

Significance and popularity in popular music production

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In the world of artistic production there is a constant struggle to achieve fame and popularity. This fierce competition between artistic creations results in the emergence of highly popular elements that are usually well remembered throughout the years, while many other works that did not achieve that status are long-forgotten [1,3]. However, there might be other levels of importance that must be considered in order to have a more complete picture of artistic production world.

For example many works that have influenced the production itself, both due to their aesthetic and cultural value, might have not been or might not be popular anymore. In other cases, works being developed in a particular field might cross the fields borders and have an impact on the society at a global level. In this paper we focus on the duality between popularity and significance in the context of popular music, trying to understand the features of music albums belonging to one or both of these classes.

By means of user-generated data gathered on Last.fm, an on-line catalog of music albums, we define a growing conceptual space in the form of a network of tags[2] representing the evolution of music production during the years. We use this network in order to define a set of general metrics, characterizing the features of the albums and their impact on the global music production.

We then use these metrics to implement an automated prediction method of both the commercial success of a creation and its belonging to expert-made lists of particularly significant and important works. We show that our metrics are not only useful to asses such predictions, but can also highlight important differences between culturally relevant and simply popular products. According to our findings, popular artworks exploit stylistic heterogeneity in order to gather the attention on the largest part of the public. On the other hand, significant albums are very related to the emergence of new styles and features in a precise time period and are not necessarily popular. Finally, our method can be easily extended to other areas of artworks creation, also including scientific production.

[1] F. Tria, V. Loreto, V.D.P. Servedio, *Scientific Reports* **4**, 5890 (2014).

[2] C. Cattuto, C. Schmitz, A.I. Baldassa, *Communications* **20(4)**, 245262 (2007).

[3] J. Serr, Corral, M. Bogu, *Scientific Reports* **2**, 521 (2012).