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MUSICÆ SCIENTIÆ

Musicae Scientiae
2014, Vol. 18(1) 53–64
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sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/1029864913510016
msx.sagepub.com
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Predictive factors of music piracy: An exploration of personality using the HEXACO PI-R

Steven C. Brown
Glasgow Caledonian University, UK

Raymond A. R. MacDonald
The University of Edinburgh, UK

Abstract

Addressing one of the principal lines of research on music piracy, the present study considers personality as predictive of favorable music piracy attitudes. Additionally, positive anti-piracy messages were explored as a potential deterrent. A total of 261 participants (45.60% male) with a mean age of 26.34 participated in an online questionnaire. Personality was measured using the 60-item version of the HEXACO PI-R (Lee & Ashton, 2004). The effects of positive verbal anti-piracy messages were measured using an existing research paradigm, with participants allocated to one of four conditions ("legal sales of music encourage future live performances", "legal sales of music allow fans greater access to exclusive content", "legal sales of music will incorporate charitable donations" and control) emphasizing different positive outcomes to legally purchasing recorded music. An original construct (AMP-12) measured attitudes towards music piracy. Personality was a significant predictor of piracy attitudes, with participants demonstrating pro-piracy attitudes scoring lower on honesty–humility and conscientiousness, and higher on openness. Condition did not affect attitudes towards music piracy. Further analysis on personality suggests that participants holding pro-piracy attitudes are less fair (using the HEXACO PI-R). Additional analyses show that both preference for digital music and being 24 or younger as predictive of pro-piracy attitudes. Building on related research, the study adds to the knowledge base on predictive factors and explores personality in some depth. Discussion centers on personality and more specifically the HEXACO PI-R factor of Fairness in defining useful areas for future research.

Keywords

attitudes, digital piracy, digital revolution, HEXACO PI-R, individual differences, musical preferences, personality

Corresponding author:
Steven C. Brown, School of Health and Life Sciences, Glasgow Caledonian University, Cowcaddens Road, Glasgow, G4 0BA, Scotland, UK.
Email: steven.brown@gcu.ac.uk

Digital piracy (henceforth referred to as DP) is a global phenomenon – heavily normalized in many parts of the world. The internet has facilitated widespread illegal downloading of copyrighted media and, in particular, music. The music industry has changed dramatically in the last decade, with technological innovations encouraging the popularity of digital music over hard copies. While such technology has allowed for illegal procurement of music, it has also boosted information on live music with festival popularity particularly benefitting as a result (Stone, 2008). Mortimer, Nosko & Sorensen (2012) discovered greater awareness of smaller artists as a result of piracy – with increased demand for their live concert performances. Furthermore, Gayer & Shy (2006) argue that demand for live performances is reduced when piracy is prevented. Such shifts have inspired a wealth of research into the causes and effects of music piracy (with this article focusing specifically on music piracy) and a large volume of the literature to date concerns two key factors: *deterrents* and *predictive factors*.

Deterrents and predictive factors

Anti-piracy campaigns have largely failed to address the phenomenon of widespread engagement in music piracy, with Wikstrom (2011) suggesting that: "Perhaps the single most enduring effect of these initiatives has been a negative impact on the reputation of the music industry" (p.155). Traditional anti-piracy campaigns focus on the punitive measures that could be taken if caught downloading copyrighted media illegally, with the majority of research centering on deterrents via technological and legislative changes. Recent real-life events suggest that individuals engaging in piracy adapt well to such changes. For example, while *P2P* (illegal sharing of copyrighted files over the Internet) usage in the USA dropped after file-sharing giant Limewire was closed, usage on other P2P services increased (Forde, 2011). Empirically, Lauinger et al. (2012) conclude – having exposed the ineffectiveness of conventional "takedown" approaches – that reducing the demand for pirated content by providing legitimate alternatives is the best means to address piracy.

