The Effects of Music Genre on Young People’s Alcohol Consumption: An Experimental Observational Study

Rutger C. M. E. Engels¹, Evelien A. P. Poelen¹, Renske Spijkerman¹ and Tom Ter Bogt²

¹Behavioural Science Institute, Radboud University Nijmegen, Nijmegen, The Netherlands; ²Department of Social Sciences, Utrecht University, Utrecht, The Netherlands

The aim of this study was to test whether exposure to specific music genres in a social drinking setting leads to differences in drinking levels. An observational experimental design was used in which we invited peer groups of young adults into a bar lab, a lab which is furnished like an ordinary, small pub. Between two tasks, people had a break of 50 minutes in which they could order nonalcoholic and alcoholic beverages. During the break, participants were exposed to a specific music genre: popular, hard rock, rap, or classical music. Those groups who were exposed to classical music drank significantly more alcohol than those who were exposed to other music genres. This pattern is quite robust and does not depend on participants’ sex or age, drinking habits, own music preference, and relative importance of music in participant’s lives. The study’s limitations are mentioned.

Keywords peers, alcohol use, music, experiment

INTRODUCTION

Music has several functions in people’s daily lives; it can be deliberately used to feel and to become energized, to deal with negative emotions and experiences, or just to relax (Sloboda, O’Neill, & Ivalid, 2001). The impact of music also depends on the company people are with, where they are, and whether listening to this music is their own choice (North, Hargreaves, & Hargreaves, 2004). Nowadays, music has infiltrated almost every aspect of daily life, even when we are not noticing it. For example, the music to which we are exposed in everyday commercial environments such as stores, elevators, and restaurants where music is used to influence our consuming behavior. A nice example of the impact of music can be found in the work of North and Hargreaves (1999) in which they conducted a study about the effects of different types of music in a student cafeteria and concluded that classical music led to a perception of the cafeteria as being an upmarket and stimulated intentions to spend money on food and drinks. Furthermore, Areni and Kim (1993) documented that customers in a wine cellar, while hearing classical music, while not purchasing more bottles of wine, actually bought more expensive wine. In general, music is used in shopping areas as a mood enhancer and as a stimulator of consumption (e.g., Alpert & Alpert, 1990).

One of the most significant occasions for young people to drink is in the public sphere, in bars, pubs, and discos. People tend to go out with friends and choose to visit places of entertainment that reflect their shared taste of music. Venues are well aware of the importance of music for their clientele, and in order to attract a crowd, playing certain types of music is often a key part of their marketing strategies (Forsyth & Cloonan, 2008). Observational studies have shown that music is used to attract customers, to get them into a pleasant mood through playing songs that fit their expectancies of a night out and provide the aural decor for socializing, flirting, dancing, and drinking, and, last but not least, to get rid of unwanted (aggressive) customers by using “boring,” low tempo music (Forsyth & Cloonan, 2008; Purcell & Graham, 2005). Relatively little research has been done about the impact of music on alcohol consumption in public drinking places. A well-known study by Bach and Schaefer (1979) indicated that the rate of alcohol consumption in bars might be linked to the tempo of music: the tempo of country music was inversely related to drinking speed.

Survey studies have shown that music preference is linked to substance use patterns among young people. Forsyth, Barnard, and McKeeganey (1997) showed that rave music was positively related to the use of all kinds of legal and illegal substances, including alcohol among
Scottish youths. A Canadian study on music genres and deviant behaviors points to the significant links between rap music and deviant behaviors such as violence, aggression, “soft drugs,” and alcohol use (Miranda & Claes, 2004). Further, a study among US youth showed that heavy metal fans are more often engaged in reckless behaviors, such as drunk driving, unsafe sex, drug use, and minor criminal activity (Arnett, 1991; see also Stack, Gundlach, & Reeves, 1994; Took & Weiss, 1994). A study among a large representative sample of Dutch adolescents showed that the highest levels of externalizing problem behaviors were displayed in die-hard fans of heavy metal and rap music and lowest levels of problem behaviors in fans of classical music (Ter Bogt et al., 2005). Mulder et al. (2009) found more alcohol and tobacco use among Dutch fans of louder, more energetic music, such as punk, hardcore, and techno, while fans of pop and classical music showed the lowest substance use levels.

