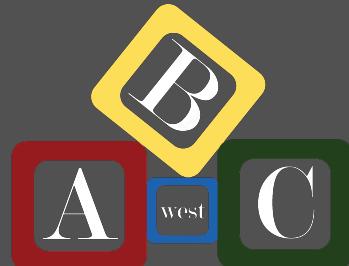




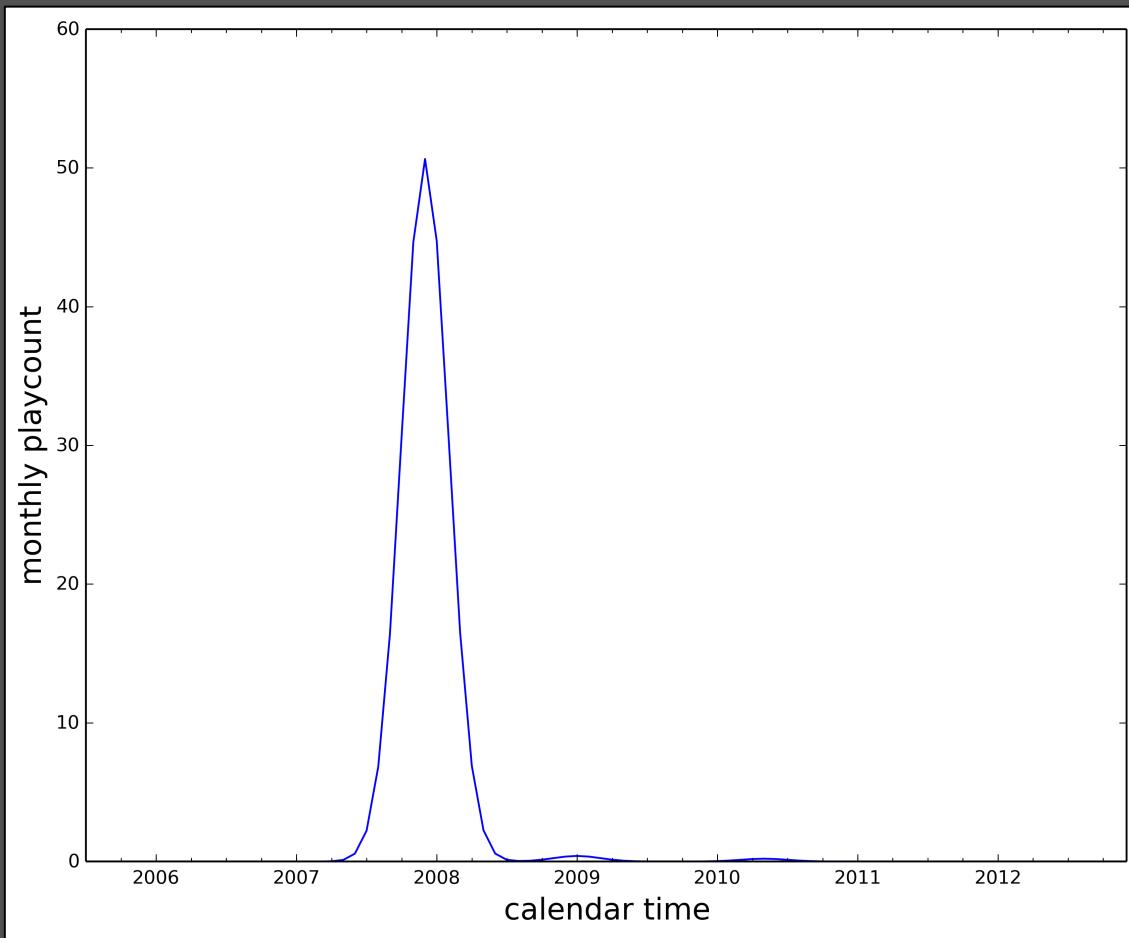
Identifying Canonical Music Listening Patterns on Last.fm