Most technical measures, at best, inconvenience individuals engaging in music piracy. For example, it is commonplace for record companies to flood file-sharing networks with seemingly authentic files that can be white noise or a loop of a small portion of a track, appearing as the correct duration for the actual songs (DeVoss & Porter, 2006). In direct response to Madonna's decision to adopt this strategy, a hacker uploaded pirated versions of tracks from her new album on her official website. As such, conventional punitive measures can accomplish counter-intuitive outcomes that can only serve to antagonize individuals. This is commonly referred to as the "Streisand effect" (see Masnick, 2005).

The continued presence of widespread DP raises questions over the effectiveness of these conventional anti-piracy approaches. d'Astous, Colbert & Montpetit (2005), using vignettes, observed that emphasizing the negative consequences of piracy (such as getting caught and fined) had no significant impact on the behavioral dynamics underlying music piracy. The authors conclude that this may be because of the varied nature of often incongruent messages from different sources concerning DP behavior.

More interestingly however, are the findings from three studies by Sinha & Mandel (2008), who observed that negative incentives are only a strong deterrent for certain consumers but can actually increase the propensity to pirate for others. Conversely, positive incentives, such as improved functionality, were observed to significantly reduce the tendency to pirate among all the consumer segments studied, with 56% of Swedish file-sharers citing Spotify (a popular Swedish music-streaming service) as the reason they had curbed their habit (Jones, 2011). Exploring the ethical component involved in choosing whether or not to pirate a CD, Grolleau,

Mzoughi & Sutan (2008) noted that 30% of participants would buy a CD if over 75% of proceeds went to charity. This represents a common belief that (despite being cheaper than ever) music is overpriced, with consumers often seeking supplemental content such as exclusive content to justify the price – with music effectively being free elsewhere if downloaded illegally.

Research more focused on predictive factors has spawned a wealth of individual differences, including gender and age (Malin & Flowers, 2009; Mishra, Akman & Yazici, 2006), with the profile of the "music pirate" being a young male. There has been a rise in deluxe and remastered versions of albums in recent years (representing the sort of added value desired by consumers, as noted above), with research by McIntyre (2011) suggesting a preference for recorded music in general amongst older music fans. Such relics are likely to appeal to a minority of music fans, given the perceived increased value and functionality of digital music such as convenience/economic utility and storage utility (Kinnally, Lacayo, McClung & Sapolsky, 2008), which have also been identified as predictive factors of piracy engagement.

Attitudes toward DP, the frequency of past DP behaviors, and the motivations and intentions underlying DP (Taylor, Ishida & Wallace, 2009) have been established as predictive factors. Crucially, the intention to swap music online has been demonstrated as depending on one's attitude toward music piracy, one's perception that important others want that this behavior be performed, and one's perceived competency in doing so (d'Astous et al., 2005). This finding is consistent with the theory of planned behavior (see Ajzen, 1991), which argues that an attitude towards a particular behavior, in conjunction with subjective norms and perceived behavioral control, shape an individual's intentions to perform this behavior (and the behavior itself). As such, music piracy emerges as a largely considered activity. This is notable as impulsivity, by contrast, is typically over-represented amongst criminal populations.

As such, and given that it has been largely neglected in piracy research, personality is of interest as a potential predictive factor. Research findings suggest that Costa & McCrae's (1992) "Big Five" model of personality (a trait approach to personality comprising five broad domains of human personality) and particularly the domains of Neuroticism, Openness to Experience, and Extraversion, mediates individuals' choice and motives for listening to music (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic, Swami, Furnham & Maakip, 2009; McCown, Keiser, Mulhearn & Williamson, 1997; Rentfrow & Gosling, 2003). More recently, personality has been found to moderate the perception of emotion in music (Vuoskoski & Eerola, 2011a, 2011b), representing the influence of personality in music listening. More directly related to music piracy is the finding that lower willingness to buy counterfeit goods has been shown to be moderated by conscientiousness (Swami, Chamorro-Premuzic & Furnham, 2009).

Corroborated by Egan & Taylor (2010) in their research into unethical consumer behavior and shoplifting, other personality traits have been identified as predictors. An expanding area of research, investigation into personality and consumer behavior would benefit from a consideration of music piracy as it does not fit conventional models of theft in as much as individuals engaging in piracy actively share copyrighted content with others. As such, piracy is a fundamentally social activity.