There are various explanations concerning how music preference is linked to alcohol use in young people. According to Miranda and Claes (2004), the relationship between rap music and deviancy might be explained by the fact that adolescents assimilate the values that are communicated through rap songs. The negative public opinion on rap—as well as hard rock and heavy metal music—lies partially in the lyrical content of these music styles. The references in lyrics to violence, drug use, sex, the occult, and suicide might drive teenagers to mimic these behaviors and could promote antisocial behavior among listeners (Fried, 2003). Herd (2004) explored the role of changing images of drinking and alcoholic beverages in rap music. She found that songs with references to alcohol increased fivefold (from 8% to 44%) from 1979 to 1997. A substantial increase in references to positive attitudes occurred in the mid- to late 1990s, opposite to a strong decrease in negative descriptions of alcohol. Rap songs after the 1990s increasingly focused on using alcohol to signify glamour and wealth. They also showed a significant increase in the references to using alcohol for recreational purposes and using alcohol with illicit drugs. Other research revealed that watching music videos frequently is linked to regular alcohol use among young people, and argue that the positive portrayal of problem behaviors such as substance use is accountable for this association (e.g., Roberts, Henrikson, & Christenson, 1999; Van Den Bulck & Buellens, 2005). It should be stressed that in all these correlational or descriptive studies, no causal interpretations can be made.

Robinson, Chen, and Killen (1998) give an alternative explanation to the link they found between listening and watching music videos and alcohol use. They argue that high-risk youngsters—those who are more likely to become future drinkers based on other factors such as personality characteristics or family drinking—could also be those who are more attracted to television and thus music videos. Also Forsyth et al. (1997) state that it is likely that, rather than listening to music, identifying with certain music genres and youth subcultures, such as rave music, encourages substance use. In sum, the explanations for the link between music genre and problem behaviors such as alcohol use are primarily the following: the explicit lyrics as well as the context of music videos explicitly promote drinking, and subgroups of risky youngsters are attracted to specific music genres.

A research problem exists about the link between music and alcohol use; most studies use correlational designs that do not permit causal relationships to be drawn. To test whether listening to specific music genres really leads to lower or higher drinking levels, experimental designs can be helpful. To the best of our knowledge, little research exists that has been able to test this assumption. Further, in our opinion, it is essential to conduct experimental observational studies in a naturalistic setting in order to assure the external validity of the findings, as well as to have generalizable knowledge about the necessary conditions for the targeted processes to operate or not to operate. In the current study, we test whether exposure to specific music genres (heavy metal, pop, rap, and classical music) in a bar setting results in variations in drinking levels. Therefore, we aim to look at the immediate effects of music on acute alcohol consumption, rather than examining the long-term effects of exposure to specific music styles on alcohol use. In line with the findings of survey studies, we assume that young people, in particular, who are exposed to heavy metal and rap music are more likely to drink alcohol in a social setting as compared with those who are exposed to pop music. Additionally, we expect that listening to classical music will lead to the lowest drinking levels, as this has not been associated with enhanced levels of alcohol consumption in research before.

**METHOD**

**Sample Characteristics**

Participants were 249 young adults who agreed to participate in a study about alcohol and group performance. We decided to focus our research upon peer groups as the fast majority of young people normally drink with their friends in public drinking places and at parties (Engels, Bot, Van Der Vorst, Meeus, & Granic, 2011). Thirty-two groups of approximately eight people per group were enrolled (procedure: see below). A total of 136 men (54.6%) and 113 women (45.4%) participated, ranging from 17 to 34 years old. The mean age of participants was 21.2 years ($SD = 2.47$). The majority (82.7%) reported to live in their own apartment or in a dormitory, with a friend or with their partner, and 12.4% indicated that they lived with their parents/caregivers. Of all peer groups, 5 groups existed exclusively of men (15.6%) and 3 groups existed exclusively of women (9.4%). The other groups (75%) were mixed by gender.

