Personal Take: Can Machines Have Taste?

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In September 2014, I created an account for the philosopher Theodor W. Adorno on the online music platform Rdio.[1] I wanted to see how Rdio's recommendation engine would analyse Adorno's 'taste profile'. This experiment was a bit tongue-in-cheek: Adorno was apprehensive, at best, about the effects of emerging technologies on musical taste. He despised radio and recorded music for offering a 'culinary listening' based on sensuous experience, which tended to favour 'light music', and he thought they undermined what he called 'structural listening' by decontextualising music from its original conditions of production. Instead, he preferred classical music by male German composers such as Bach, Beethoven, Wagner, Schoenberg and Berg. To get his Rdio station started, I created a playlist of thirty-seven excerpts from works by these composers, all of which he had cited as his favourites during a radio programme in 1965.[2] Despite his concerns, Adorno focused on short and 'beautiful' passages in this show: in other words, he used the media to prompt the very 'culinary listening' that he blamed on the media. This paradox framed my experiment.

As I was creating this fictive Rdio account based on the personal tastes and real subjectivity of one of radio's most famous philosophers and critics, I was struck by some intriguing possibilities. Would my twenty-first-century Adorno share his disapproval of Wagner on Facebook? Would he sing the praises of Alban Berg or Beethoven within their own Spotify or Pandora stations? How would he react when, in response to his enjoyment of the 'beautiful passages' from Alban Berg's *Suite Lyrique*, Rdio's recommendation engine – 'powered by Echonest', as the Rdio website had it – suggested that he listen to a track called 'Keep It Simple' by the electronic musician Schlomi Berg? Peter Szendy (1994) has spoken of Adorno's 'discophony', a discourse based on listening to recorded music. What would the German philosopher say about a 'webophony' 'powered by Echonest'?

Acquired by Spotify in March 2014, The Echo Nest was the recommendation engine used by the majority of music streaming platforms in the world (e.g. Rhapsody-Napster, Rdio, Spotify, iHeartradio), providing the listening experiences for millions of users by collecting data and generating their taste profiles. The Echo Nest claimed to '*power all of*

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today's best music experiences by automatically knowing everything about music.' How can a technology know everything about music? Born in 2007 out of the merger of two PhD dissertations from the MIT Medialab's Music Information Retrieval (MIR) research group, The Echo Nest is a complex technical object through which we can consider the evolution of musical spaces online. Equally a search engine for music information, a recommendation software and a semi-open dataset and programming interface, The Echo Nest combined artificial listening via analysis of the sound signal with monitoring of consumers' behaviours via collection of their data; this contrasts with, for example, Pandora's strategy of manually or semi-manually indexing and aggregating music data.

In this way, The Echo Nest did something that no previous technology had done. Their Application Programming Interface (API)[3] allowed profiling users' tastes and predicted their preferences by bringing together the analysis of listener behaviours and that of the audio signal. For The Echo Nest, it seems, taste is a reflection both of the formal and acoustic characteristics of the music tracks and of the subjectivity and social history of the listener. In this sense, MIR-based machine learning algorithms represent a new paradigm for analysing and understanding musical language and listeners' experiences. By automating music interpretation and analysis, and by extracting and projecting patterns of listeners' behaviours, these algorithms do more than recommend items that consumers might like: they turn into 'taste-maker' machines and become generators of taste (Gras forthcoming). Such machines are both a digital extension of the cultural industry's traditional recommendation systems (such as Top 50 lists) and arbiters of a deep change in the ways we understand and analyse music as a cultural artefact. The possibility of taste profiling based on automatic music recommendation can be seen as a dispossession of human subjectivity by its mechanical correlate – against which the Frankfurt School warned. Yet, at the same time, it has the capacity to create something new: the experience of listening to Schlomi Berg after Alban Berg is otherwise inconceivable, yet potentially enriching for Adorno.

Such an outcome calls into question the very idea of 'taste' as formulated by Enlightenment thinkers. Trees, flowers, bugs, particles and cells do not have taste: it seems so profoundly human that we don't interrogate it as a category. Ever since Kant's *Critique of Judgment*, taste has been understood as either the subjective manifestation of the universal or else an expression of cultural, social or technical milieux. Historians and sociologists have studied how our preferences and opinions are constantly being framed by societal factors such as the globalisation of production and distribution, class inequalities and reproduction or the social treatment of bodies. But they have barely imagined the possibility that people might not be exclusive

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possessors of taste: the concept is such a crucial expression of modern subjectivity that we could almost categorise it as a *belief*.

The emergence of automatic music recommendation over the past decade shifts our expectations of how music can make sense, even in its most ineffable ways. Taste-maker machines underlie a change in the aesthetics of music that demands a reconsideration of the Frankfurt School heritage. Today's digital industries are technologically driven and pervasive, but fulfil some of the same functions as the cultural industries critiqued by Adorno and his colleagues: they are shaping new conditions for the production of meaning and taste. In other respects, however, they are very different. For instance, machine learning algorithms using artificial neural networks enable analysis of the exponential amount of data generated by music-related activity online, and can be used for complex pattern recognition problems involved in the recognition of musical emotion or melody and rhythm. Such approaches are based on autonomous or pre-trained processes that no longer refer to classical music theory. Identifying tastes and preferences – such as the 'beautiful passages' that Adorno singled out – no longer relies on the traditional approaches built into the twentieth-century cultural industries. This shift from taste-maker machines to what could be thought of as 'machine taste' interrogates both whether we need to invoke the concept of taste in order to think about musical listening and subjectivity, and whether taste really defines us as human. In this way it opens up new perspectives on music and language.

Notes

1 Until its acquisition by Pandora in December 2015, Rdio was an online music streaming service that offered both free and subscription services. They claimed to have 500,000 subscribers in 85 countries.

2 The programme, called 'Beautiful Moments', was a montage of his favourite musical passages broadcast by Hessische Rundfunk in Frankfurt-am-Main. It was about two hours long and contained fifty-two musical examples from thirty-seven different compositions by fourteen composers; Adorno chose all the recordings. The text was subsequently published in Adorno 2009.

3 An API is an open or partially open interface and set of functions that allow the creation of applications and programs which access the features or data of an operating system, application or other service. APIs are crucial to the business models of most web platforms and aim primarily to generate value via allowing the development of new services and applications.

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