Building on the so-called "Big Five" (Costa & McCrae, 1992), Lee & Ashton's (2004) HEXACO PI-R and in particular the honesty–humility dimension, has been shown to more strongly predict outcomes that may be associated with disinhibited behavior, with individuals reporting low honesty–humility tending not to feel bound by conventional rules and restrictions, increasing their likelihood to violate societal conventions, laws, and norms (Weller & Tikir, 2011). With six broad domains of personality, the HEXACO PI-R is closely modeled on other trait approaches. It is the honesty–humility dimension that elevates it above others in terms of its suitability to

considering music piracy, with Weller and Tikir explaining that the honesty–humility dimension showed the strongest associations with behaviors that offer rewards that are generally considered to run counter to moral and legal conventions, and is unrelated to social risk-taking behaviors that are considered more socially acceptable. The applicability of this dimension to understanding piracy therefore appears optimal.

Research questions

The present research aims to draw together the two conventional lines of research in music piracy – deterrents and predictive factors – in a novel way, by exploring: the impact of positive incentives on attitudes towards music piracy and whether personality is a predictive factor in attitudes towards music piracy. The research also aims to measure attitudes towards music piracy using a new instrument, to minimize bias (see "Materials", below).

Method

Design

The study employed an experimental design with participants allocated to one of four conditions (between-subjects) before responding to questionnaire items (within-subjects), which included an original measure, the AMP-12 (see Appendix A) and the 60-item version of the HEXACO PI-R (Lee & Ashton, 2004). In three of the conditions, participants were exposed to brief paragraphs outlining positive incentives in purchasing music legally (see Appendix B in the supplemental material section). A fourth condition served as a control with no exposure to any text. The online survey software used was Survey Gizmo.

Participants

Opportunity sampling was adopted with participants recruited using email subscriptions and online research websites. A final sample of 261 participants was used in data analysis representing 73.94% of the initial sample brought forward. Participants from the original sample were deleted for various reasons including multiple submissions, not processing materials carefully, and high volumes of missing data (see "Data analyses", below). The final sample consisted of 119 males (45.60%) and 142 females, with a mean age of 26.34 (SD = 8.83) and an age range of 15–69. The median of 24 was used to dichotomize age for the purposes of analysis. Participants were almost evenly distributed across conditions: 31.40% to the legal sales of music encourage future live performances condition; 21.80% to the legal sales of music will allow fans greater access to exclusive content condition; 22.20% to the legal sales of music will incorporate charitable donations condition and 24.50% to the control. Participants were assigned on a quota basis; where the almost even distributions stem from the deletion of participants in the original sample. A small prize draw incentive was offered for participation.

Materials

A questionnaire was designed, presented as an attitudes survey. The questionnaire was designed in such a way as to minimize potential bias by avoiding using the word piracy, rather exploring the impact of technology on how music is now consumed.

Positive incentives/conditions. To test the potential impact of positive anti-piracy messages or positive incentives to purchase music legally, a series of vignettes (conditions) were devised. Vignettes were based on a previously established research paradigm by d'Astous et al. (2005). The first two vignettes, the "legal sales of music encourage future live performances" and "legal sales of music will allow fans greater access to exclusive content" depicted the particularly vague anti-piracy sentiments found in popular media, which offer positive reward to participants. The third vignette, the "legal sales of music will incorporate charitable donations" was designed to offer an incentive with a clearer impact, offering positive rewards that also benefit others. In each of the experimental conditions, particular incentives were presented as a likely result of future engagement in legal purchasing of music – the opposite of d'Astous et al.