Our study had a four-factor (pop, hard rock, rap, and classical music) between-subjects design. A total of 52 participants (20.9%) were enrolled in the pop music condition, 70 participants (28.1%) in the hard rock music condition, 63 participants (25.3%) in the classical music condition, and 64 participants (25.7%) in the rap music condition. The rock music condition contained heavy
metal and hard rock music, which was selected from several heavy metal and rock CDs. None of these rock songs were ever included in the Top 40 music charts of the Netherlands. This was done because otherwise the songs could be interpreted as pop music. The same was done for the rap condition and the classical condition. The pop condition contained music selected from the main music charts in the Netherlands, from November 2005 until December 2005.

Procedure
Most participants were recruited by flyers handed out to them on the Radboud University campus in the Netherlands in 2009. A smaller part of the participants was recruited by an e-mail that was sent to their university e-mail addresses. The focus was on men and women between the ages of 18 and 25 years, preferably first-year students. Potential participants were told that the experiment was about alcohol use and group functioning and that they therefore had to contact seven friends or college mates who were also willing to participate. This was a cover story in order to avoid that participants were aware of the actual aims of the study—the influence of music on drinking.

Participants were invited for an experimental session that lasted for 2 hours and took place in a bar laboratory at our campus. This lab looks like an ordinary small pub and contained a bar and stools, several tables, a billiard table, table soccer, several chairs, a couch, and TV/video (for detailed description, see Bot, Engels, & Knibbe, 2005; Bot, Engels, Knibbe, & Meeus, 2007; Harakeh, Engels, Van Baaren, & Scholte, 2007; see Figure 1). When participants entered the bar laboratory, the experimenter explained the procedure. Participants were told that the video and audio recordings that were conducted during the session would be exclusively used for research purposes, and participants had to fill in an informed consent form. We also told them that after the session was ended, they would receive 30 Euros as a reward for their participation and would be brought home by a taxi. They also had to sign a form that stated that any participation in traffic after the experiment would be their own responsibility.

Next, the participants were asked to fill out a questionnaire. This took about 15 minutes. After completion, participants were asked to sit together at a table behind a TV screen, and completed a task consisting of ratings of intelligence and attractiveness (on a scale of 1–10) of pictures of 10 persons on the screen (see Bot et al., 2005). They were told to discuss their ratings with each other in between two pictures. After completing this first task, the participants had a break of 50–60 minutes. They were told that during this break, they would have to stay in the room but they could order (alcoholic) drinks and play billiard, table soccer, a card game, or just to chat. If participants asked for the reason to stay in the bar lab, the experimenter answered that we aimed to keep conditions systematically stable across all sessions. They could only leave to go to the bathroom. They could order a drink at the bar, but the bartender would not offer them anything explicitly. In this way, we could conclude that drinking only resulted from the participant’s personal request. Alcoholic beverages and nonalcoholic drinks were available for free. It is relevant to mention that alcoholic drinks are relatively cheap in the Netherlands, especially considering the income of students. For example, in ordinary bars or restaurants, the price of a 0.25 centiliter beer does not exceed 2.00 Euros. This implies that offering drinks for free does not necessarily encourage excessive drinking for the majority of Dutch youngsters. Nuts and chips were offered for free as well.

During the break, one of the experimenters took place behind the bar and the other experimenter took place in the observation room. In the observation room, the experimenter had access to two different cameras (one flexible with a zoom and one steady), which he/she could move around to see and record everything that happened in the bar lab. As soon as the break started, the experimenter turned on the CD player with one of the music genres. The volume was kept stable over the different sessions. When participants asked for different music, the experimenter answered that music had to be kept stable over the different sessions and that therefore they could not change the CD or switch to a radio channel. Participants were told that smoking was allowed in the bar lab and that they were allowed to use the toilet down the hall. The experimenter behind the bar took care of the drinks, which the participants ordered. They could order several sodas, beer, red and white wine, rum–coke, and (berry) gin. The hard liquor drinks were mixed with soda or orange juice. The choice for the four kinds of alcoholic beverages was based on the fact that these are the most popular alcoholic drinks consumed by Dutch youngsters in public drinking places (www.trimbos.nl). We stressed that they were not obliged to drink alcohol, because nondrinkers or light drinkers were also of interest for our study. The bartender made sure to have as little contact with the participants as possible so that the participants would mainly focus on one other.

