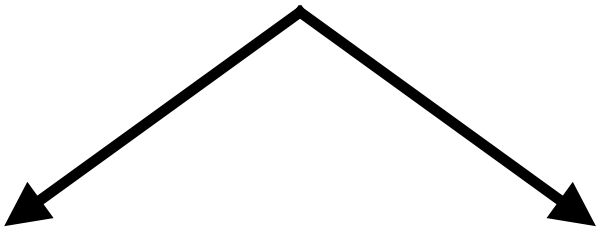

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(e.g., swing 16ths)

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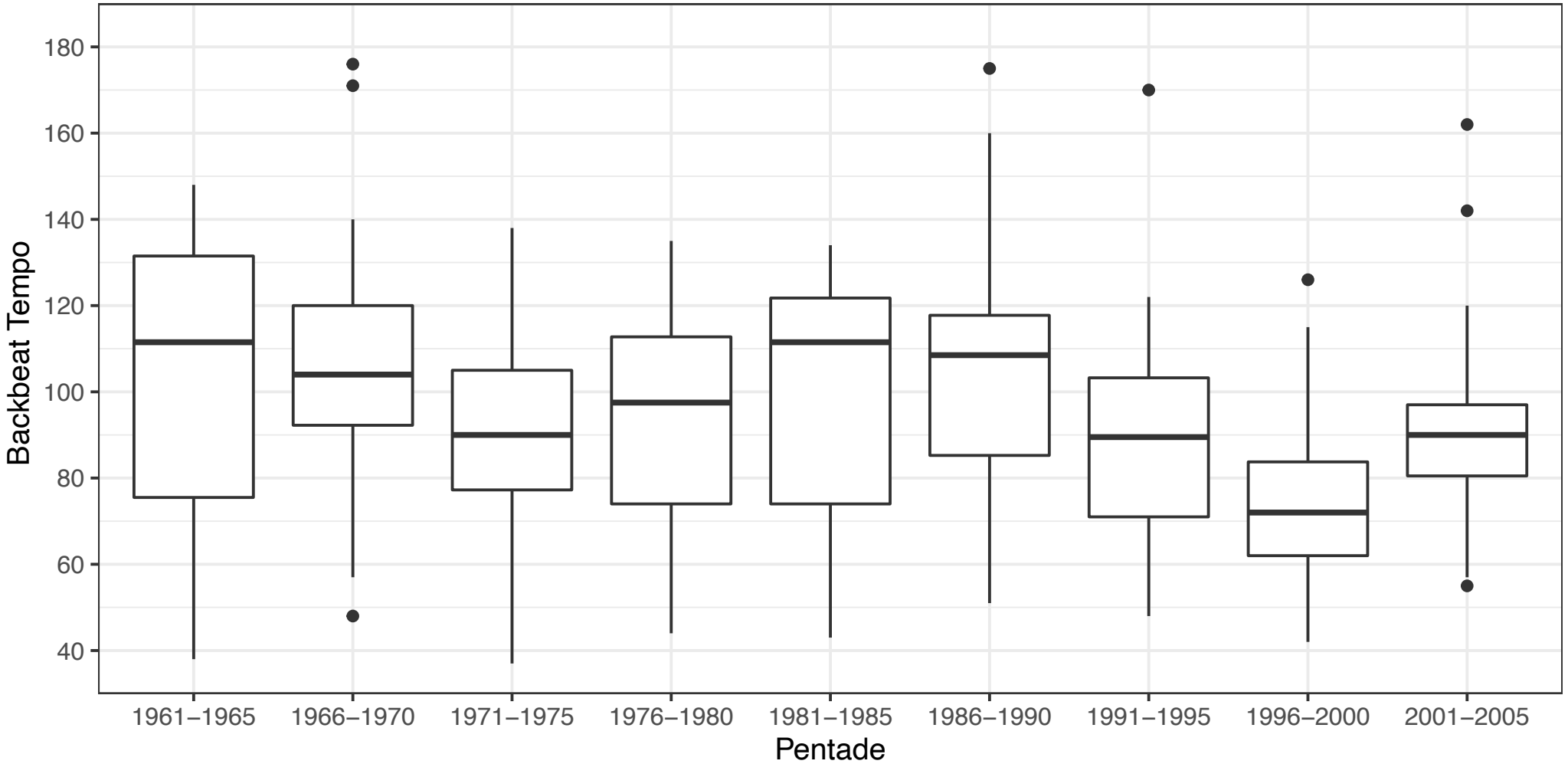
Average Kick-Snare Rates (in BPM) for all songs

Pentade	n	Median	Mean
1961-1965	50	112	104
1966-1970	50	104	106
1971-1975	50	90	92
1976-1980	50	98	94
1981-1985	50	112	101
1986-1990	50	109	105
1991-1995	50	90	89
1996-2000	50	72	74
2000-2005	50	90	90

