

Measuring Quantitative Trends in Western Popular Music

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Popular music is a key cultural expression that has captured listeners' attention for ages. Many of the structural regularities underlying musical discourse are yet to be discovered and, accordingly, their historical evolution remains formally unknown. We find a number of patterns and metrics characterizing the generic usage of primary musical facets such as pitch, timbre, and loudness in contemporary western popular music^{1,2}. Many of these patterns and metrics have been consistently stable for a period of more than fifty years. However, we prove important changes or trends related to the restriction of pitch transitions, the homogenization of the timbral palette, and the growing loudness levels¹. This suggests that our perception of the new would be rooted on these changing characteristics. Hence, an old tune could perfectly

sound novel and fashionable, provided that it consisted of common harmonic progressions, changed the instrumentation, and increased the average loudness.

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¹ J. Serrà, A. Corral, M. Boguñá, M. Haro, and J. Ll. Arcos. "Measuring the evolution of contemporary western popular music". *Scientific Reports* 2: 521. Jul 2012. <http://dx.doi.org/10.1038/srep00521>

² M. Haro, J. Serrà, P. Herrera, and A. Corral. "Zipf's law in short-time timbral codings of speech, music, and environmental sound signals". *PLoS ONE* 7(3): e33993. Mar 2012. <http://dx.doi.org/10.1371/journal.pone.0033993>