Both experimenters recorded the number of drinks each participant consumed during the break. When one of the participants had finished a total of eight drinks, the

![FIGURE 1. Bar lab.](image)
experimenters ended the break, regardless of the length of the break at that moment. If none of the participants reached the maximum number of drinks, the experimenters ended the break after approximately 50 minutes. The participants were then told that they could finish their drinks but they were not allowed to order any more, and they were asked to be seated at the table for the second task. During the second task, they had to rate 10 different pictures of persons about their intelligence and attractiveness again. After the second task, they were asked to fill out a second questionnaire that consisted of questions about music preference, importance of music, and the influence of music on their mood (see below). After that they were paid 30 Euros per group, thanked, and escorted to the taxi(s). Debriefing took place when all 32 sessions were done. The medical ethical committee (CCMO Arnhem-Nijmegen) approved of the protocols which we generally use (see Bot et al., 2005) in the bar lab studies.

Pilot studies were conducted to verify the credibility of the setting and procedure (see Bot et al., 2005). Participants strongly endorsed the setting’s credibility and not one of the participants in the 32 sessions in the pilot studies guessed the actual aim of the study.

Measures

**Observed Drinking Levels.** The number of drinks that the participants drank during 50 minutes in the bar lab was observed by both experimenters and all sessions were taped on DVD. In all sessions, the same type of glasses were used and filled to the same level. Rum and gin were first poured into a small glass to indicate the same amount for each participant. The exact amount of grams of alcohol consumed was measured for each participant afterward. Beer contained 7.5 g of alcohol, wine contained 15 g of alcohol, rum contained 15 g of alcohol, and gin contained 6 g of alcohol per glass. We used the codings of the two experimenters per session as a database, and inconsistencies in reports were checked with the video recordings. It should be stressed that it was quite easy for both experimenters to observe what people drank, resulting in high agreements (see Bot et al., 2005; Harakeh et al., 2007).

**Self-Reported Alcohol Use.** First, participants were asked to indicate whether or not they had ever consumed alcohol. The participant’s age when they had their first sip of alcohol was also measured (see Engels, Knibbe, & Drop, 1997). Binge drinking was assessed by the number of times they drank more than six alcoholic drinks on one occasion in the past year. We used a 7-point Likert scale, with responses ranging from 1 “never” to 7 “more than 2 times a week” (Bot et al., 2005). The level of problems due to alcohol consumption was measured on a short version of the severity of problem drinking scale of Cornel, Knibbe, van Zutphen, and Drop (1994). This scale consisted of six dichotomous items such as “Have you ever tried to quit drinking without being successful?” (1 “no” and 2 “yes”). Finally, the participants were asked to indicate the number of alcoholic drinks they had on each day of the past week (Hajema & Knibbe, 1998). We summed this to obtain a measure of weekly drinking.

**Music Preference.** Participants were asked to indicate the extent to which they liked the genres heavy metal, pop, classical music, rap, house/trance, hip-hop, rock, gothic, techno/hard house, and Dutch pop on a 5-point scale ranging from 1 “absolutely not” to 5 “absolutely yes” (Ter Bogt, Raaijmakers, Vollebergh, Van Wel, & Sikkema, 2003). For the purpose of this article, rock and heavy metal genres were combined to allow comparison with the experimental conditions.

**Music Centrality.** The importance of music in participant’s lives was measured using a 5-item scale (“I can not live without music,” “I am influencing my friends by my music taste,” “I talk a lot about music with my friends,” “I am always looking for new music,” and “I know more about music than my peers”) with response categories ranging from 1 “absolutely not” to 5 “absolutely yes” (Ter Bogt, 2005). Cronbach’s alpha was .82.

