

Psychological predictors of engagement in music piracy

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Abstract

The digital revolution has changed how consumers engage with music. The present study explored the potential psychological factors underpinning why many consumers engage in music piracy. 396 participants (71.00% female, $M_{age} = 34.53$) completed an online questionnaire. Preference for accessing music digitally was associated with more favorable attitudes towards music piracy, as was being male, and expressing low levels of conscientiousness. Concerning the uses and gratifications of using different formats to engage with music, music piracy was found to be a financially viable way of listening to music. Discussion focuses on the notion that recorded music is perceived as poor value for money, and this is considered distinct from the widespread perception that piracy is simply about getting free music.

Keywords: digital music; listening; piracy; music engagement; personality; Uses & Gratifications

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Digital piracy is a widespread practice involving accessing copyrighted media illegally, predominantly via the Internet. Measuring the prevalence of digital piracy is troublesome, but it certainly appears to be the most commonly committed form of cybercrime – up to 86% of college students have engaged in piracy at some point in their lives (see for instance Gunter, 2009; Higgins et al., 2009; Vandiver et al., 2012). Despite innovation to combat piracy in the form of streaming services, piracy remains a significant threat to the creative and cultural industries – a so-called ‘value gap’ now exists wherein much of the money generated from recorded music is not returned to rightsholders. A recent meta-analysis by Lowry, Zhang and Wu (2017) suggests that those engaging in piracy weigh up outcome expectancies, considering both rewards and risks; and in another meta-analysis by Fleming et al. (2017) the prominence of the theory of planned behavior in the literature clarifies the emphasis on understanding the psychological dynamics of why people engage in this prominent leisure activity. Unlike much crime, piracy does not appear to be impulsive.

The music industry has struggled to adapt to new modes of media consumption more than any other creative sector due to digital technologies (Watson, 2016). Small music files, such as mp3s, are quickly and easily exchanged online, with the mediums used to exchange files routinely changing; The *International Federation of the Phonographic Industry* (IFPI, a not-for-profit organisation that represents the interests of the recorded music industry globally) is now focused on *stream-ripping* applications which record content streamed online (i.e., *YouTube*). As with other music trends, it appears that music piracy changes alongside technology – the key constant, however, is that a significant proportion of consumers appear to be reluctant to pay for music when illegal options are also available. It appears that consumers are now selective about when to pay for music and when not to (Brown & Knox,

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2016a; Sinclair & Green, 2016), often mixing and matching between different music formats – known in industry terms as ‘multi-channeling’. Thus, how and why consumers choose to access their music via particular formats and whether to pay for music or obtain it illegally forms the basis of the present study.

The wider societal and cultural changes stemming from increased engagement with technology have shaped attitudes towards music (Wingstedt, Brändström & Berg, 2008), with the consumption patterns of ‘music pirates’ suggesting a belief that music should be *free*. Several studies find that music piracy is driven by the desire to get music for free and the *convenience* of illegal services (Argan et al., 2013; Cox & Collins, 2014; Schwarz & Larsson, 2013; Wang & McClung, 2011). Framed differently, consumers have a *low willingness to pay*, and music is often perceived to be over-priced, despite music having never been cheaper. Indeed, it has been argued that music piracy is not about getting content for free, but rather about *value for money*, with concerns over where money goes when paying for music (Brown & Knox, 2016a). There is a widespread misconception that musicians are ‘filthy rich’ (Ang et al., 2001; Brown, 2015; Brown & Knox, 2016b; Green, Sinclair & Tinson, 2016). Accordingly, consumers may feel that paying for a product that is considered over-priced is poor value, given that their money is believed to end up in the hands of the wealthy. In addition to financial utility, collection utility (the ability to find any song) has also been found to be a key benefit of music piracy (Sheehan, Tsao & Pokrywczynski, 2012), as well as the ability to sample new content ahead of release (Cox & Collins, 2014) and niche content (Watson et al., 2015). Elsewhere, social utility (sharing songs with friends, seeing their collections) has been found to be the most important reason for engaging in music piracy, (Sheehan, Tsao & Yang, 2010). In other words, music piracy is not just about saving money; the sheer volume of music available via illegal services is attractive (Schwarz & Larsson, 2013).