Average Kick-Snare Rates (in BPM) for all songs



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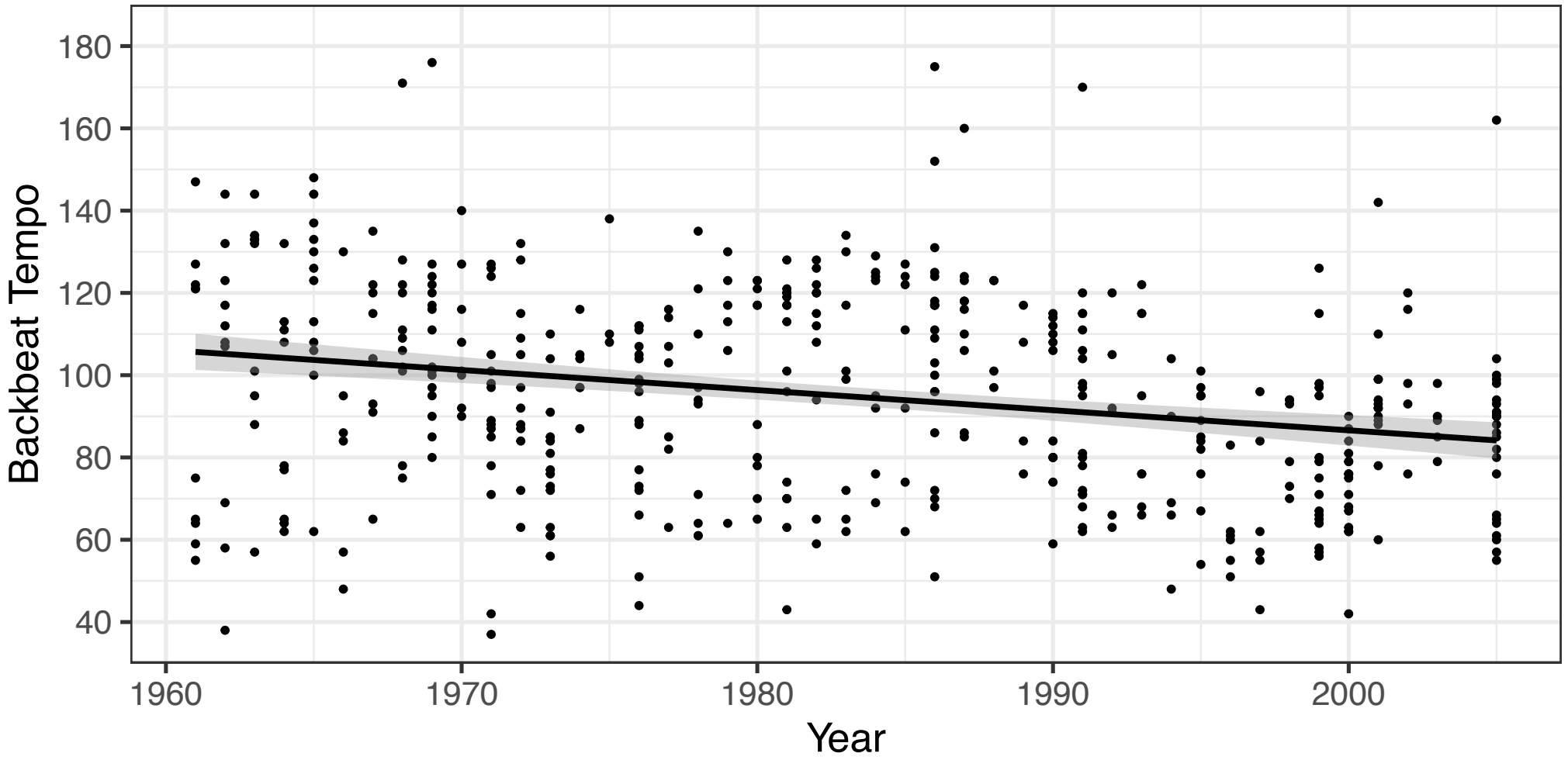
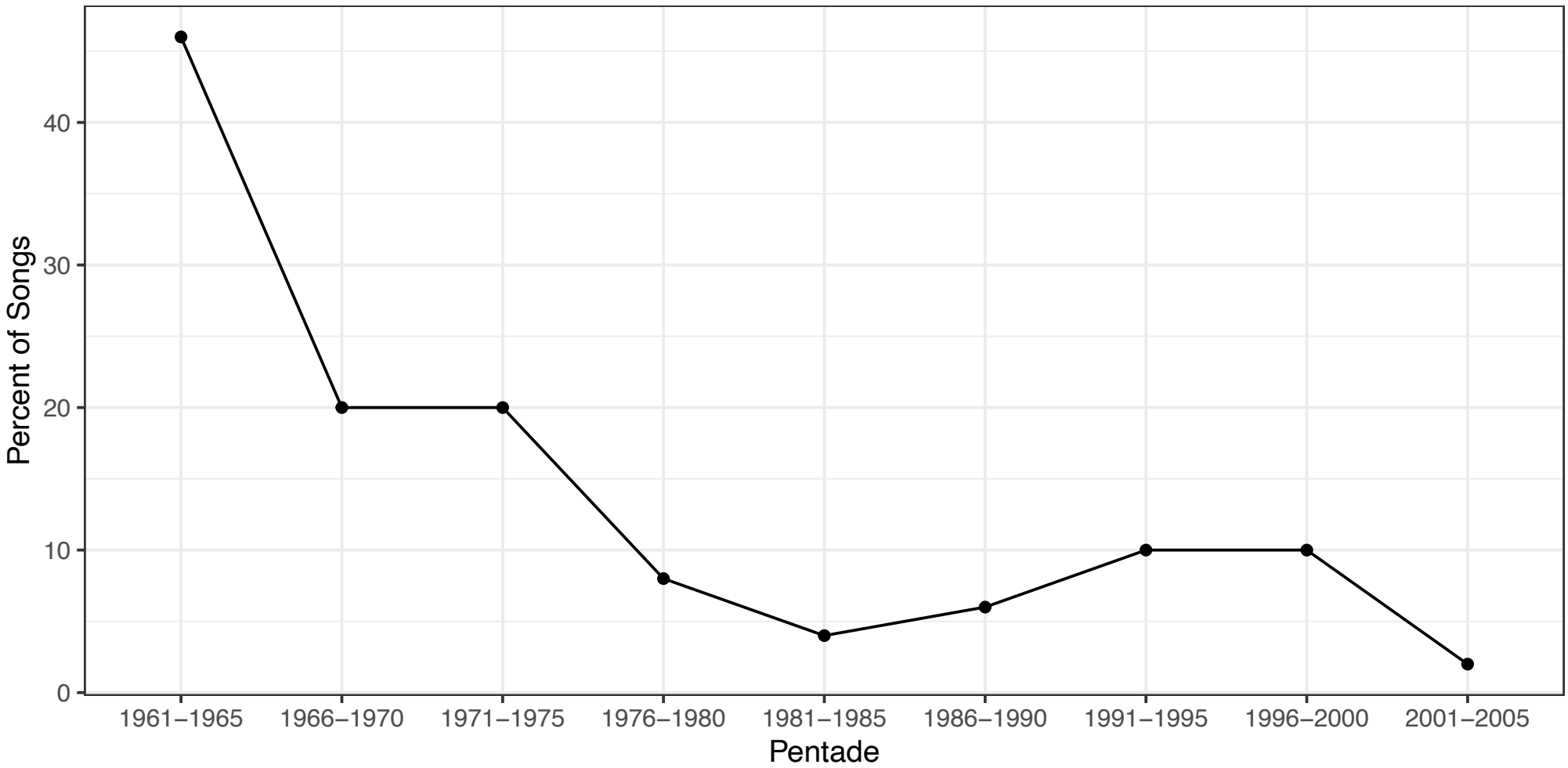


$p < .001, r^2 = .065$

Average Kick-Snare Rates (in BPM) for songs without duple 8ths

Pentade	n	Median	Mean
1961-1965	23	75	91
1966-1970	10	91	93
1971-1975	10	62	69
1976-1980	4	63	60
1981-1985	2	82	82
1986-1990	3	123	138
1991-1995	5	68	94
1996-2000	5	60	66
2000-2005	1	91	91