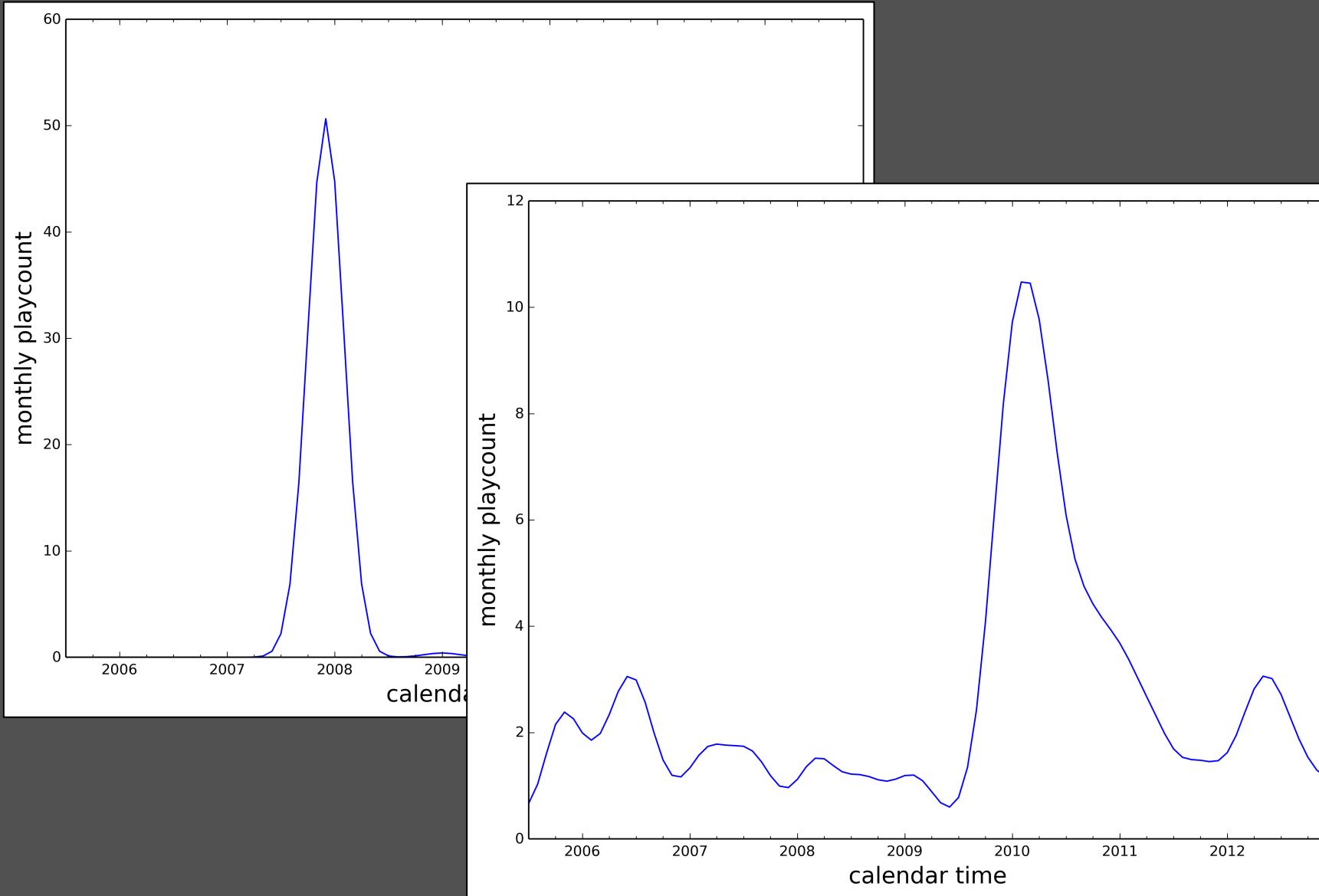


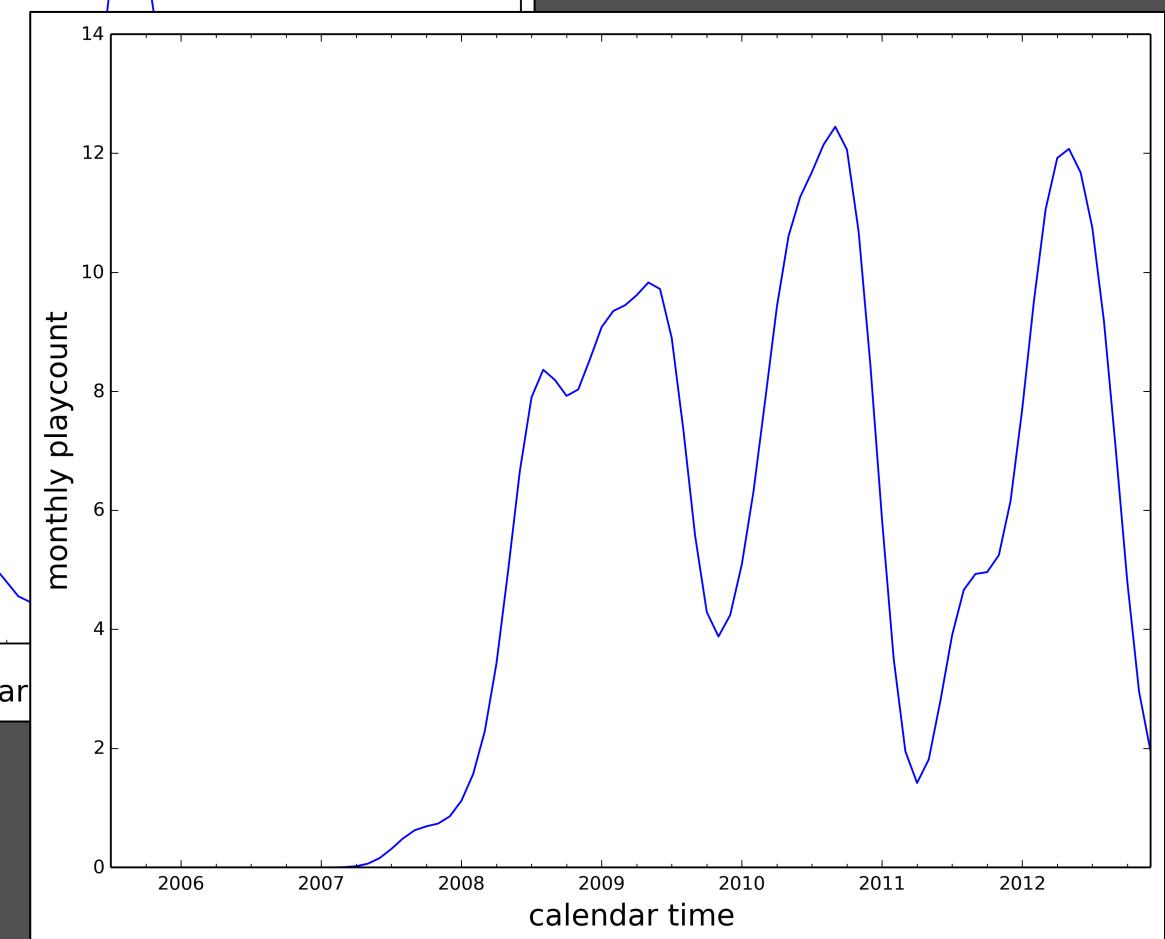
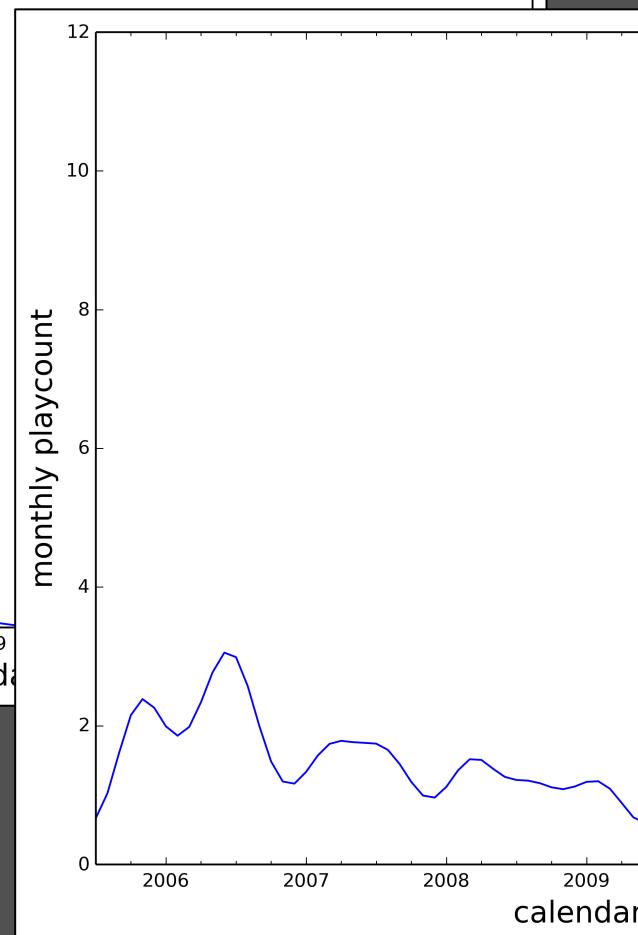
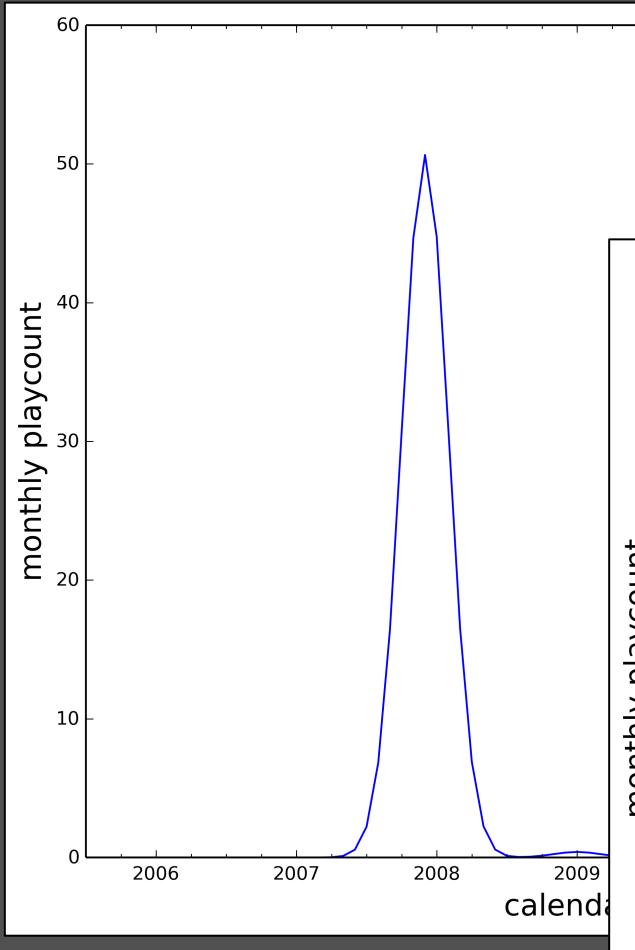
Jared Lorince and

Peter M. Todd

Do well-defined, “canonical” patterns of music listening exist, and how can we identify them?







Dataset

last.fm

Dataset

last.fm

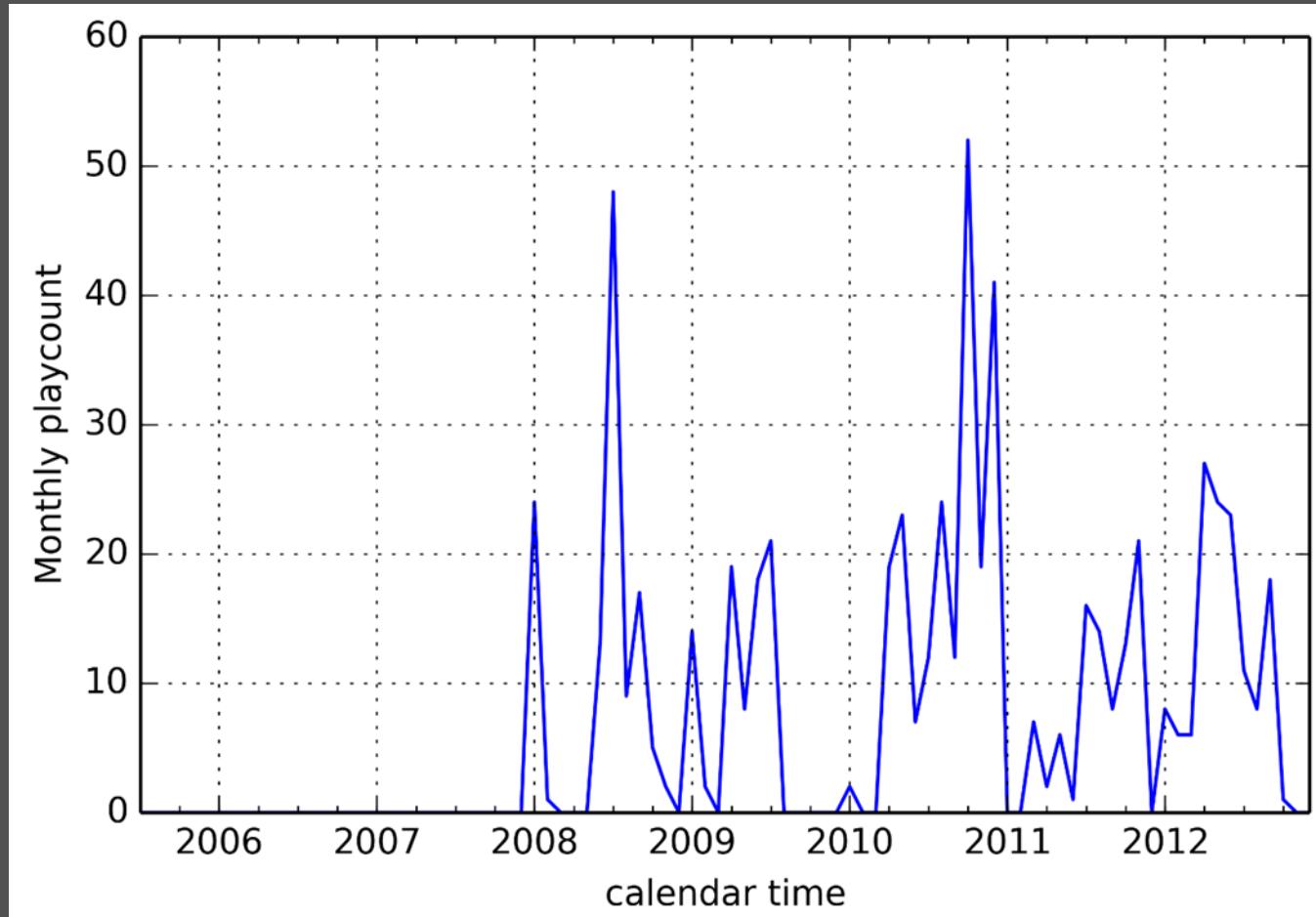
Total users	1,884,597
Friendship relations	24,320,919
Total annotations	50,372,895
Users with ≥ 1 annotation	521,780
Total unique tags	1,029,091
Unique items tagged	4,477,593
Total Scrobbles	1,181,674,857
Users with scrobbles recorded	73,251
Unique items scrobbled	32,864,795
Total loved tracks	162,788,213
Users with ≥ 1 loved track	1,355,859
Total banned tracks	23,321,347
Users with ≥ 1 banned track	502,758
Unique Groups	117,663
Users with ≥ 1 group membership	827,232