Personality instrument (HEXACO PI-R). Personality was measured by means of the 60-item version of the HEXACO PI-R (Lee & Ashton, 2004) which explores six major dimensions of human personality: (a) *Honesty–Humility*, (b) *Emotionality*, (c) *Extraversion*, (d) *Agreeableness (versus Anger)*, (e) *Conscientiousness*, and (f) *Openness to Experience*. These dimensions (or *facets*) comprise various *factors*. For example, the Honesty–Humility facet is composed of the factors Sincerity, Fairness, Greed-Avoidance and Modesty. This allows for more detailed consideration of various aspects of personality. Participants are required to indicate their level of agreement with items on a five-point scale from *strongly agree* to *strongly disagree*.

De Vries, de Vries & Feij (2009) explain that the addition of Honesty–Humility in the model better explains sensation-seeking and risk-taking than alternative trait models, especially through its relationship with disinhibition. Additionally, Weller et al. (2011) demonstrate that the Honesty–Humility dimension showed the strongest associations with behaviors that offer rewards that are generally considered to run counter to moral and legal conventions. While the HEXACO PI-R (Lee & Ashton, 2004) is therefore argued as an appropriate measure of personality to be considered in the context of music piracy, the dearth of research on this topic does not allow for hypotheses to be formulated in any particular direction.

Attitudes towards music piracy scale (AMP-12). An original scale (presented as "Attitudes towards the impact of new technologies on how we access music") was created to fill the specific research purpose of minimizing the potential biases of self-report methodology. Further to a pre-test on a sample of 20 participants using 16 items (8 pro-piracy statements, 8 anti-piracy statements), both scales achieved good reliability of above .70 using Cronbach's α upon the deletion of two items in each scale. This led to the creation of six-item sub-scales. These sub-scales were significantly and negatively correlated ($r = -.45^*$, $p < .001$, 2-tailed) where anti-piracy items were reversed to give a new 12-item scale measuring participants' propensity to agree with pro-piracy statements. All AMP-12 scores were created using means. This new scale was demonstrated as reliable using Cronbach's α (.75) and is deemed to display suitable content validity and predictive validity with the notable advantage of not asking participants to self-report actual piracy engagement, thus minimizing social desirability. Given the intention to pirate has been convincingly (using actual file-sharing data) established as predictor of engagement in piracy (Taylor, 2012), the instrument is regarded as appropriate for the aims of the research.

Procedure

Participants were asked to complete an online questionnaire, where a brief background to the study itself was first provided on a page outlining the nature of participants' involvement.

Whilst no "seriousness checks" (see Reips, 2002) were presented emphasizing the importance of study (as a means to minimize dropout), the dropout rate was low.

After a short section requesting demographic information, participants were asked to report their favorite music format, from the set list of: *CD, digital* and *vinyl*. Participants were then presented with an explanation of the scale used in scoring personality, followed by the personality items of the 60-item version of the HEXACO PI-R (Lee & Ashton, 2004). At this point, participants were allocated to one of the four conditions, where a background text was presented (or not, in control condition). AMP-12 questions then followed, presented in a random sequence. This marked the end of the questionnaire, where participants were thanked for their involvement. After a quota was reached, the link was removed.

Data analyses

Of the entire dataset, 8.05% contained missing values, exceeding Schafer's (1999) recommended 5% as the cut-off. As such, the pattern of missing variables was considered, addressing Schlomer, Bauman & Card's (2010) review of the pattern of missingness as a more likely indicator of the severity of the missing data. Little's MCAR test was conducted ($\chi^2 = 4090.30$, $df = 4113$, $p > .05$) where the non-significant finding suggests the data to be missing at random (MAR) or missing completely at random (MCAR). Hypothesis testing was carried out on a mean substitution dataset, which gave equivalent results to a listwise deletion and multiple imputation dataset.

Results

Can positive anti-piracy messages manipulate attitudes towards music piracy?

In order to test the hypothesis that attitudes towards piracy would differ as a result of which positive anti-piracy argument participants were presented with, a one-way between-subjects ANOVA was conducted. The independent variable was condition and the dependent variable was mean scores on the AMP-12. There was a non-significant effect of condition ($F(3, 257) = .27$, $p > .05$, $\eta_p^2 = .00$) on AMP-12 scores. As no observable differences were found between scores as a result of condition, no follow-up tests were conducted.