Percent of songs without duple 8ths



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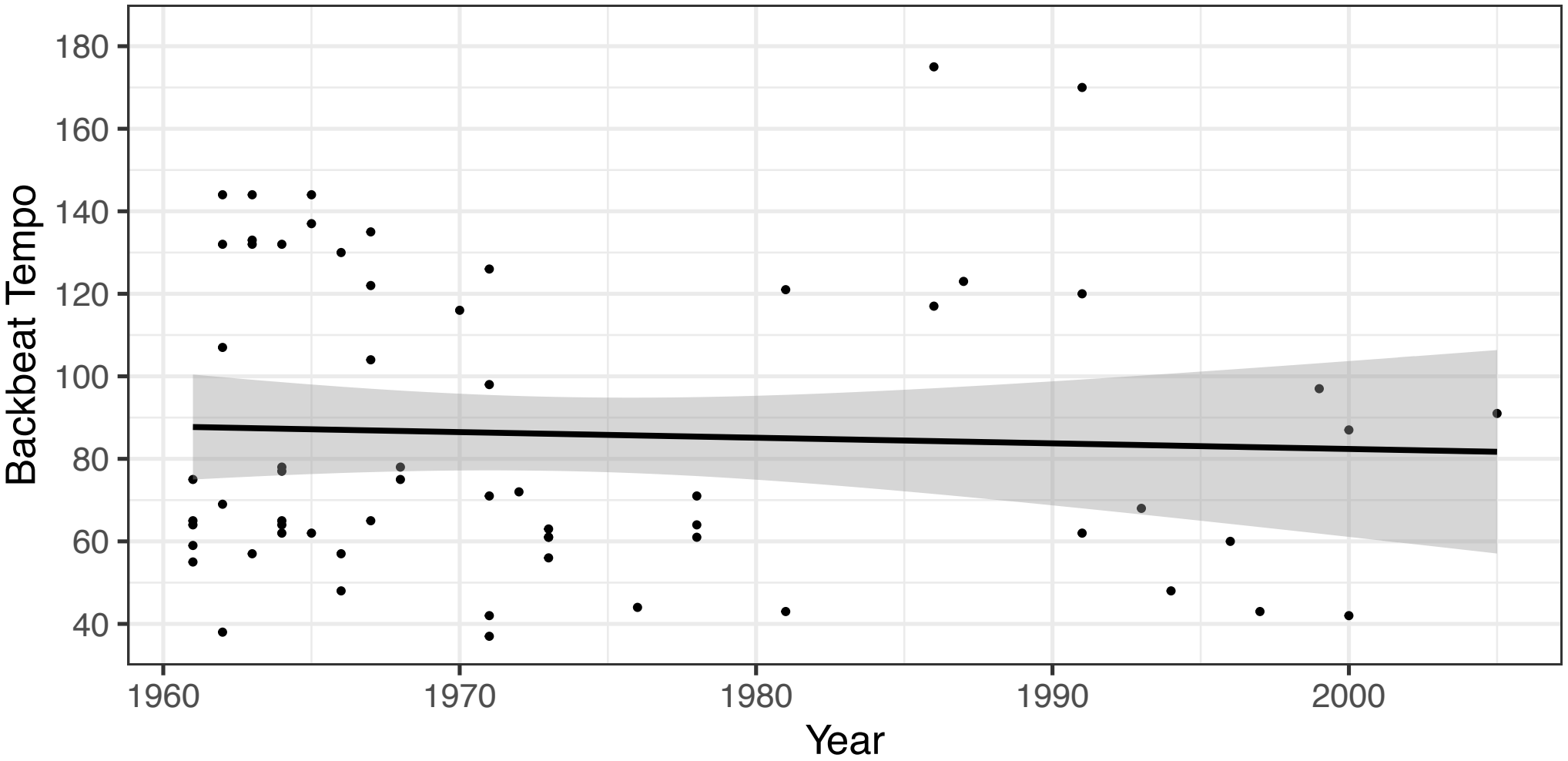
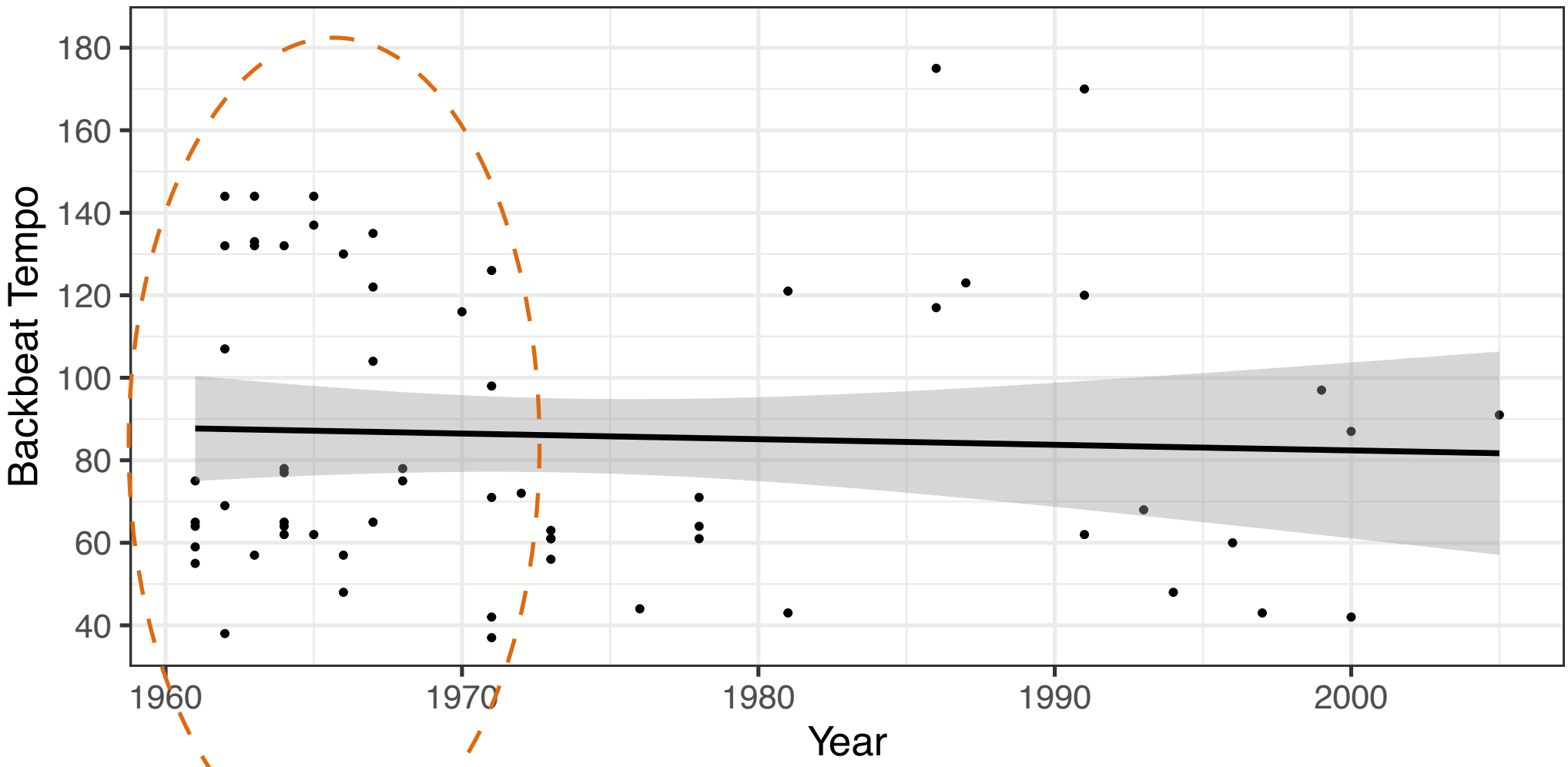


$p = .71, r^2 = .002$

Average Kick-Snare Rates (in BPM) for songs without duple 8ths



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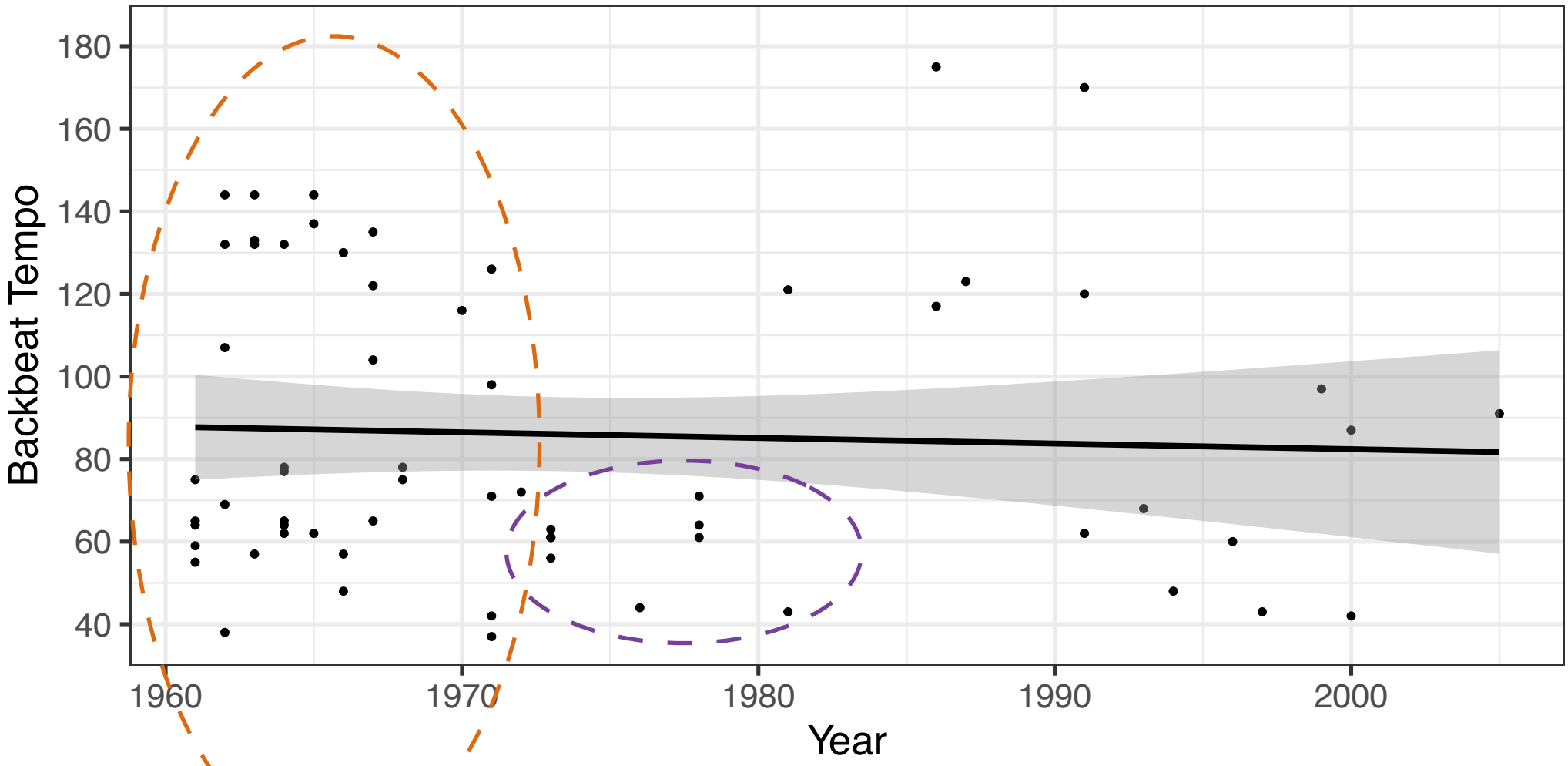