Dataset

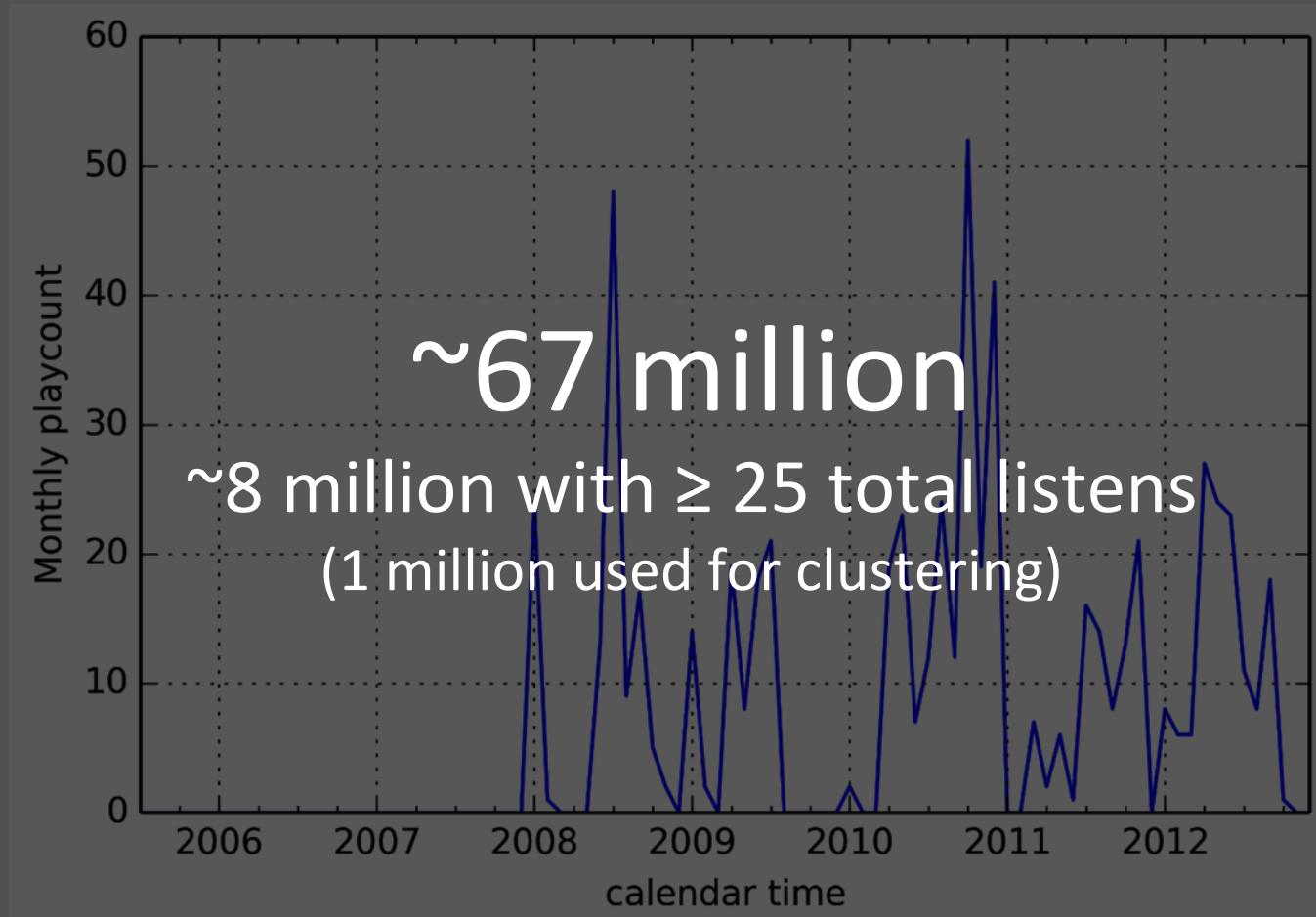
last.fm

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Dataset



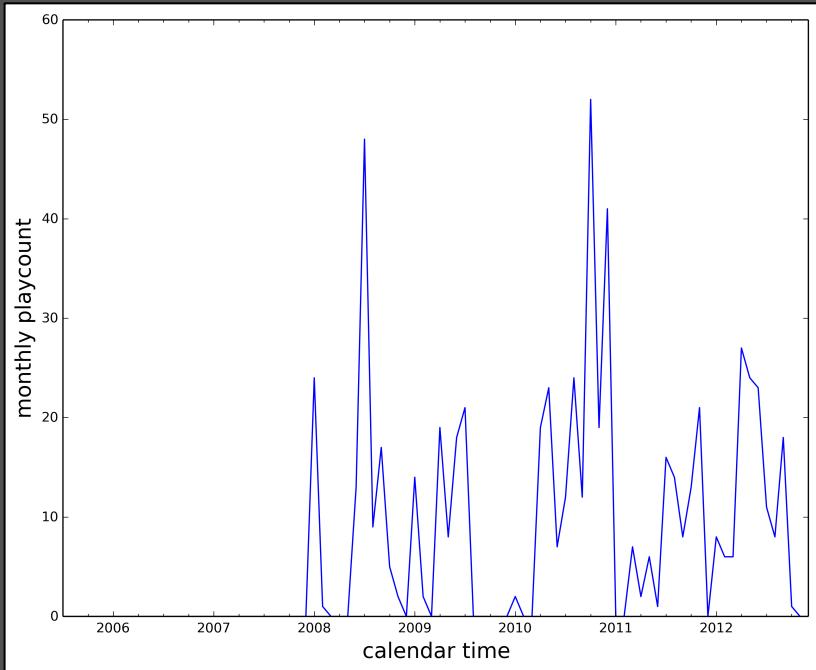
Dataset



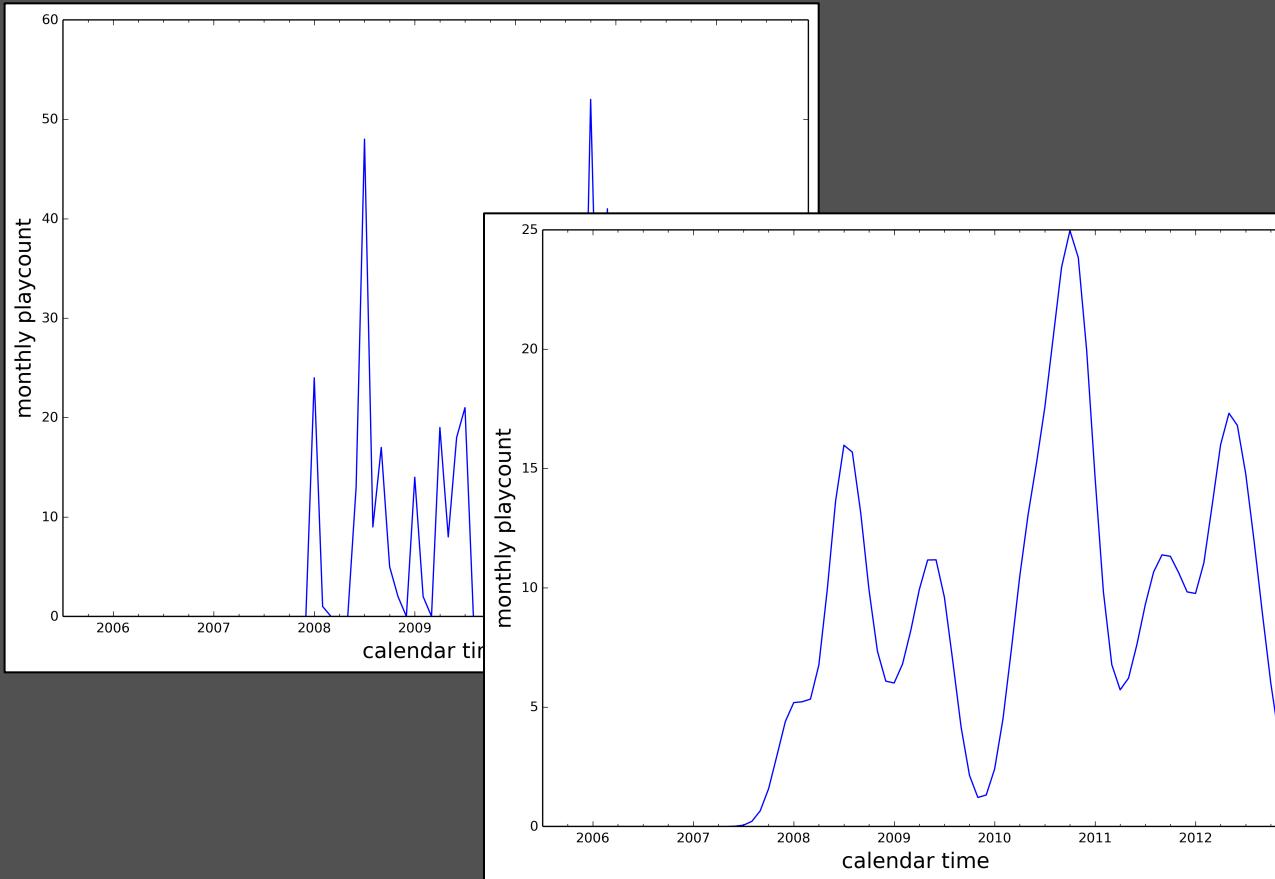
Our approach:
Apply k-means clustering to identify
clusters of similar listening patterns