Hierarchical regression model

A hierarchical regression analysis was performed to explore the predictive capacity of variables of interest on AMP-12 scores. In step 1, the six facet scores of the personality inventory used were entered as predictors. The model was significant (adjusted $R^2 = .09$, $F = 5.43$, $p < .001$). Participants scoring higher on the AMP-12 scored lower on Honesty–Humility, Conscientiousness and higher on Openness facets. In step 2, demographic variables (age and gender) were entered into the model as predictors, on the basis of being significant predictors in other studies. This model was significant (adjusted $R^2 = .12$, $F = 5.47$, $p < .001$). Whilst no differences were observed amongst males and females, participants 24 years old or younger demonstrated higher scores on the AMP-12, in line with previous research findings. In the final step, preference for digital music was entered into the model as a predictor, on the basis that music piracy is most easily accessed in digital formats (online). The model was significant (adjusted $R^2 = .18$, $F = 6.58$, $p < .001$). Participants favoring digital music scored higher on the AMP-12, as expected. Table 1 summarizes the regression analyses.

Table 1. Hierarchical regression of predictive factors on AMP-12 scores†.

	Regression on variable	*T*	R^2 adj.
Step 1: HEXACO[a]			.09
Honesty–Humility	.15*	–2.35	
Conscientiousness	.19**	–2.97	
Openness	.25***	4.10	
Step 2: Demographics[b]			.12
Age	.17**	–2.82	
Step 3: Format preference			.17
Digital	.23***	3.97	

Note. † (*N* = 261); a = Variables excluded: *Extraversion; Emotionality; Agreeableness;* b = Variables excluded: *Gender.* *p < .05 (2-tailed), **p < .01 (2-tailed), ***p < .001 (2-tailed).

Table 2. Correlation between AMP-12 and HEXACO PI-R factor scores.

AMP-12	Fairness[a]	Organization[b]	Diligence[b]	Creativity[c]	Inquisitiveness[c]	Unconventionality[c]
Pearson correlation	–.34***	–.16**	–.15*	.16*	.16*	–.16**

Note. a = *Honesty–Humility*; b = *Conscientiousness*; c = *Openness;* *p < .05 (2-tailed), **p < .01 (2-tailed), ***p < .001 (2-tailed).

Exploring personality further, the Honesty–Humility factor of Fairness was observed to be significant using ANOVA ($F(1, 256) = 41.84$, $p < .001$, $\eta_p^2 = .14$) with participants scoring higher on the AMP-12 scoring lower on this factor. As such, participants favoring music piracy could be argued as being less fair. Table 2 presents correlation scores on all of the factor scores from the three significant facets of Honesty–Humility, Conscientiousness and Openness, with Fairness having the highest correlation coefficient. This test, correlating seven items novel to the HEXACO PI-R, sheds further light on the relationship between personality and attitudes towards DP.

Discussion

This study aimed to draw together two prominent lines of research on music piracy – deterrents and predictive factors. These two particular areas shed light on who engages in piracy and the relative success and failures of approaches to amend the behaviors of these individuals. The research also aimed to introduce potential new predictive factors and individual differences, using an original construct (the AMP-12) to unobtrusively measure attitudes toward music piracy. The study also builds on research into personality and consumer behavior.

The results do not support the hypothesis that positive anti-piracy messages can be used effectively to manipulate attitudes towards music piracy. Modeled on d'Astous et al. (2005) who used anti-piracy vignettes containing conventional punitive messages, the results suggest that anti-piracy messages, even framed in a positive way, are not a valid resource to amend piracy attitudes and behaviors. The ease of engaging in piracy behaviors has likely generated a habitual pattern of illegal music consumption activity, and as such, superficial messages aiming to persuade individuals to change their behaviors are unlikely to address root causes of piracy

motivations. Without further exploration, however, this assumption remains speculative. The approach taken in this study may prove to be successful if implemented in a real-life context, perhaps made salient at frequent intervals throughout a particular "piracy session".