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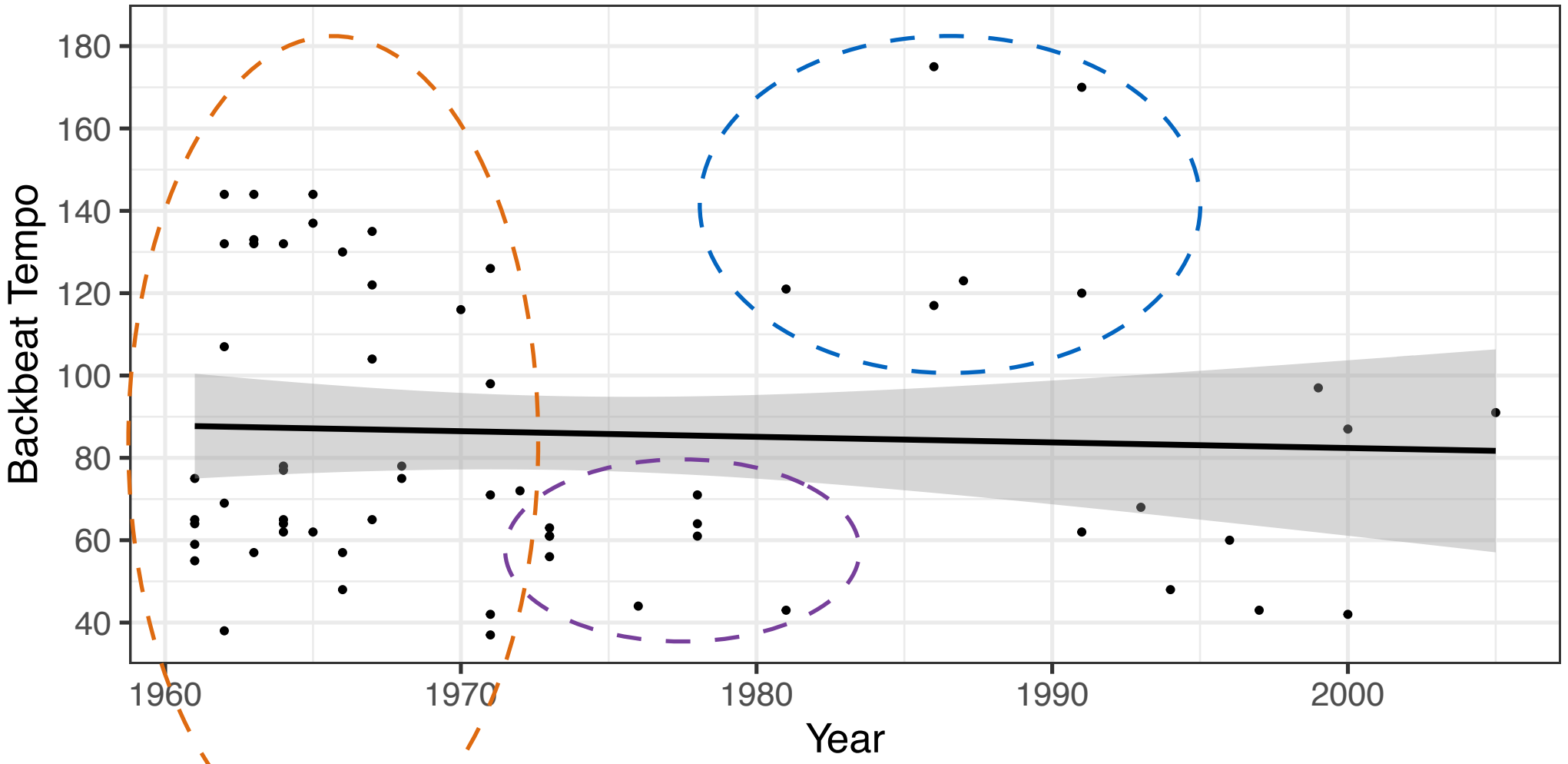