RESULTS

**Alcohol Use: Self-Reports and Observations.** During the break, alcohol consumption of the male participants was higher than that of the female participants (in grams alcohol: $M = 45.97$, $SD = 17.26$ versus $M = 31.79$, $SD = 17.60$; $t(249) = 6.40$, $p < .001$). In terms of the number of alcoholic drinks consumed, men drank on average 5.75 glasses ($SD = 2.01$) and women 3.55 ($SD = 1.51$) ($t(249) = 9.46$, $p < .001$). There were a small group of participants not drinking alcohol at all, and none of the participants had eight or more glasses. No sex differences were found on the number of soft drinks consumed. Men drank more glasses of beer ($M = 4.87$, $SD = 2.70$) than women ($M = 1.12$, $SD = 2.10$) ($t(249) = 12.01$, $p < .001$), whereas women drank more wine ($M = .66$, $SD = 1.34$) and mix drinks ($M = 1.64$, $SD = 1.60$) than men (wine: $M = .10$, $SD = .52$; mix drinks: $M = .69$, $SD = 1.43$) ($t(249) = 4.49$, $p < .001$ and $t(249) = 4.92$, $p < .001$, respectively for wine and mix drinks).

Self-reports indicated that men consumed more alcohol than women during the week before the experiment. Male participants reported a mean alcohol consumption during the past week of 29.43 ($SD = 23.17$); for females this was 13.95 ($SD = 14.30$) ($t(249) = 6.19$, $p < .001$). In terms of binge drinking, 27.2% of the men reported binge drinking (>6 glasses per occasion) more than twice a week compared with 7.1% of the women ($\chi^2(6, 249) = 42.89$, $p < .001$).

Participants who reported high levels of weekly drinking also consumed more alcohol in the bar lab. Pearson correlation of number of drinks consumed in the bar lab with weekly consumption was .53, $p < .001$, and with frequency of binge drinking .52, $p < .001$, with no differences between men and women.

No differences were found on sex and age distribution, and problem drinking between conditions. Differences were however found on weekly consumption between participants in the pop ($M = 31.88$, $SD = 26.61$).
and classical music conditions ($M = 25.44, SD = 18.69$) on the one hand, and rap ($M = 15.98, SD = 13.07$) and hard rock conditions ($M = 16.80, SD = 14.95$) on the other ($F(3, 246) = 9.76, p < .001$). Differences were also found on the frequency of binge drinking between conditions with participants in the classical music condition ($M = 5.76, SD = .89$) and hard rock condition ($M = 5.01, SD = 1.53$) ($F(3, 246) = 3.74, p = .01$). In the following analyses, we controlled for self-reported frequency of binge drinking and weekly consumption.

**Experimental Conditions**

First, we tested the effect of music condition on alcohol consumed (in grams), controlling for sex, age, frequency of binge drinking (self-reports), and weekly alcohol consumption (self-reports). It appeared that participants who were exposed to classical music during the break consumed more alcohol than in the other conditions (see Table 1; $F(3, 246) = 8.62, p < .001$). Scheffe post hoc tests revealed that participants in the classical music condition differed from those in the hard rock and rap conditions, and marginally significant ($p = .07$) from the pop music condition.

We also tested whether music genre played affected what kind of beverages participants consumed. Results showed differences in beer consumption ($F(3, 246) = 11.22, p < .001$), wine consumption ($F(3, 246) = 4.52, p = .004$), and mixed drinks consumption ($F(3, 246) = 7.10, p < .001$) between music conditions (Table 2). Scheffe post hoc tests indicated that participants who were exposed to pop music ($p < .001$) and participants who were exposed to classical music ($p < .001$) drank more beer than those exposed to hard rock. Participants in the classical music conditions drank significantly more wine compared with those in the pop music ($p = .015$) and hard rock ($p = .032$) conditions. More mixed drinks were consumed by participants exposed to rock music compared with those exposed to pop music ($p < .001$) and classical music ($p < .001$).

Second, we tested interaction effects of sex, age, and self-reported drinking with music condition, and three-way interactions between sex (age), self-reported drinking, and music condition. No interaction effects were found. Interested readers can obtain the tables with results of the interaction tests from the first author.

**Music Preference and Susceptibility for Exposure to Particular Music Style**

We tested whether alcohol use in the bar lab was affected by the fit between music played in the break and participant’s own music preference. Multiple regression analyses were conducted with age, sex, weekly drinking, and binge drinking as confounders in the first step, music preference and music condition as independent variables in the second step, and the interaction between music preference and music condition in the third step of the analysis. Four separate analyses were conducted for preference for pop, classical music, rap, and hard rock. We found no interaction effects, indicating that the effects of music condition did not depend on participant’s own preference for a specific music style.\(^1\)

Furthermore, by means of regression analyses with interaction terms, we tested whether the effects of music condition differed for those participants for whom music played an important part in their life and for those for whom it did not. We did not find significant differences in the impact of music played during the break on alcohol consumption between participants for whom music played an important part in their life and for whom it did not. These additional analyses demonstrate the robustness of the findings of music played during the break on actual consumption in the bar lab.