The findings discussed above can be conceptualized as encompassing *utilitarian motives* related to music piracy; and research in this vein, can be considered with regard to Uses and Gratifications theory (Katz, Haas & Gurevitch, 1973; Katz, Blumler & Gurevitch, 1974), offering rich insight into the decision-making processes of individuals, establishing a framework for empirical enquiry. Uses and Gratifications theory is used to study how people select and use new media (Rayburn & Palmgreen 1984; Ruggiero 2000; Stafford et al. 2004) and has seen a resurgence of interest in recent years with the growth of the Internet. According to the theory, people distinguish between types of media based on the *needs* they aim to satisfy as a result of media use (Katz et al. 1973), with media use considered *goal-directed*, that people are aware of their needs, and that people *actively* seek and use media. The theory views needs as: ‘The combined product of psychological dispositions, sociological factors, and environmental conditions’ (Katz et al. 1973, p. 516–517) and gratifications, in turn, are the perceived fulfilment of needs as the result of a particular activity, including media use (Rayburn & Palmgreen, 1984). Previously, it has been applied to the consideration of everyday music behaviors (e.g., reasons for listening to music – Lonsdale & North, 2011; reasons for using Facebook music listening applications – Krause, North, & Heritage, 2014). Thus, this theory is extremely useful in terms of considering music piracy from a psychological perspective.

Previous research on music piracy has focused on personality traits, though reaching mixed results; Miranda and Kim (2015) found no relationship between personality and music piracy, and elsewhere Brown and MacDonald (2014) found that individuals scoring highly on *openness* and low on *honesty–humility* and *conscientiousness* demonstrated more favorable attitudes towards music piracy. The commercial implications on recommendation services are pronounced, with *openness* increasing choice for browsing music by mood, and *conscientiousness* increasing choice for browsing music by activity, for instance (Ferwerda et

al., 2015). Therefore, personality should be accounted for, alongside uses and gratifications when considering attitudes towards music piracy.

Additionally, where music piracy engagement fits into wider music listening customs needs to be addressed. Research indicates that one's engagement with music influences the nature of their music-related activities (Greasley & Lamont, 2006); that people who report most to be important in their life listen to more music (Krause, North & Hewitt, 2015); and that more engaged people are often more conscious of their use of music (Greasley & Lamont, 2006). For instance, Leguina, Arancibia-Carjaval and Widdop (in press) show that preference for different types of music are related to different modes of music listening. It is, therefore, possible that music engagement is intertwined with piracy behavior.

Further, although most people still possess a physical music collection and actively listen to digital collections (Liikanen & Åman, 2016), adolescents are more likely to use digital music services while adults are more likely to access music via CD or radio (Komulainen et al, 2010; Nielsen Company, 2012; Smith, 2012). Indeed, preference for digital music has been found to predict favorable music piracy attitudes (Brown & MacDonald, 2014). Moreover, research demonstrates that so-called 'music pirates' spend *more* on legal music than people who do not engage in music piracy at all (Huygen et al., 2009; Watson, Zizzo & Fleming, 2015); and while there is a continuum with the exclusive consumption of legal and illegal music at the extremes, many consumers download music illegally *some of the time* (Sinclair & Green, 2016). How do people's preferred access methods/format use for music relate to piracy attitudes?

1.1 Aim and Research Questions

Concerned with why consumers choose to engage in music piracy given the multitude of free, legal services now available, this study examined the relationship between music piracy

attitudes and broader musical engagement practices. Specifically, the study aimed to examine if two psychological concepts, personality and music engagement, could explain attitudes towards music piracy (RQ1). In terms of personality, it was anticipated that the results would replicate existing findings, namely that those scoring high on openness and low on conscientiousness would favor music piracy. A second research question considered whether the uses and gratifications associated with people's preferred format were related to piracy attitudes (RQ2). It was expected that music piracy attitudes would be related to those uses and gratifications highlighting the relationship between music piracy engagement and better value for money (Brown & Knox, 2016a), social norms (Navarro et al., 2014) and discovery (of new music) (Schwarz & Larsson, 2013).