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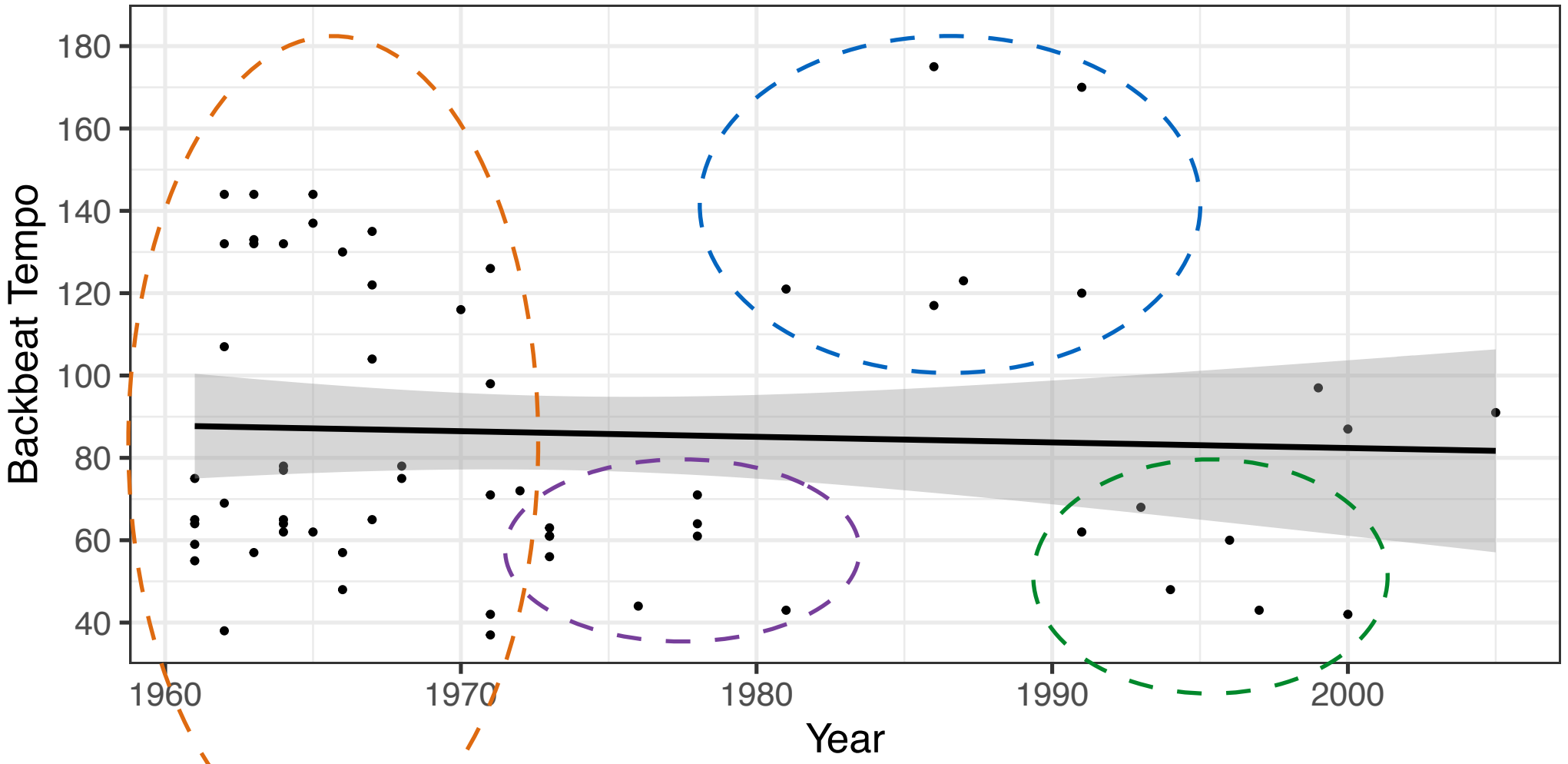
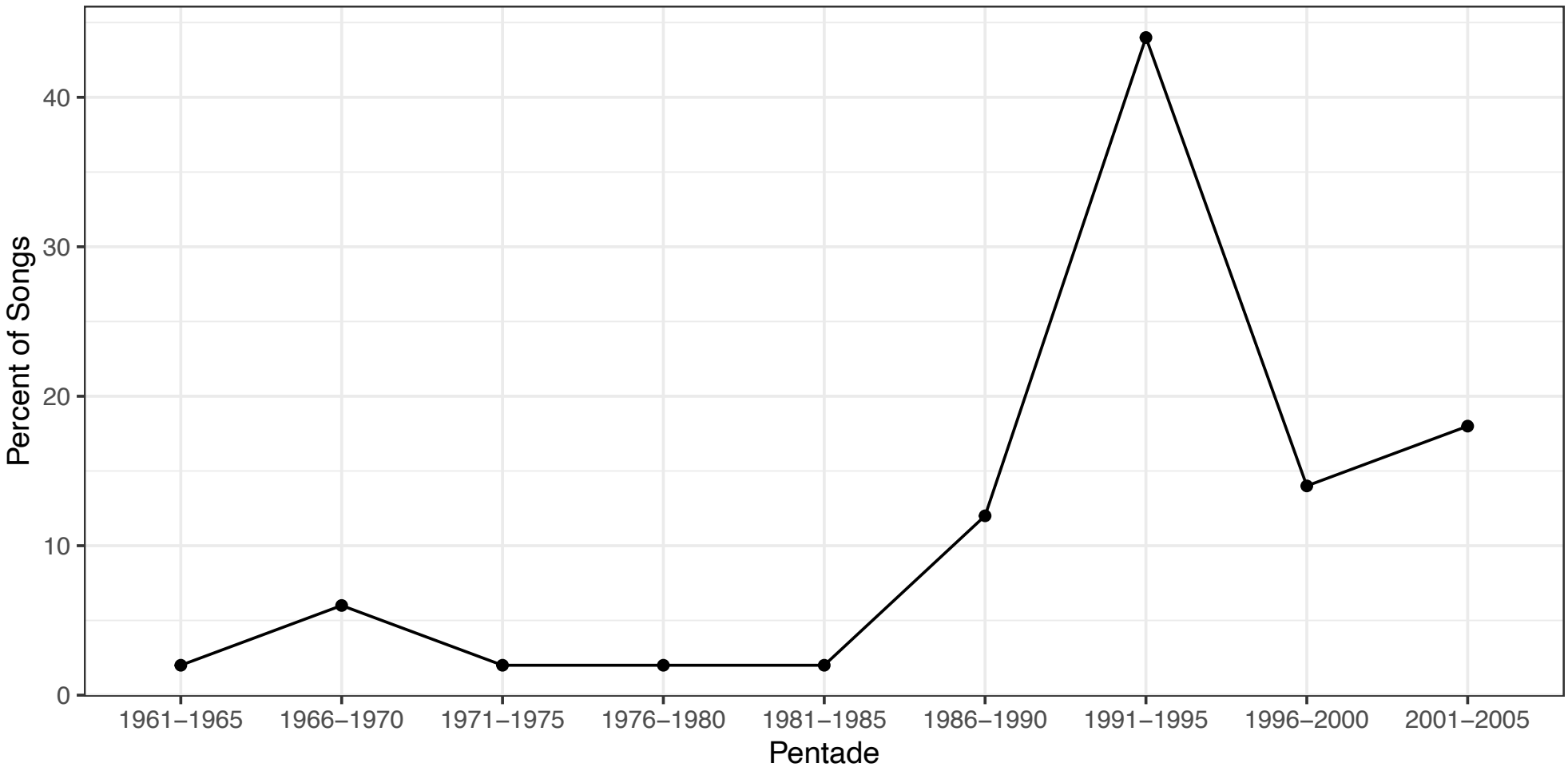
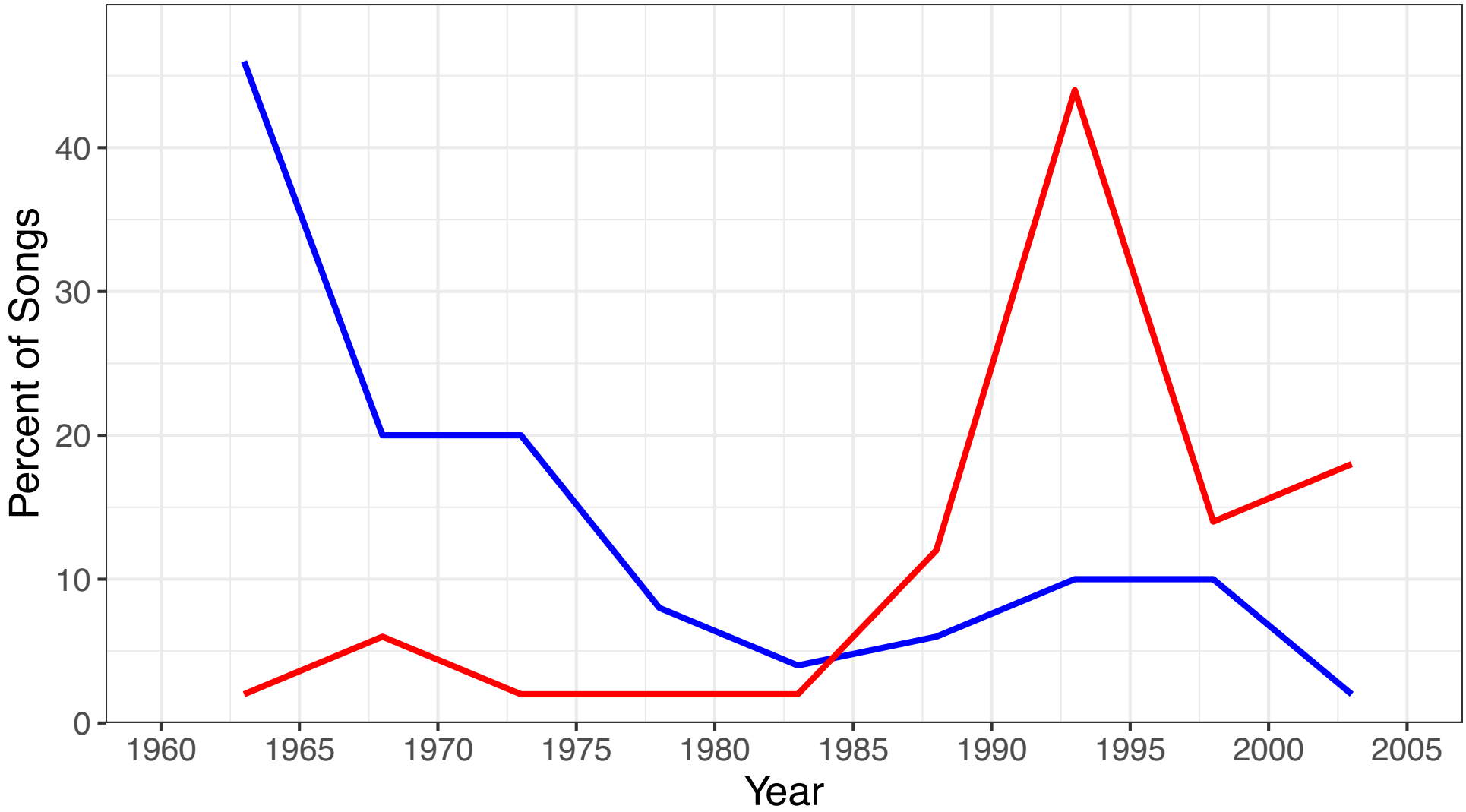