Clustering process

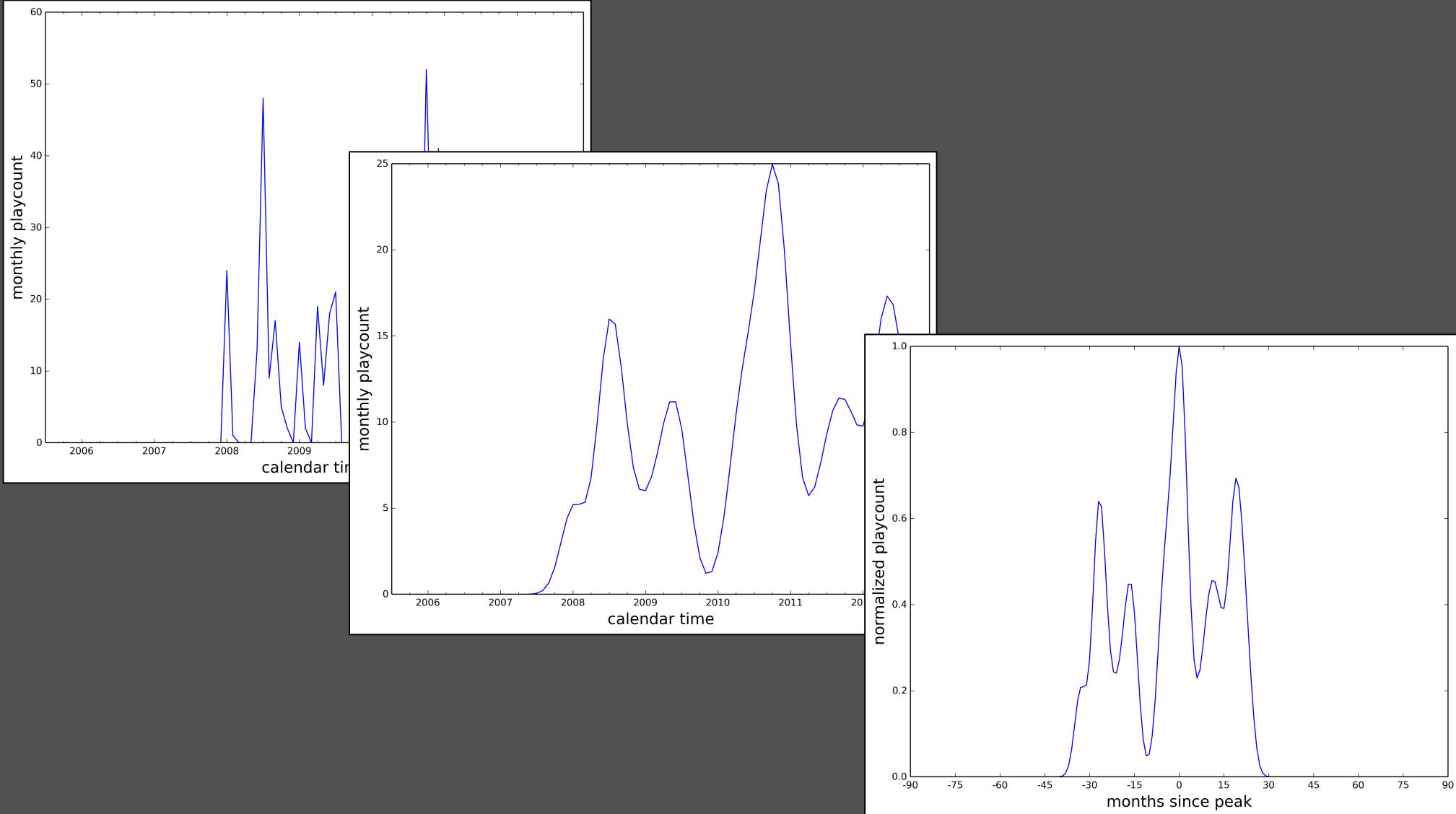
Clustering process



Clustering process

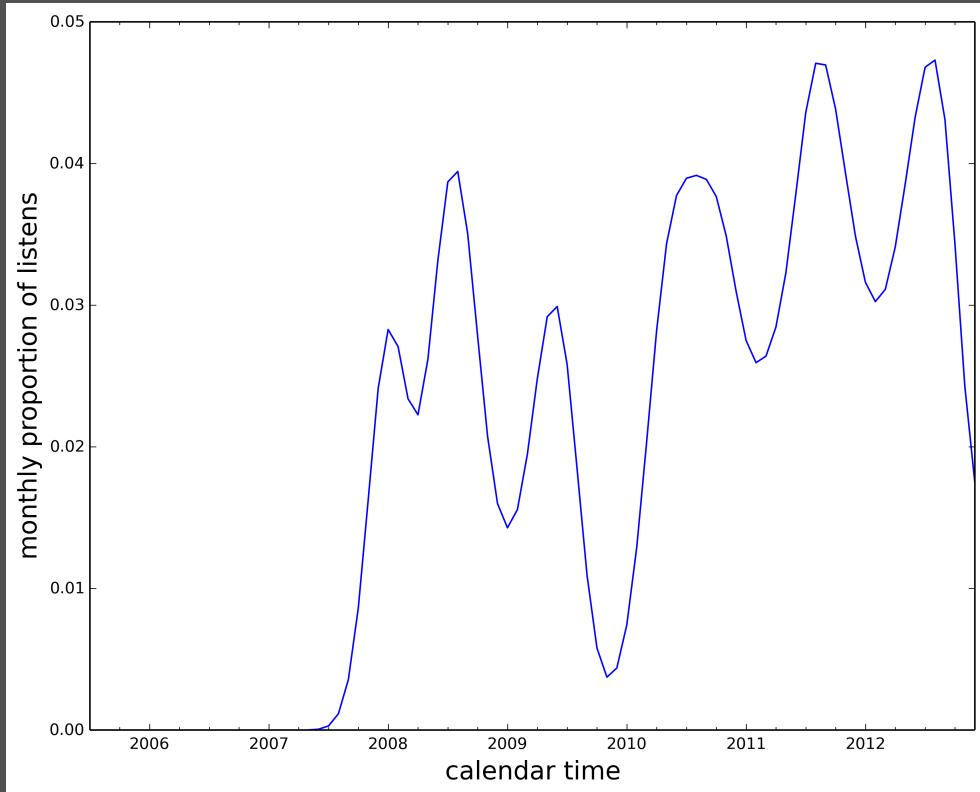


Clustering process

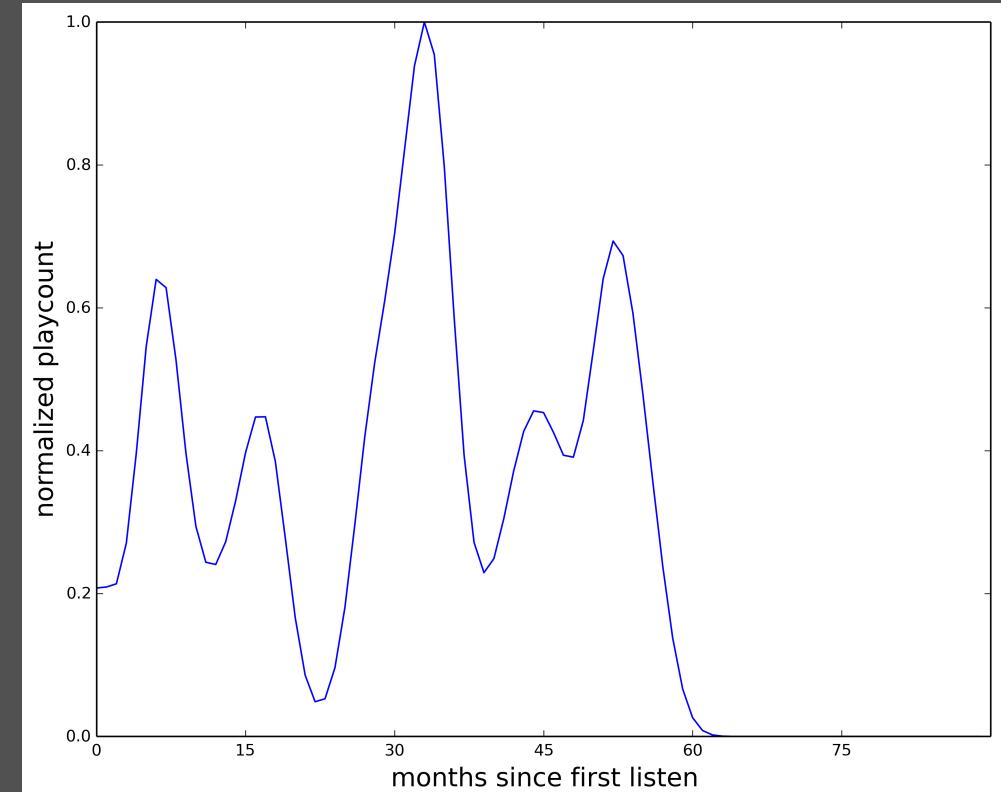


Clustering process