Findings on the HEXACO PI-R (Lee & Ashton, 2004) add substantially to literature on predictive factors, proposing a personality profile of individuals favoring music piracy. Such individuals scored low on Honesty–Humility, low on Conscientiousness and high on Openness: to levels of statistical significance. A lower score on Honesty–Humility amongst these individuals is intuitive, given that piracy is an unfair activity that does not ensure copyright owners secure the profits they are legally entitled to. Unfairness emerged as the key factor contributing to the significant finding of lower scores on the Honesty–Humility facet, with the significant results supporting the decision to use the HEXACO PI-R over alternative trait models (with this facet being unique to the model). Jambon & Smetana (2012) observed using an online survey that the majority of their sample indicated that the current price of music is unfairly high, with 90% of participants suggesting that music should cost no more than $10/CD or 30c/song. The authors note that the belief that the music industry treats its musicians unfairly may have an influence on the way individuals approach downloading. As such, the relationship between unfairness and piracy appears to be a complex one and is explored in some depth later.

A lower score on conscientiousness amongst participants observed using the AMP-12 as holding more pro-piracy attitudes is less intuitive. Individuals scoring low on this facet would be expected to be more careless, making decisions impulsively. As has been stated previously, findings from literature point towards engagement in piracy as a largely considered activity (see Holt & Copes, 2010). Findings on conscientiousness are, however, consistent with Swami et al.'s (2009) finding that lower willingness to buy counterfeit goods is being moderated by the trait.

The most compelling outcome of the exploration into personality is that higher scores on openness predicted pro-piracy attitudes. Such participants can be assumed to be more open to experiencing music in its many forms, with music piracy merely facilitating this. Indeed, preference for digital music was a significant predictor of pro-piracy attitudes where it is likely that the ease of exchanging digital music illegally encourages a preference for this format.

To add to the literature on age, and to move beyond more obvious reasons such as an increased familiarity and competence with computing, music plays a particularly strong role in the lives of adolescents and young adults, such as helping the formation of identities and meeting emotional needs (see North, Hargreaves & O'Neill, 2000). As such, this group may have stronger motivations to listen to a wider variety of music than older populations. This observation suggests that the motivations for younger individuals to engage in music piracy come from needs, not wants. This is a controversial (though informed) suggestion and it requires empirical support.

Returning to the issue of unfairness, de Vries et al. (2009) have established that unfairness was strongly related to disinhibition, as measured using the 52-item Sensation Seeking Scale (Van den Berg & Feij, 2002). As such, the negative relationship between fairness and pro-piracy attitudes observed in the present study could be mediated by the disinhibition effect of the internet, where much music piracy occurs. As explained by Brown (2013), the most common technique to rationalize DP is the *denial of injury* (see Sykes & Matza, 1957). In other words, with offline consequences to online behaviors being difficult to perceive, it is easier to underestimate or even reject the negative outcome of engaging in piracy. As such, and with links made between unfairness and dishinbition, future research could explore personality in more depth to reveal the underpinnings of this complex area that holds the potential to inform suitable deterrent approaches.

Limitations

With 80% of the sample being 30 or younger, the study represents a limited improvement over the majority of research into piracy that draws from student samples. Popham (2011), however, has demonstrated the usability of undergraduate-based research as predictive of electronic music piracy in the general public. On a related note, the relatively small sample cannot be readily expected to represent wider populations. The non-significant results in the experimental component of the study may also be attributable to the use of survey methodology, and specifically the lack of control in ensuring participants paid close attention to the vignettes. Whilst the study measured attitudes towards music piracy and not actual behavior, attitudes towards piracy have been established as a predictor of engagement in piracy. Additionally, an original instrument which improves upon conventional self-report measures was utilized, which sought to minimize social desirability. Irrespective, self-report methodology was employed where a variety of unique difficulties threaten direct measurement of actual DP behaviors (see Hargreaves, 2011).