$p = .71, r^2 = .002$

Percent of songs with duple 8ths but without duple 16ths



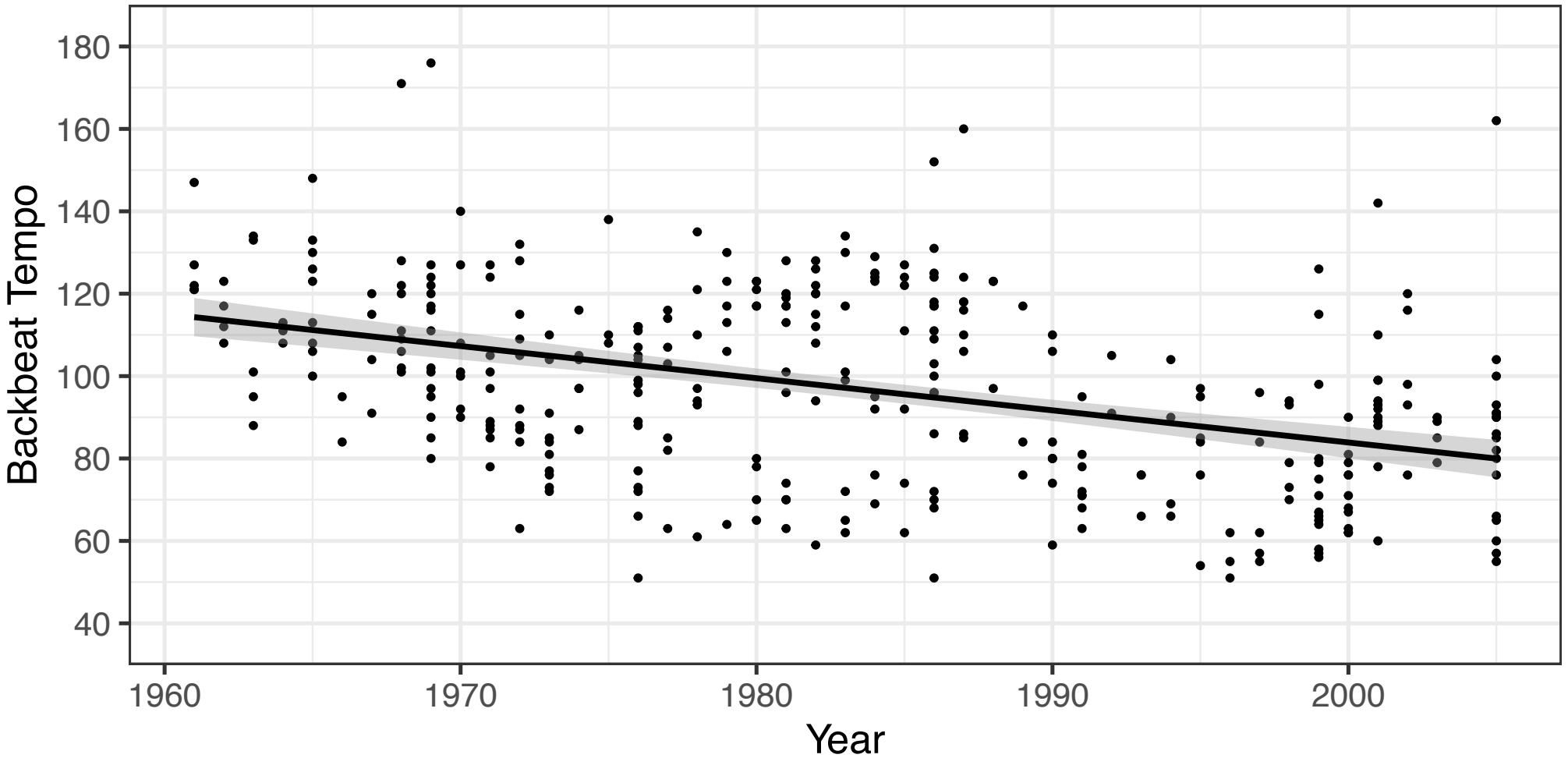
Songs without simple 8ths VS. songs with simple 8ths but without simple 16ths



Songs without simple 8ths

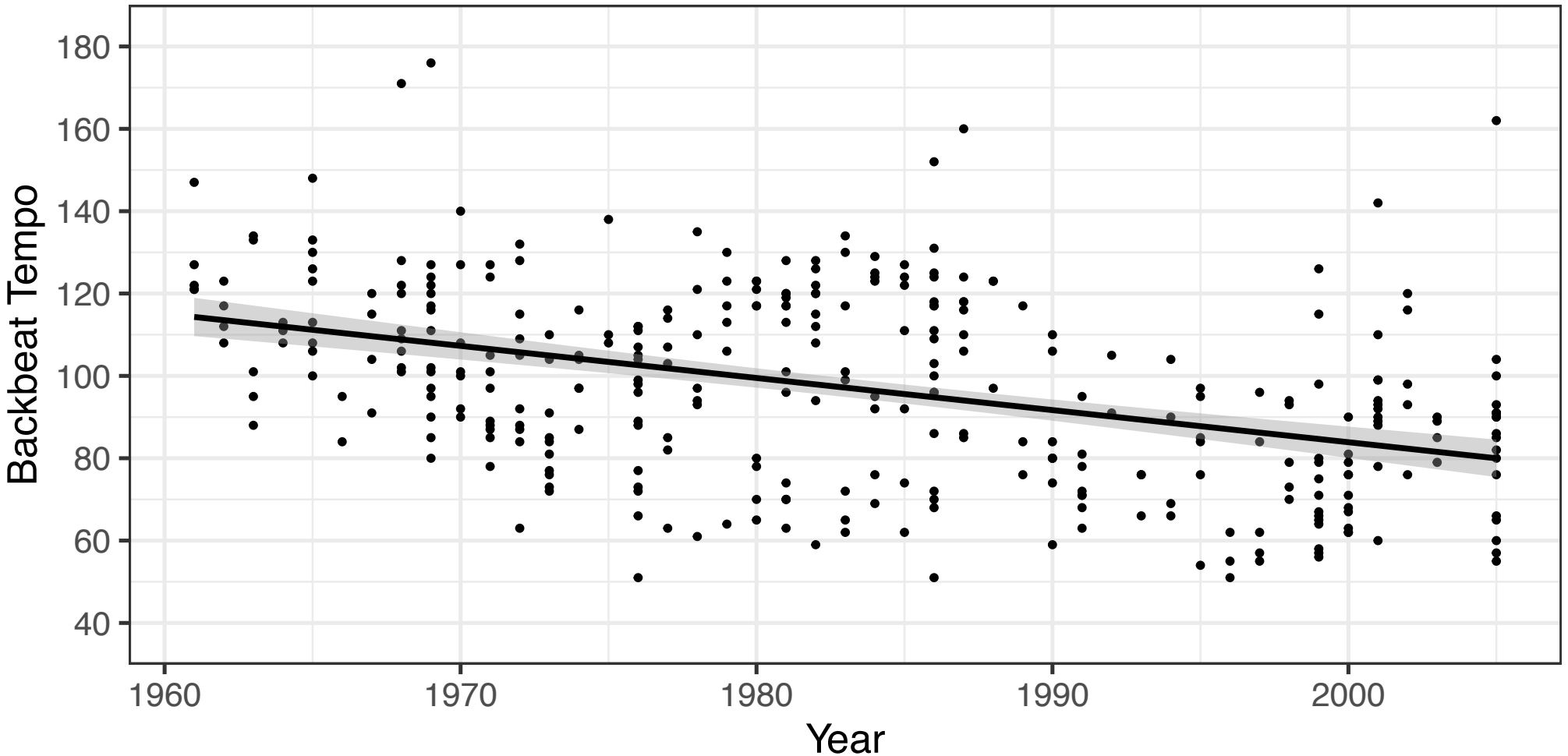
Songs with simple 8ths but without simple 16ths