2. Method

2.1 Participants

Three hundred and ninety six participants completed the online questionnaire (38.60% USA, 26.50% UK, 34.80% Australia), with data from an additional 44 participants excluded as they did not process the materials carefully (e.g., by selecting the same response for all questions, etc.). Ages ranged from 16-71 years ($M = 34.53$, $Mdn = 20$, $SD = 8.98$); 71.00% of the sample was female, 28.00% was male, and 1.00% of participants identified themselves as non-binary. About one-fifth (20.70%) of the participants had University qualifications. Participants were recruited via University student research participation programs, dedicated research participation websites, and online via the author's website. Participation was voluntary, although some University students received course credit for their participation. The University of [reference removed to facilitate blind review] granted ethics approval for the research (60-1516-2).

2.2 Design and Procedure

Data was collected as a part of a larger study considering how people access and listen to music [reference removed to facilitate blind review], and the present study employed the data specifically concerning format use and personality to consider piracy attitudes. Individuals accessed the questionnaire using a direct web link. After reading the participant information and indicating consent, participants completed the questionnaire as a series of web pages, and were directed to a debriefing page upon completion.

Participants completed Brown and MacDonald's (2014) Attitudes Towards Music Piracy (AMP-12) scale. This instrument includes 12 items (e.g., "Sharing music online is a useful way of discovering new artists", "If I could access music ahead of its official release, I would want to hear it") and utilizes a seven-point response scale (1 = *Strongly disagree*, 7 = *Strongly agree*). A single summed score is computed, such that higher scores are indicative of more favorable attitudes towards piracy; attitudes are known to be a predictor of engagement (e.g., Popham, 2011) and the instrument was chosen in the interest of minimizing social desirability. The Cronbach's alpha value for the current sample was .73, demonstrating consistent reliability with previous use of the measure (.75) in Brown and MacDonald (2014).

To measure personality, Langford's (2003) short five-item questionnaire was used. Participants rated themselves for each Big Five dimensions respectively, using a seven-point scale with anchored adjective ends, namely openness ("uncreative-creative"), conscientiousness ("lazy-hard-working"), extraversion ("shy-outgoing"), agreeableness, ("headstrong-gentle") and neuroticism ("nervous-at ease"). This personality measure has been previously used in music listening research, due to its concise presentation and demonstrated reliability (e.g., Krause & North, 2016a; Krause & North, 2016b; Langford, 2003; North, 2010).

Individuals indicated the music format they used most often to listen to music. Six formats, namely physical (i.e., CD, vinyl, cassette), digital files (i.e., mp3), free digital streaming, paid-for digital streaming, radio, and live music, were included as options which represent a variety of ways in which music can now be accessed. Participants also responded to [reference removed to facilitate blind review] 49 Format uses and gratifications items with regard to the format they used most often to listen to music (items were adapted from recent literature concerning format use, illegal downloading, and music streaming (Krause & North, 2016a; Mäntymäki & Islam, 2015; Sang, Lee, Kim, & Woo, 2015)). This measure which uses a seven-point scale (1 = *Strongly disagree*, 7 = *Strongly agree*) addresses eight types of uses and gratifications with regard to music listening device: *usability and intention to use*, *discovery*, *functional utility*, *flexibility*, *connection*, *social norms*, *value for money*, and *playback diversity* (see Table 1, and [reference removed to facilitate blind review] for more details). Consequently, the eight dimensions capture different uses and gratifications; for example, *social norms* concerning how others tend to listen to music in the same way, and *playback diversity* concerning features, which allow users to *do things* with music, such as create playlists. Scores on the eight dimensions were created for participants as a result of a principal factor analysis with promax rotation. As [reference removed to facilitate blind review] reported, Cronbach's alpha values ranged .60–.91, indicating moderate to substantial reliability values.