Concluding remarks and recommendations for future research

Given the volume of predictive factors associated with music piracy, future anti-piracy messages could adopt a segmented or targeted approach. Findings such as females possessing higher risk perceptions and a readiness to pay for legal alternatives along with responding to enforcement actions and economic incentives with greater consistency (Chiang & Assane, 2008), could help inform a sensible framework with which to undertake such a bold move, targeting males and females independently. This approach is common practice amongst persuasion campaigns in a healthcare setting. Such a proposal is illustrative of the need for cross-discipline research into music piracy, with this one suggestion incorporating psychological, legal and marketing components. Using more naturalistic settings, individuals engaging in music piracy could be exposed to various anti-piracy messages when online (such as banner advertisements on Facebook). This approach could minimize the disinhibition effect of the internet and remind individuals of the negative consequences of their actions.

With research into music piracy dominated by criminology, law and economics, qualitative research is scarce. The few studies that have used interviews, for example (see Moore & McMullan, 2009, for example) demonstrate that individuals engaging in music piracy are more than willing to discuss their behaviors. In order to take advantage of this, research must move away from merely a consideration of commercial aspects of music piracy. To this end, more traditional music psychology research into music preferences could incorporate music piracy into its aims – thus re-positioning music piracy into a partially de-criminalized everyday context (and shedding light on the claims made above).

A consideration of moral reasoning (an emerging area of music piracy research) could potentially help unpack the observed role of unfairness as a predictor in more depth whilst opening up the practicality of a gender-segmented approach. With females being more likely to be reciprocal (Dohmen, Falk, Huffman & Sunde, 2008), moral reasoning may help account for the consistent gender differences observed in music piracy research (though not in the present study). In Marshall's (2002) words: "The industry has to persuade the public that infringing copyright on the Internet is wrong" (p. 2). Continuing with the link between fairness and piracy, Jambon & Smetana (2012) demonstrated that judgments on illegal downloading varied when concerns on the fair pricing of music and the structure of the music industry were made salient, indicating a need for a deeper understanding of the ethics and morality of music piracy.

Given Dilmperi, King & Dennis's (2011) observation that live music is the only paid-for music that is rising, future research should investigate the changing preferences for music consumption more broadly and the mediating role music piracy plays on music discovery and subsequent live concert attendance.

With the increased preference for digital music (observed in the present study as predictive of pro-piracy attitudes), and in light of the non-significant findings of the deterrent approach in this study, it is recommended that future strategies to tackle music piracy should centre on meeting the demands of consumers rather than attempt to isolate them. Curien & Moreau (2009) explain that piracy allows for a high volume of consumers to access music at a low cost – the template for recent subscription services. The future of the music industry will undoubtedly revolve around the internet as the principal means with which music is accessed legitimately – the same technological advancement that was once feared as the enemy of recorded music.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Supplemental material

Appendix B (experimental vignettes) is available on the journal website: msx.sagepub.com/supplemental.

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Appendix A: Attitudes Towards Music Piracy (AMP-12) Scale

On the following pages you will find a series of statements about you. Please read each statement and decide how much you agree or disagree with that statement. Then write your response in the space next to the statement using the following scale:

1 = strongly disagree
2 = disagree
3 = neutral (neither agree nor disagree)
4 = agree
5 = strongly agree

1. Music fans should be allowed to take advantage of technological advances which enable them to access music in new ways
2. Music must be paid for in order for the future of recorded music to survive [R]
3. Artists deserve to profit from their recordings when they appear online [R]
4. Fans should be able to listen to their favourite artists when they choose
5. Burning a CD compilation for a party is a right
6. Legal action should be taken against those who download music illegally [R]
7. Individuals who do not pay for music do not care about music [R]
8. The experience of music is reduced without purchasing hard copies with liner notes and artwork [R]
9. Sharing music online is a useful way of discovering new artists
10. Internet monitoring laws should not be applied to ordinary citizen
11. Downloading music without paying robs the artist of creative control [R]
12. If I could access music ahead of its official release, I would want to hear it

Note. [R] denotes items to be reversed to produce one 12-item pro-piracy attitudes scale. Randomisation is encouraged.