Average Kick-Snare Rates (in BPM) for songs with duple 8ths and with duple 16ths



$p < .001, r^2 = .175$

Average Kick-Snare Rates (in BPM) for songs with duple 8ths and with duple 16ths



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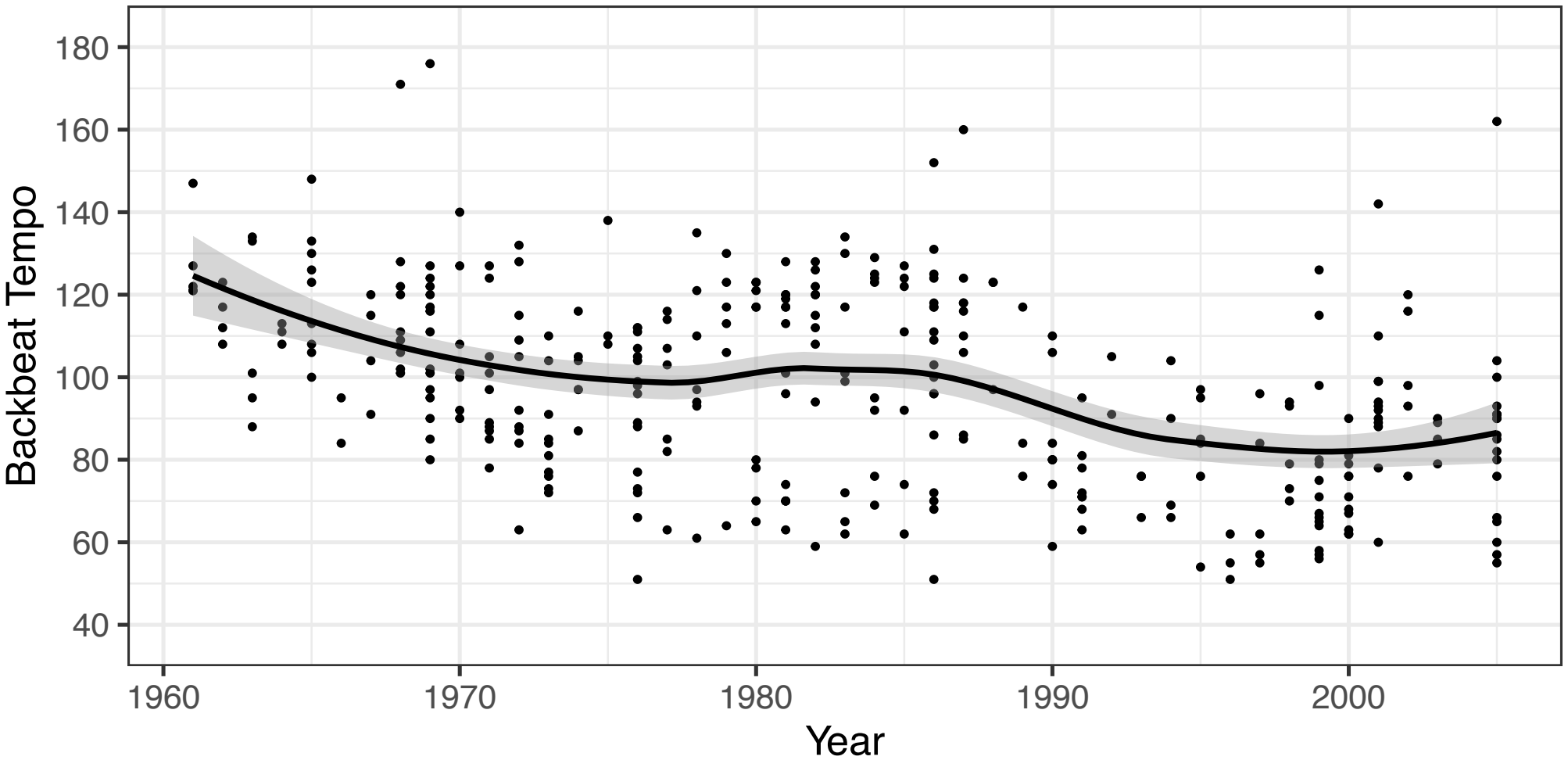
similar results as Schellenberg and von Scheve (2012)

Average Kick-Snare Rates (in BPM) for songs with duple 8ths and with duple 16ths



local polynomial regression (LOESS)

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“Touch” (Johnny Gill, 1996)

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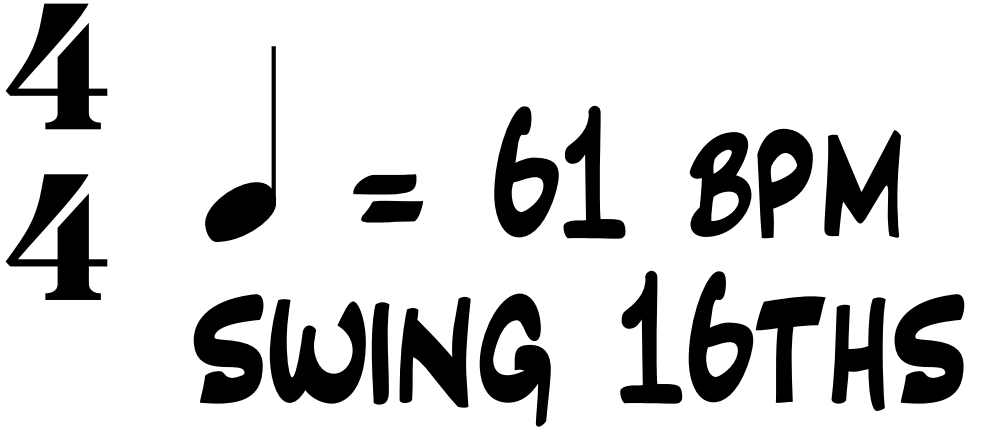
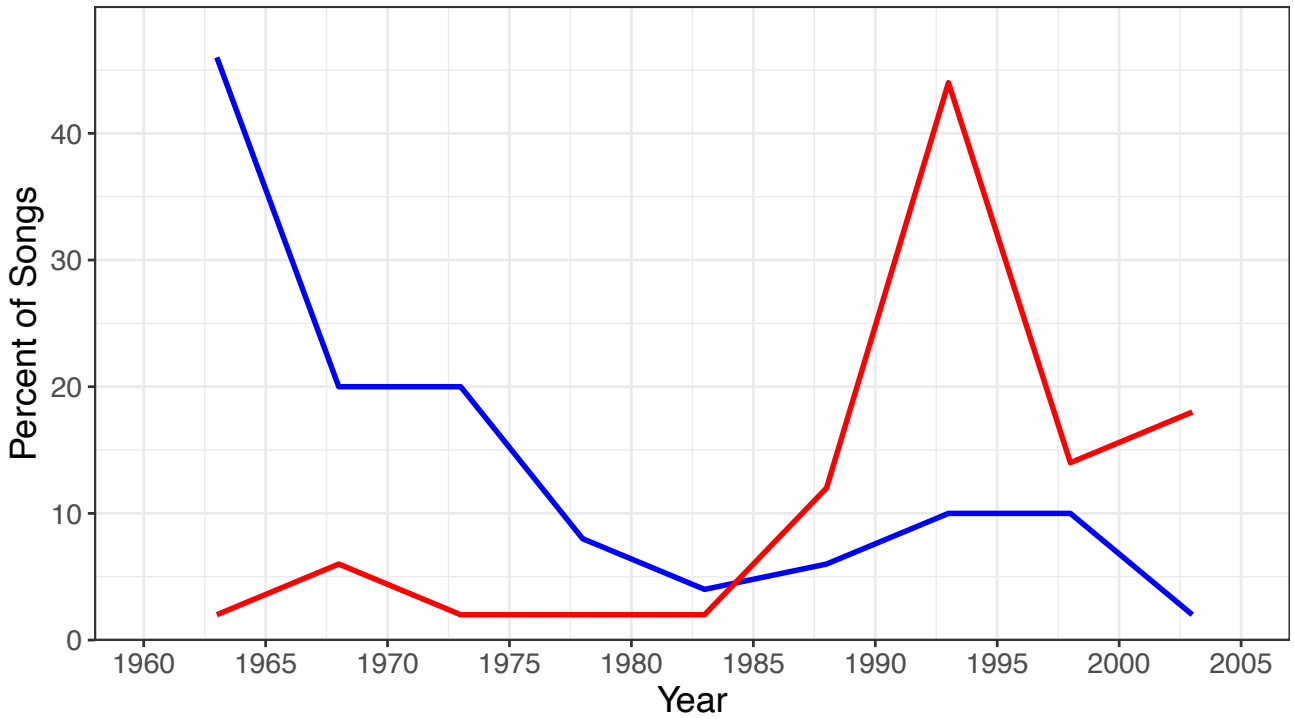