Alternative Transformations:

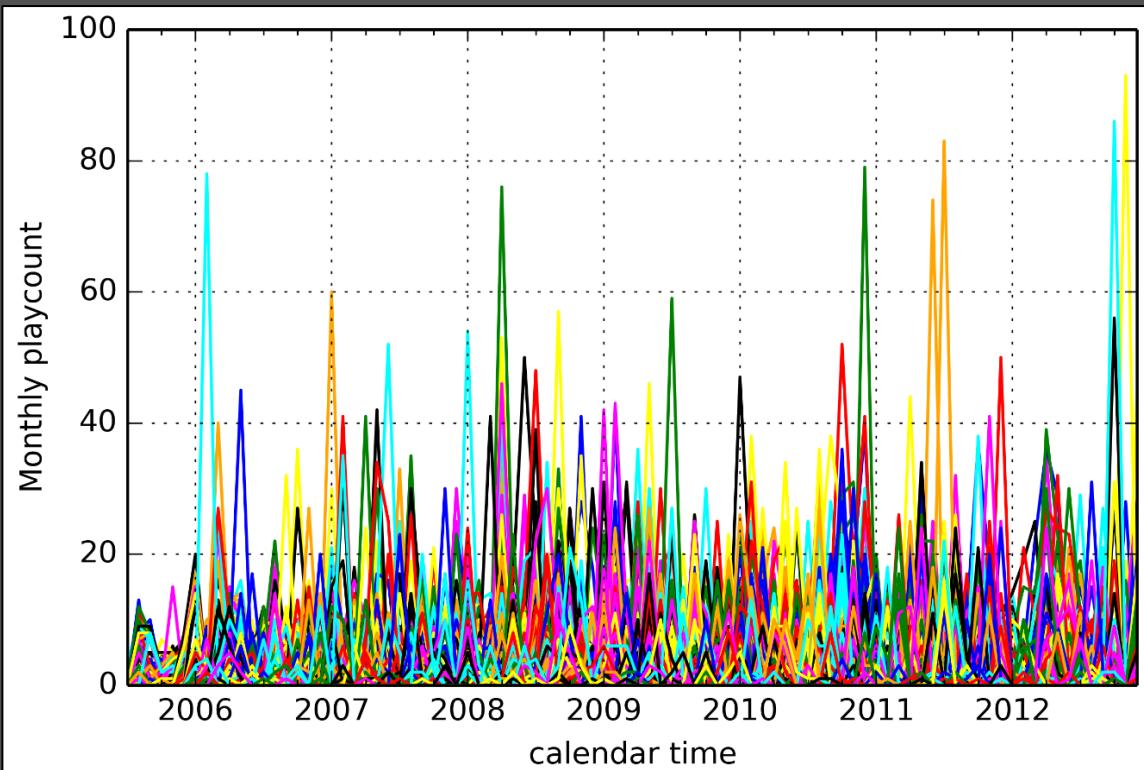


Monthly listening proportion
(instead of raw play count)

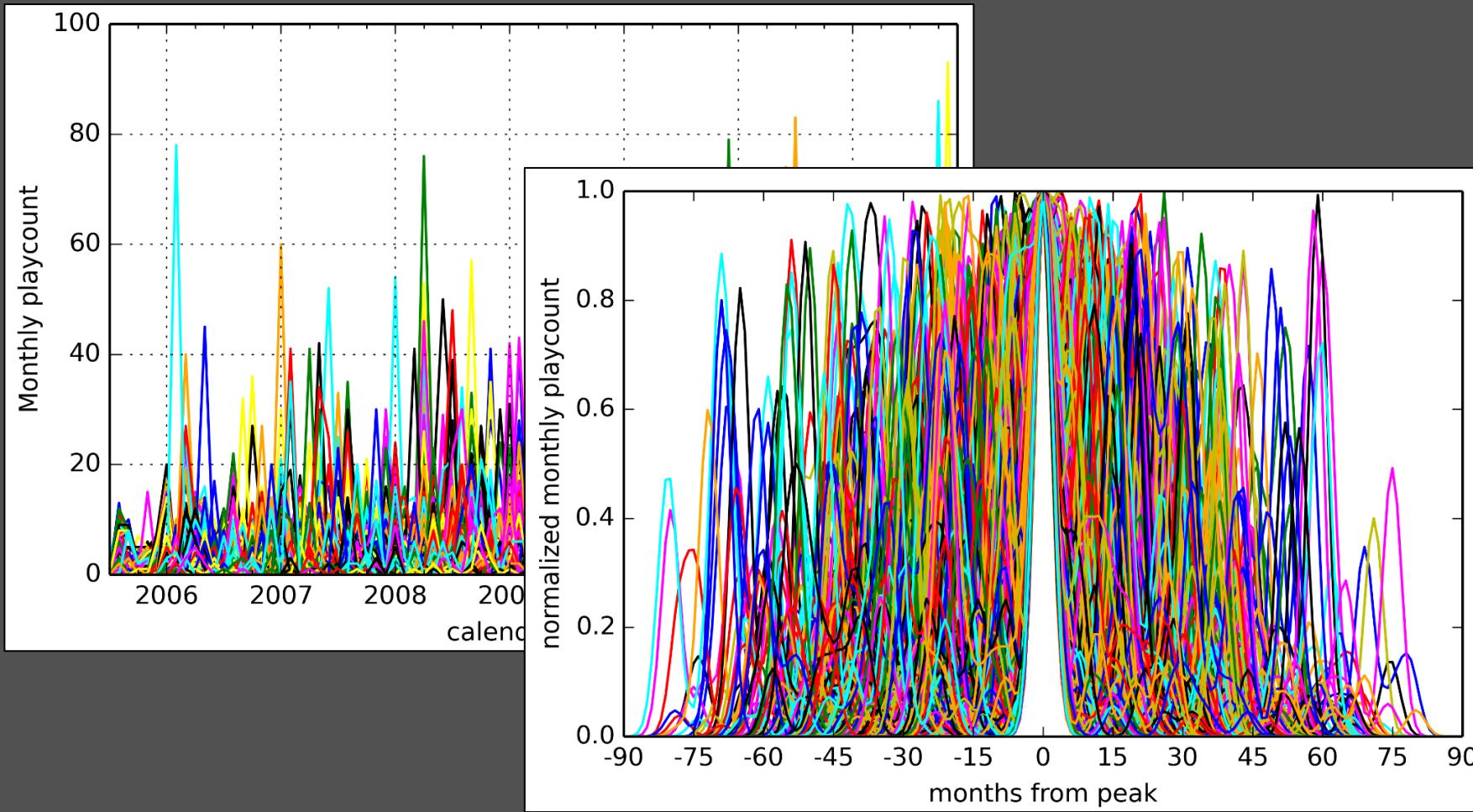


Alignment to first listen
(instead of to peak)