-Table 1-

Participants reported their age, gender, whether they held a University qualification, and their country of residence. Additionally, respondents answered three music engagement questions: how important they consider music in their lives (as a rating on a seven-point scale, where 1 = *Strongly disagree*, 7 = *Strongly agree*); an estimate of how many hours they listen

to music daily; and completed Krause and North's (2016a) music-technology identity measure. As in previous research (e.g., Krause & North, 2016a; 2016b), music-technology identity scores were created as a result of a principal components analysis, which indicated that one factor accounted for 64.76% of the total variance. In line with previous research, the Cronbach's alpha for the music-technology identity scores was .82 (Krause and North 2016a; 2016b).

3. Results

3.1 RQ1: Psychological Predictors of Engagement in Music Piracy

As the first research question concerned whether psychological constructs and music engagement accounts for music piracy attitudes, a Generalized Linear Mixed Method (GLMM) analysis was performed, implemented through SPSS (version 22). The AMP-12 score was entered as the outcome variable; the demographic variables (age, gender, possession of a University degree), music engagement variables (music importance rating, number of hours spent listening to music daily, music-technology identity score), five personality scores, and the nominated format used most often were entered as predictor variables. The overall model was statistically significant ($F(15, 366) = 4.391, p < .001, \eta_p^2 = .050$). As Table 2 indicates, gender, conscientiousness, and format use demonstrated significant associations with the AMP-12 score.

Conscientiousness was negatively associated with the AMP-12 score, such that those individuals favoring music piracy were easy-going and disorderly. Regarding gender, post-hoc pairwise comparisons revealed a significant difference such that males demonstrated more favorable attitudes towards piracy than females ($\beta = 0.234 [0.069, 0.399], t(366) = 2.785, p = .006, \eta^2 = .021$). Table 3 details the post-hoc pairwise comparisons concerning the listening formats. Individuals using digital files and paid-for streaming services were significantly more

likely to endorse positive piracy attitudes than those using physical formats. Moreover, users of free streaming services were significantly more likely to endorse more favorable piracy attitudes than users of physical formats, digital files, and the radio.

-Table 2 and Table 3-

3.2 RQ2: Format Uses and Gratifications and Music Piracy Engagement

To address the second research question, a GLMM analysis considered how the eight format uses and gratification dimensions related to piracy attitudes. In this analysis, the eight uses and gratifications scores were entered as predictor variables with the AMP-12 score entered as the outcome variable. The overall model was significant ($F(8, 283) = 5.715, p < .001, \eta_p^2 = .079$), and the connection and value for money dimensions demonstrated statistically significant associations with the AMP-12 score (see Table 4). In particular, as expected, the value for money dimension was positively associated with more favorable piracy attitudes. The connection uses and gratification dimension, characterized by emotionally connecting with music, was negatively associated with favorable piracy attitudes. In addition, it is interesting that the social norms and discovery dimensions did not demonstrate significant associations.

-Table 4-

4. Discussion

Preference for digital music formats (including both paid-for and legal streaming) was associated with favorable music piracy attitudes (known to be a predictor of engagement), as was being male and reporting lower levels of conscientiousness, supporting previous findings (Brown & MacDonald, 2014). Lower conscientiousness is related to consistent results from criminology that find so-called music pirates have *low self-control* (Higgins, 2011; Higgins et

al., 2012; Higgins & Wolfe, 2008; Hinduja, 2012). However, in contrast to Brown and MacDonald (2014), openness was not significant in the present study. Interestingly regarding music engagement, the findings suggest that those who hold positive music piracy attitudes are no more engaged with music than those who do not favor music piracy. Furthermore, the music engagement variables were not significantly related to piracy attitudes. It is possible that engaging in music may not require much effort given the myriad ways of accessing music today, which perhaps accounts for why individuals engaging in music piracy were no more musically engaged.

Indeed, from a Uses and Gratifications perspective (Katz et al. 1973; Katz et al. 1974), results confirm that individuals with more positive attitudes towards music piracy are not connecting with music emotionally as much as those who do not, and that music piracy is a financially viable mode of music listening. The latter finding builds on the suggestions that music piracy is not simply about accessing content for free, but about the comparative value over rival paid-for formats (Brown & Knox, 2016a). It could be said that music piracy serves the need of saving money.