“Touch” (Johnny Gill, 1996)

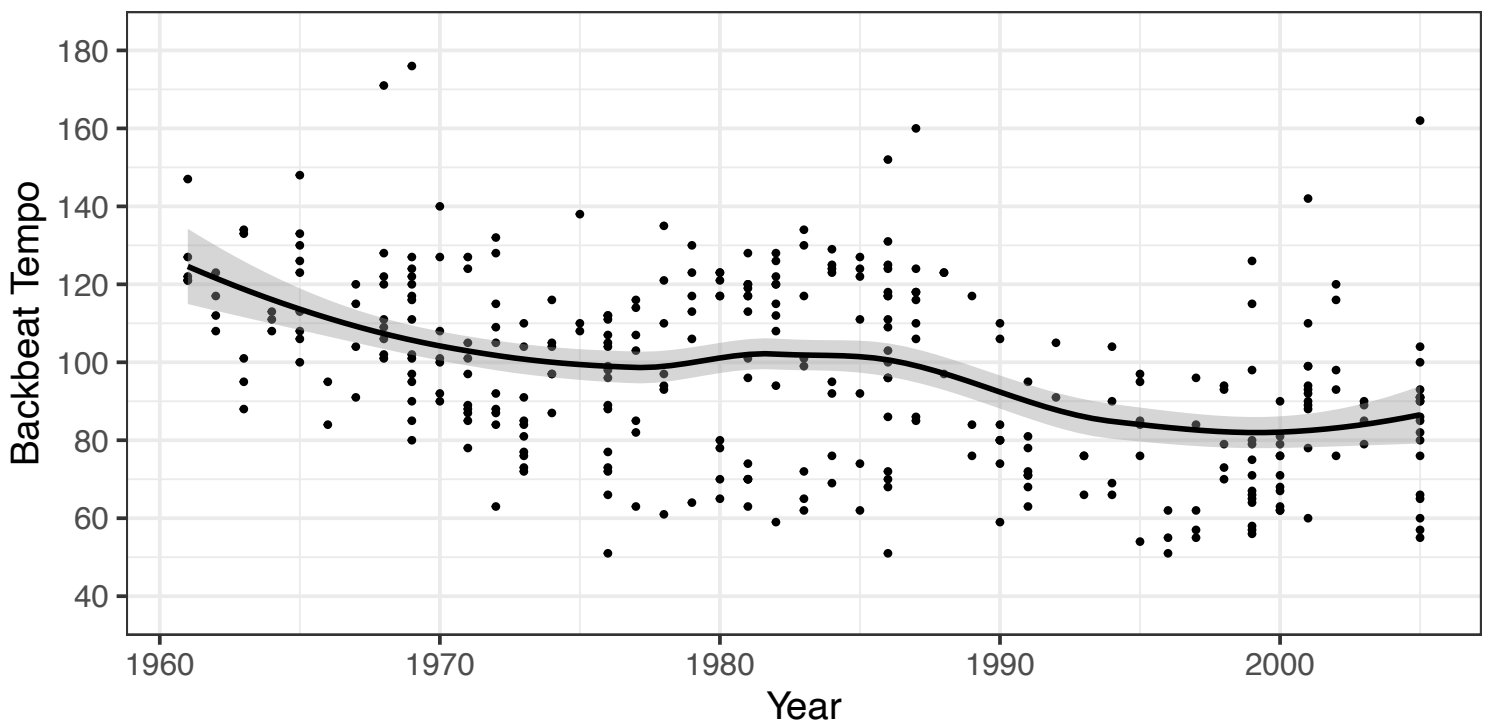
4/4 ♩ = 61 BPM
SWING 16THS

4/4 ♩ = 122 BPM
HALF-TIME FEEL
SWING 8THS



Songs without simple 8ths

Songs with simple 8ths but without simple 16ths



THANK YOU!

Select Bibliography:

Cohn, Richard. 2015. “Why We Don’t Teach Meter, and Why We Should.” *Journal of Music Theory Pedagogy*. 29, 5–22.

Danielsen, Anne. 2010. “Here, There, and Everywhere: Three Accounts of Pulse in D’Angelo’s ‘Left and Right’.” In *Musical Rhythm in the Age of Digital Reproduction,* ed. Anne Danielsen, 19–36. Farnham: Ashgate.

Danielsen, Anne. 2015. “Metrical Ambiguity or Microrhythmic Flexibility?: Analysing Groove in ‘Nasty Girl’ by Destiny’s Child.” In *Song Interpretation in 21st-Century Pop Music*, ed. Ralf von Appen, André Doehring, Dietrich Helms, and Allan Moore, 53–71. Farnham: Ashgate.

Danielsen, Anne. 2019. “Pulse as Dynamic Attending: Analysing Beat Bin Metre in Neo Soul Grooves.” In *The Routledge Companion to Popular Music Analysis: Expanding Approaches*, ed. Ciro Scotto, Kenneth Smith, and John Brackett, 179–189. New York: Routledge.

de Clercq, Trevor. 2016. “Measuring a Measure: Absolute Time as a Factor for Determining Bar Lengths and Meter in Pop/Rock Music.” *Music Theory Online* 22 (3).

de Clercq, Trevor. 2017. “Swing, Shuffle, Half Time, Double: Beyond Traditional Time Signatures in the Classification of Meter in Pop/Rock Music.” In *Coming of Age: Teaching and Learning Popular Music in Academia*, ed. Carlos X. Rodriguez, 139–167. Ann Arbor, MI: Maize Books.

de Clercq, Trevor. 2020. “Rhythmic Influence in the Rock Revolution.” In *The Cambridge Companion to Rhythm,* ed. Russell Hartenberger and Ryan McClelland, 182–195. Cambridge: Cambridge University Press.

Moore, Allan. 2001. *Rock: The Primary Text: Developing a Musicology of Rock*. 2nd ed. Aldershot, UK: Ashgate.

Moore, Allan. 2012. *Song means: Analysing and interpreting recorded popular song*. Aldershot, UK: Ashgate.

Ellis, Paul. 2010. *The Essential Guide to Effect Sizes: Statistical Power, Meta-Analysis, and the Interpretation of Research Results*. Cambridge: Cambridge University Press.

Schellenberg, E. Glenn and Christian von Scheve. 2012. “Emotional Cues in American Popular Music: Five Decades of the Top 40.” *Psychology of Aesthetics, Creativity, and the Arts* 6 (3): 196-203.

Wyatt, Keith, Carl Schroeder, and Joe Elliott. 2005. *Ear Training for the Contemporary Musician*. Milwaukee, WI: Hal Leonard.