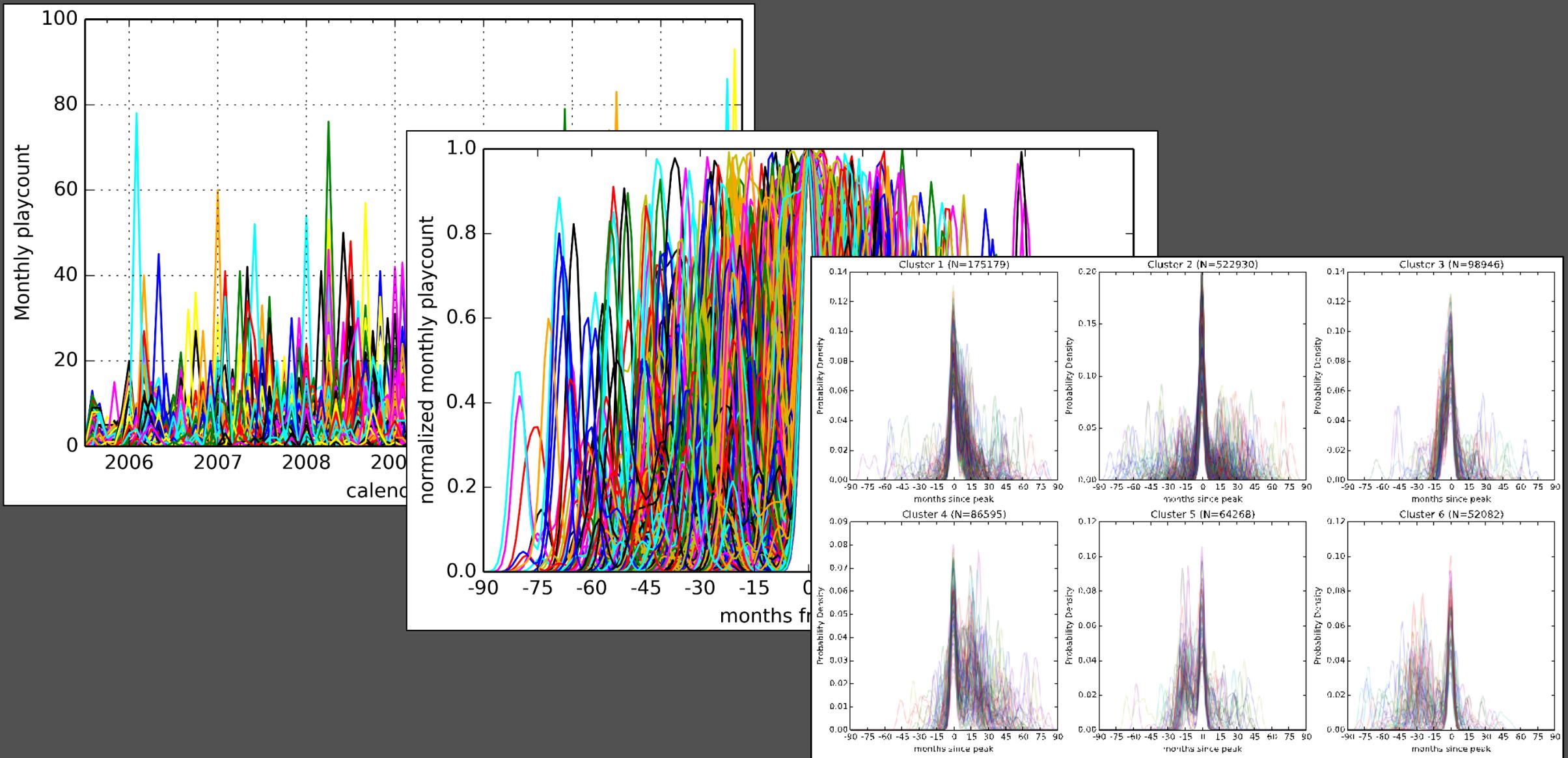
Clustering process



Clustering process



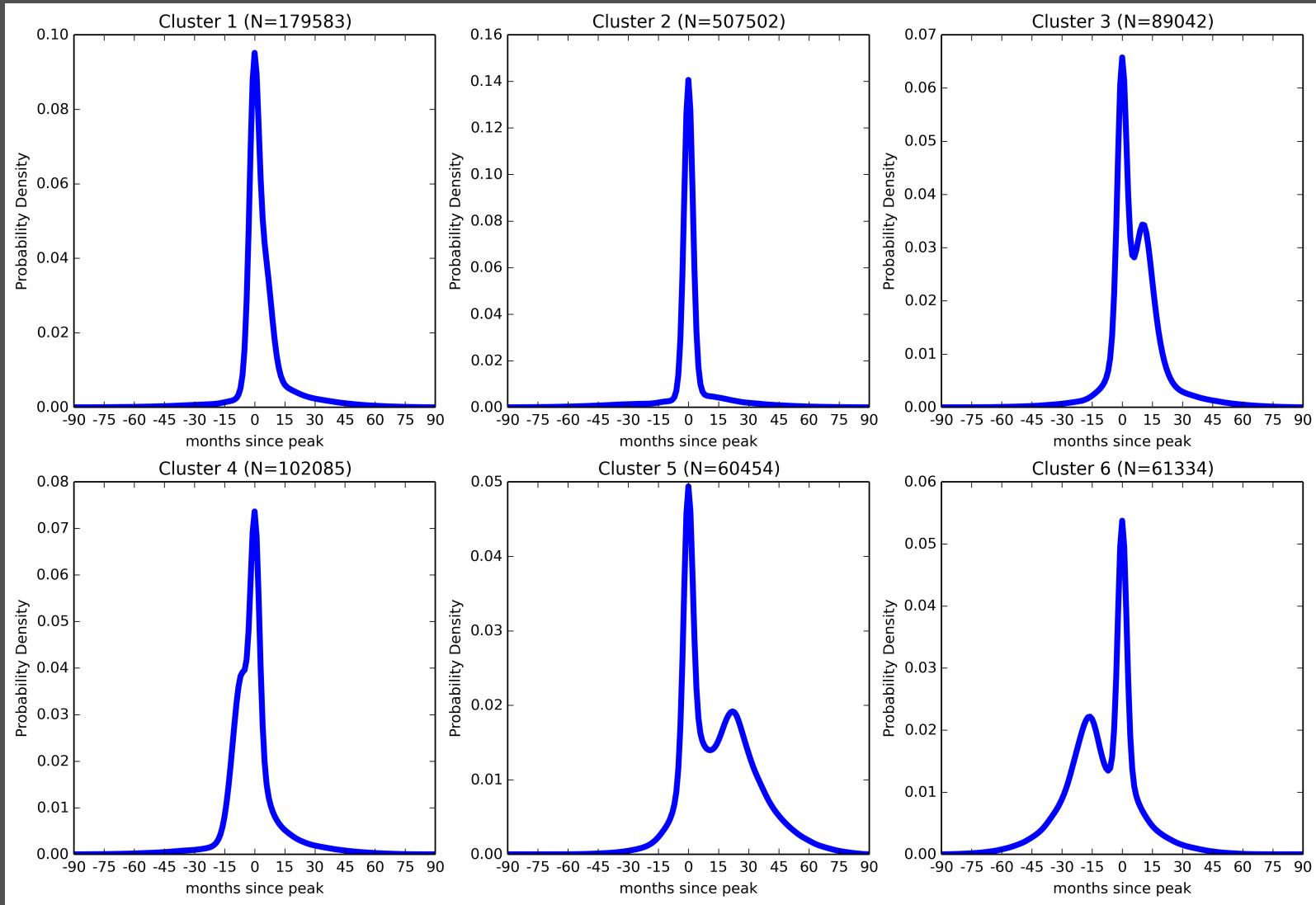
Clustering process



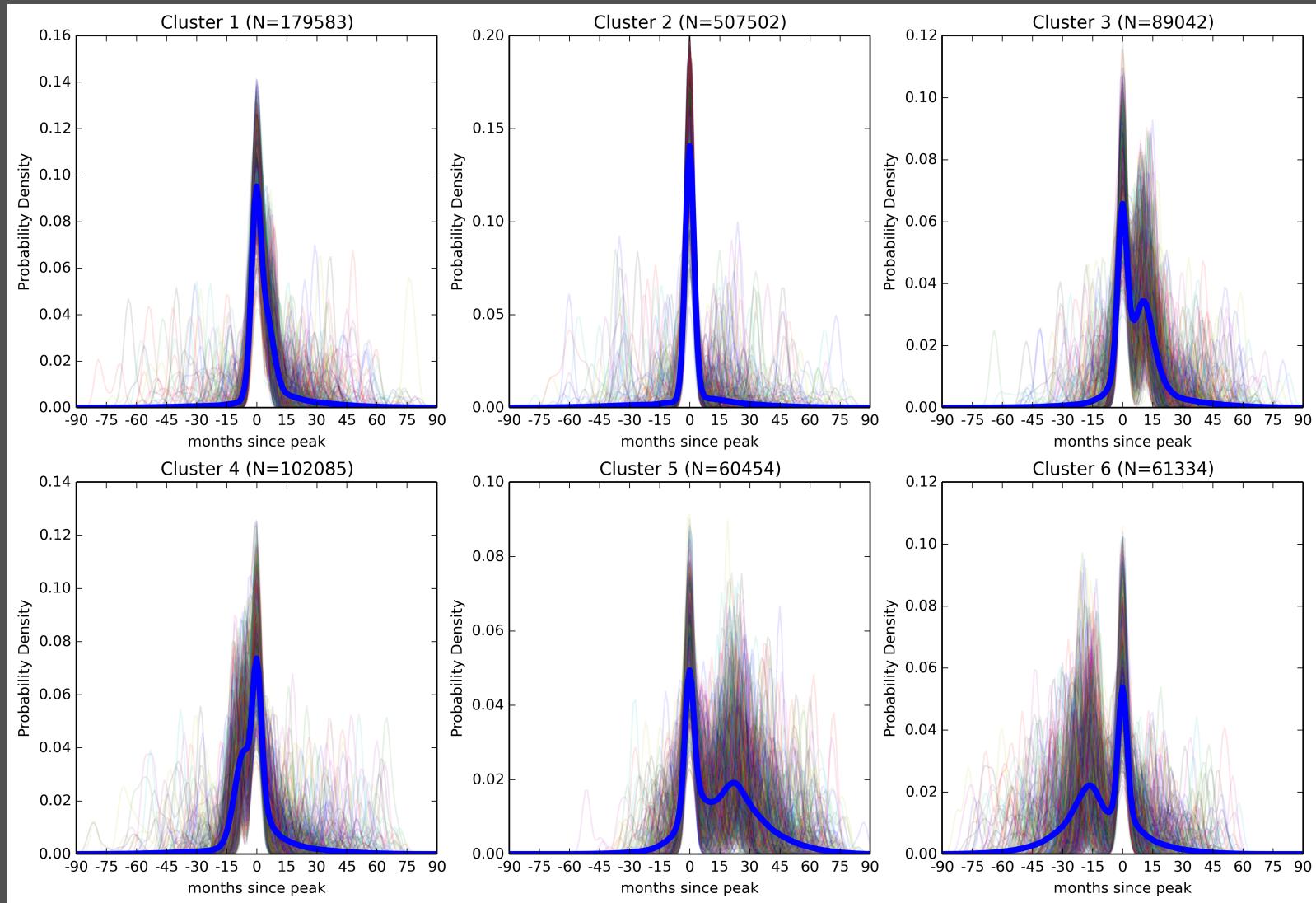
Clustering results

[first, an aside on determining the “right” K]

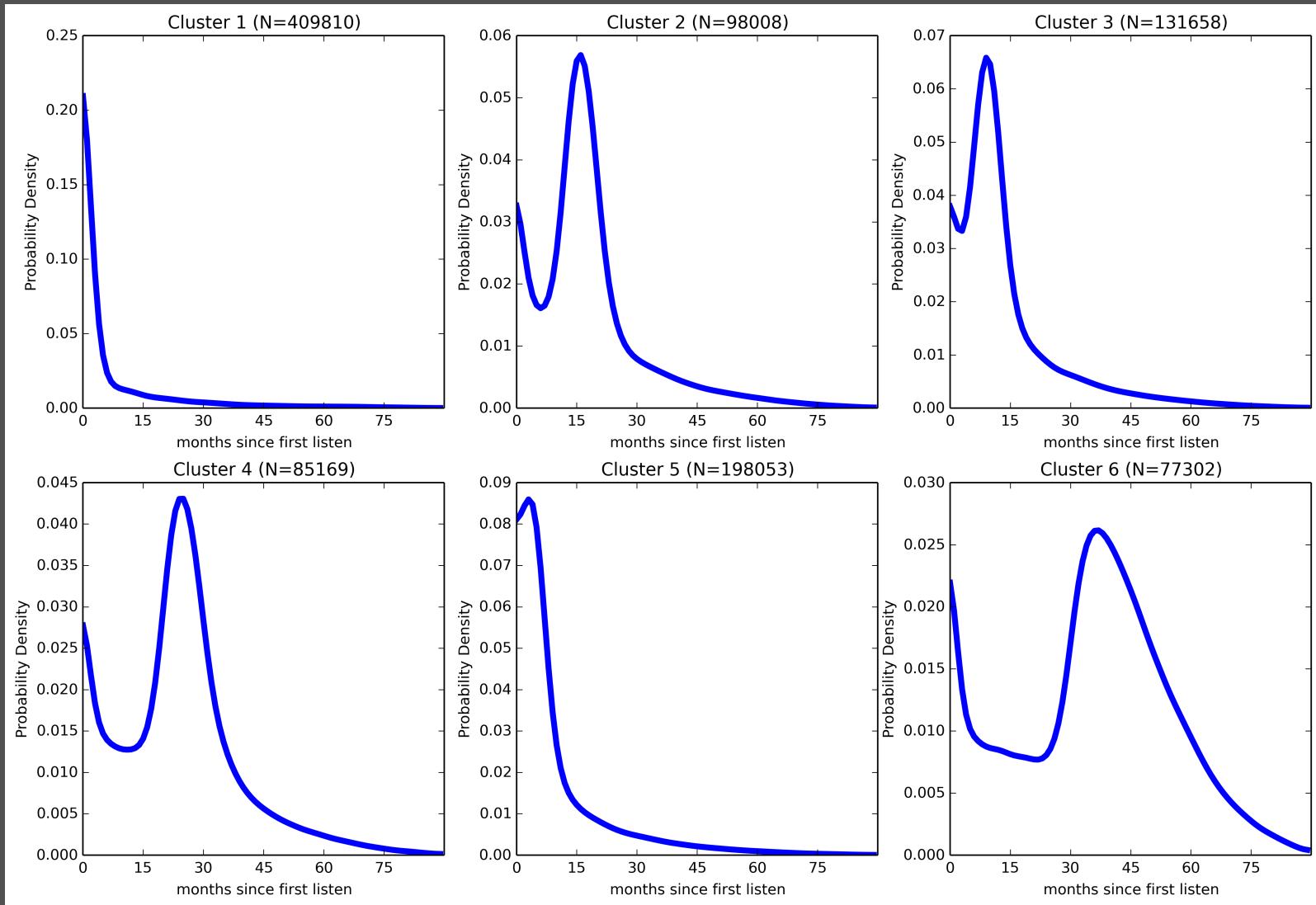