Surprisingly, conventional utilitarian factors were unrelated to music piracy attitudes, perhaps suggesting that convenience, discovery, and flexibility have been woven so seamlessly into legal subscription services as to make music piracy obsolete. In Uses and Gratifications terms, music streaming services can be thought of as adequately serving multiple needs regarding media use, hence their popularity. However, although legal services (e.g., Spotify) continue to prosper, music piracy continues (Snickars, 2016), and the findings concerning value for money suggest why. As discussed, individuals who engage in music piracy put forward the notion that spending money on music that can be accessed for free is unwise, as that money will go to the wealthy (that this is poor value for money). However, data from

Musicians Union (2012) reveals that most musicians in UK for instance earn less than £20,000 a year and some 77% of money made from recorded music is made by just 1% of musicians (Mulligan, 2014). Also, using the term ‘musicians’ is lazy – the business practices of musicians vary considerably, and in complex ways (Mulligan, 2015). Thus, dedicated future research could consider if people actually believe that musicians are rich or merely like to think so as a way of feeling less guilty about engaging in an illegal, morally questionable activity. Recent research finds that the music industry is considered untrustworthy (Sinclair & Tinson, 2017).

The participants’ selected music format was significantly associated with piracy attitudes. Interestingly, users of both free and paid-for streaming services were more likely to endorse positive piracy attitudes suggesting that even the seemingly-infinite catalogues of on-demand music are not enough to deter music piracy. Finding that music streamers are more likely to download music illegally, Borja, Dieringer and Daw (2015) suggest that those using the likes of Spotify are comfortable using digital technology overall, enhancing the opportunity to also engage in music piracy.

The current study is not without its methodological limitations, such as not taking into account YouTube as a specific music format – as it is a predominant listening mode and current major focus for industry, as noted earlier. Indeed, IFPI (2016) cites the ‘value gap’ wherein such services bypass normal licensing rules, leading to unfair remuneration, and believes that stream-ripping via the likes of YouTube is now the dominant mode of music piracy (see Garrahan, 2016). Though the examples of ‘free streaming’ included references to music subscription services, it is possible that participants may have considered YouTube to be a free streaming service. The findings concerning the positive relationship between use of streaming (both paid-for and free) and music piracy underscores the need to operationalize different formats more clearly for future research. Additionally, the generalizability of the results to

wider populations is not possible, and the study would benefit from replication with a representative sample. Culture has previously been found to play a moderating role in digital piracy norms (Udo, Bagchi & Mativ, 2016), thus a broader cross-cultural exploration would also allow for the consideration of broader cultural influences that might moderate music engagement and piracy behaviors (e.g., economy, laws). Though music piracy is under-researched from a psychological perspective, there are tangible ramifications for the creative and cultural industries in unpacking why so many persistently choose not to pay for music. In July 2015, Google received 54,810,885 notifications to remove or delete items from search indexes infringing copyright (Lee & Watters, 2016). A costly process, IFPI (2016) research finds that 94% of all takedown requests sent by IFPI during 2015 concerned recordings that were routinely uploaded to sites *already notified* that the content was breaching copyright. The current study offers some key insights into why people are likely to engage in music piracy, working from an attitudinal-based measurement. Whilst Spotify has been singled out for its emphasis on convenient sharing (Anderson, 2014), empirical research finds that social features do not add value for customers on Spotify (Mäntymäki & Islam, 2015). The current study does not find that utilitarian factors appeal to users of pirate services, rather the findings suggest that value for money is at the heart of seeking out music illegally, a construct deserving of future research.

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Table 1.

Listening Format Uses and Gratifications Dimensions

Uses and gratifications dimension	Example measure items
Usability and intention to use	I intend to use this format to listen to music in the future; It is enjoyable; It is familiar.
Discovery	It helps me to discover music I would not normally listen to; To sample music before I buy it.
Functional utility	I can manage the music easily; It enables me to access the songs I want; It centralizes my music collection.
Flexibility	It is portable; It allows me to listen to music wherever I am; It allows me to listen to music when it best suits.
Connection	To connect with myself; I am able to use music to elicit particular moods or states.
Social norms	Most people who are important to me would approve of me listening to music in this way.
Value for money	It is a financially viable way of listening to music; Using this format helps save me money.
Playback diversity	I enjoy creating compilations or playlists; I use shuffle features.

Table 2.
GLMM Analysis Concerning Piracy Attitudes (N = 382)

Analysis variables	<i>F</i>	DF	DF _{error}	<i>p</i>	β	<i>t</i>	95% CI	η^2
Gender	7.754	1	366	0.006				
Age	3.387	1	366	0.067	-0.010	-1.840	-0.020 0.001	0.009
University degree	0.471	1	366	0.493				
Average daily music listening (hours)	0.917	1	366	0.339	0.013	0.958	-0.014 0.040	0.003
Music importance rating	0.048	1	366	0.827	0.009	0.219	-0.073 0.091	0.000
Music technology identity score	0.029	1	366	0.864	0.007	0.171	-0.076 0.090	0.000
Openness	0.053	1	366	0.818	-0.007	-0.230	-0.064 0.050	0.000
Conscientiousness	4.925	1	366	0.027	-0.059	-2.219	-0.111 -0.007	0.013
Extraversion	3.686	1	366	0.056	0.052	1.920	-0.001 0.104	0.010
Agreeableness	1.958	1	366	0.163	-0.033	-1.399	-0.080 0.013	0.005
Neuroticism	1.975	1	366	0.161	0.037	1.405	-0.015 0.090	0.005
Most often used format	3.855	4	366	0.004				

Corrected model $F(15, 366) = 4.391, p < .001, \eta_p^2 = .050$. DF = degrees of freedom, CI = confidence interval.

Table 3.

Pairwise Contrast Results Concerning the Listening Formats

Contrast variables	β	t	p	95% CI		η^2
Physical - digital file	-0.332	-2.058	0.040	-0.649	-0.015	0.011
Physical - free streaming	-0.565	-3.404	0.001	-0.892	-0.239	0.031
Physical - paid-for streaming	-0.400	-2.275	0.024	-0.745	-0.054	0.014
Physical - radio	-0.248	-1.377	0.169	-0.602	0.106	0.005
Digital file - free streaming	-0.233	-2.640	0.009	-0.407	-0.060	0.019
Digital file - paid-for streaming	-0.068	-0.710	0.478	-0.256	0.120	0.001
Digital file - radio	0.084	0.697	0.487	-0.153	0.321	0.001
Free streaming - paid-for streaming	0.166	1.658	0.098	-0.031	0.362	0.007
Free streaming - radio	0.317	2.471	0.014	0.065	0.570	0.016
Paid-for streaming - radio	0.152	1.147	0.252	-0.108	0.412	0.004

Note. CI = confidence interval

Table 4.
GLMM Analysis Concerning Piracy Attitudes and Uses and Gratifications (N = 392)

Analysis variables	<i>F</i>	DF	DF _{error}	<i>p</i>	β	<i>t</i>	95% CI		η^2
Uses and Gratifications 1: Usability and intention to use	0.381	1	383	0.538	0.032	0.617	-0.071	0.135	0.001
Uses and Gratifications 2: Discovery	0.811	1	383	0.368	0.036	0.900	-0.043	0.115	0.002
Uses and Gratifications 3: Functional utility	0.235	1	383	0.628	-0.033	-0.485	-0.167	0.101	0.001
Uses and Gratifications 4: Flexibility	1.997	1	383	0.158	0.098	1.413	-0.038	0.234	0.005
Uses and Gratifications 5: Connection	3.888	1	383	0.049	-0.092	-1.972	-0.184	0.000	0.010
Uses and Gratifications 6: Social norms	0.132	1	383	0.716	0.016	0.364	-0.069	0.101	0.000
Uses and Gratifications 7: Value for money	9.731	1	383	0.002	0.157	3.119	0.058	0.256	0.025
Uses and Gratifications 8: Playback diversity	3.144	1	383	0.077	0.101	1.773	-0.011	0.213	0.008

Note. Corrected model $F(8, 283) = 5.715, p < .001, \eta_p^2 = .079$. DF = degrees of freedom, CI = confidence interval.