Clustering results – peak alignment



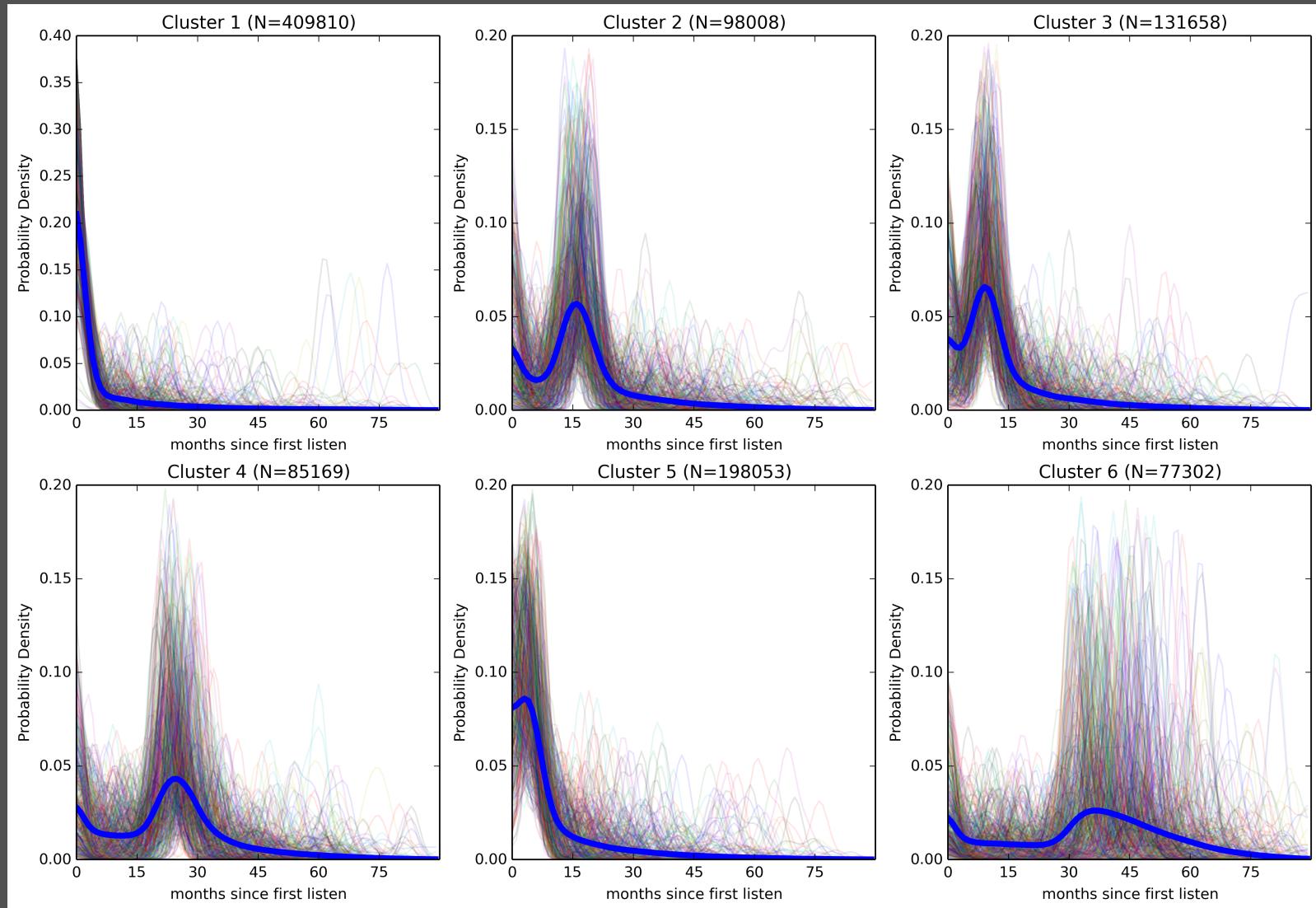
Clustering results – peak alignment



Clustering results – start alignment



Clustering results – start alignment



There's much more to be done, but
results suggest that YES, canonical
listening patterns do exist.

Next steps:

Refine clustering methods and cluster evaluation.

Explore how users and artists are distributed over clusters.

The bigger picture: Connections to psychological phenomena.

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Refine clustering methods and cluster evaluation.

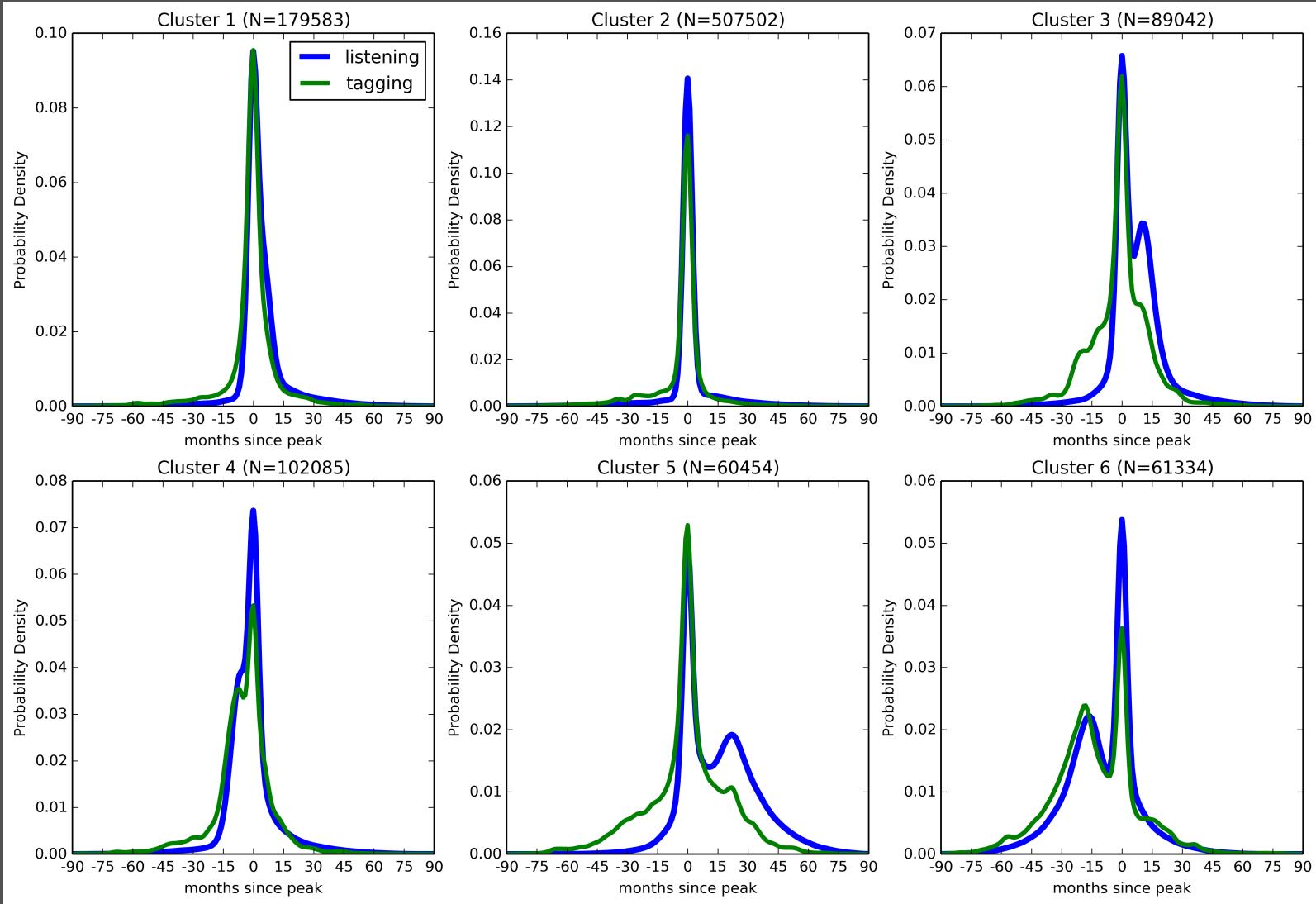
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The bigger picture: Connections to psychological phenomena.

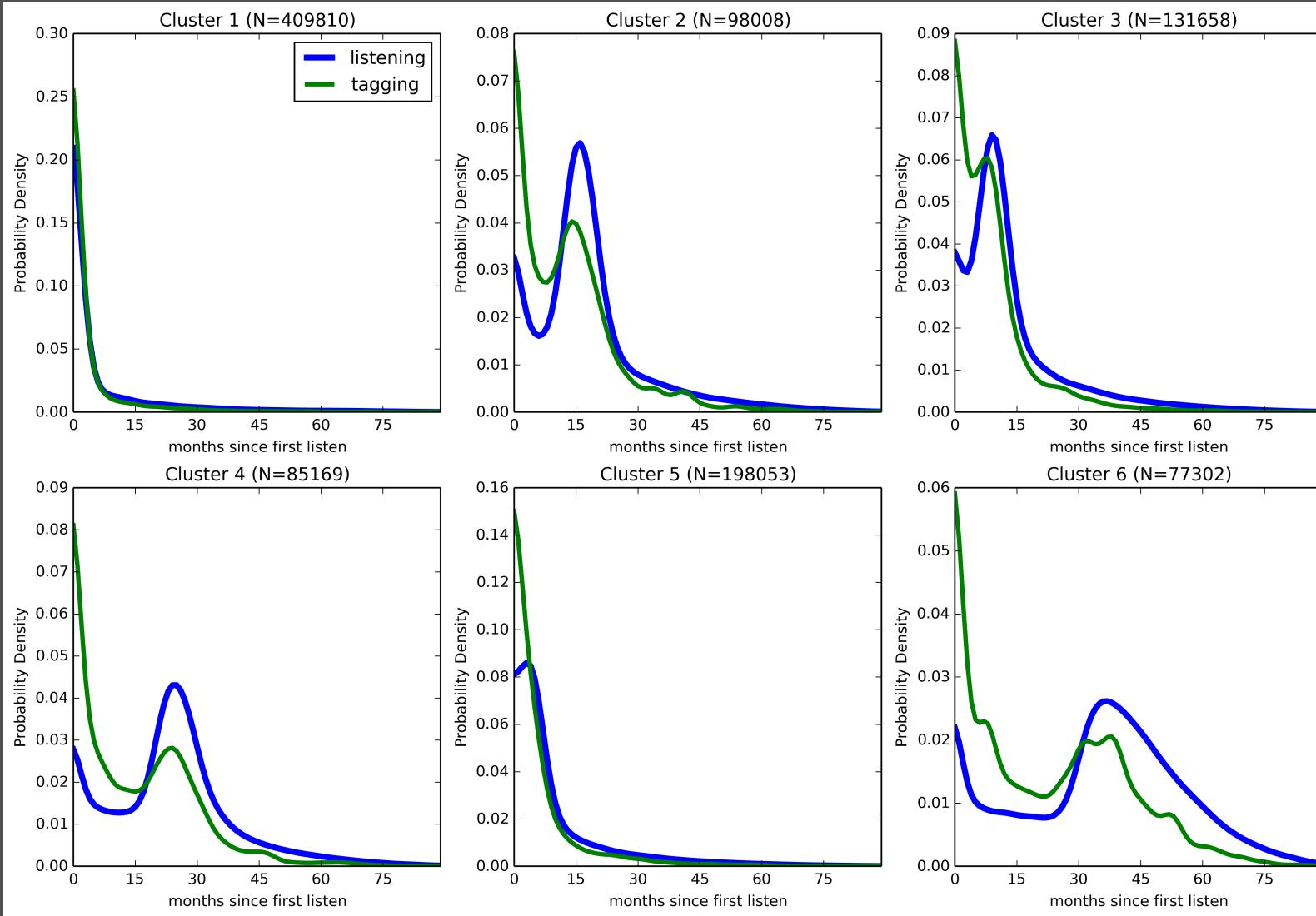
Satiation and the “taste for the new”

Do tags really function as memory cues?

Moving forward: Connections to Tagging



Moving forward: Connections to Tagging



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<https://pages.iu.edu/~jlorince>



Ψ