**DISCUSSION**

The aim of the present study was to test the effect of exposure to specific music genres on alcohol consumption. We

\(^1\)We examined to what extent self-reported alcohol consumption (reported drinking levels per hour) was related to observed drinking levels for the four conditions. It appeared that lowest correlations were found for participants in the classical music condition.
employed an observational experimental design studying young people’s drinking behavior in a naturalistic setting. It was assumed that listening to hard rock and rap music would result in higher drinking levels than listening to pop and classical music. Unexpectedly, we found that young people who were exposed to classical music for a period of 50 minutes in the bar lab drank much more than those who were exposed to the other music genres. These effects were quite robust. Not only did we not find age and sex differences, but our findings were also not affected by individual music preferences and the importance individuals placed on music in their lives.

What led listening to classical music to enhanced levels of alcohol use? We have a few explanations. Our sample consisted of young people, students, for whom classical music is not a genre with which they are quite familiar. Generally, they preferred pop music and, to a lesser extent, rap and hard rock. Perhaps people pay more attention to new, unknown stimuli. Unfortunately, we did not question people about whether they listen or hear music in a range of specific contexts such as home, school, church, films, TV, stores, etc. Of course, it is quite peculiar to have to listen to classical music when being in a bar. People have all kinds of scenarios associated with specific contexts; and for most, bars and pubs are linked to drinking, having fun, dancing, talking, courtship behaviors, and particular music styles. Perhaps the unforeseen confrontation with classical music leads to an explicit mind setting and changes in mood that resulted in drinking patterns that deviate from what normally is performed by people. Listening to classical music may, for instance, lead to feelings of boredom or frustration, and subsequently to enhanced levels of alcohol use. This idea of altered mind setting is highlighted by the fact that the association between what people normally drink (self-reported weekly alcohol consumption) and consumption in the bar lab was lowest for those who were exposed to classical music. Therefore, people might deviate more from what their habitual drinking is in a bar when they are exposed to atypical music for that context. Future research should reveal whether this proposition is correct.

In line with North, Hargreaves, and McKendrick (1999), we assumed that listening to classical music would result in higher consumption of wine as compared with other beverages. Although we indeed found highest levels of wine consumption in groups that listened to classical music, this condition also revealed higher consumption levels of beer. As additional analyses documented that groups are relatively homogenous in their preferences for specific beverages—some groups are dominated by members who drink beer, mix drinks, or wine—it might be possible that for some groups, indeed the exposure to classical music led to a preference for wine. Although we had sufficient statistical power to detect significant differences between the experimental conditions, the substantial similarities in alcohol use between members of peer groups (see also Bot et al., 2005; Fisher & Bauman, 1988; Urberg, Değirmencioğlu, & Pilgrim, 1997) make it difficult to find robust differences in beverage preferences between conditions. It might be interesting to replicate our findings in a design in which we let persons in the bar lab to conduct two tasks with a break in-between together with a confederate (see Quigley & Collins, 1999), in order to test whether not only people’s own drinking but also potential imitation processes are affected by music. For example, it is possible that in that context, people most strongly imitate wine drinking of a confederate when classical music is played and not one of the other music genres. Then there is a kind of naturalistic fit between what other people drink and the music played. In other words, in cocktail bars, other music will be played than in, e.g., Irish pubs or dance clubs, and also predominantly other types of drinks are consumed in the various settings (see the work of North et al., 2004). If people go to a setting in which the music does not fit their expectations for that setting, this might affect their alcohol intake. The advantage of an approach with a confederate is that (strong) group effects in drinking are expelled, although, of course, the disadvantage is the relative lack of generalizability to ordinary social drinking situations.

Our findings do not coincide with those from cross-sectional and longitudinal survey research. If other studies would replicate our findings, this would demonstrate that the links between particular “negative” music styles, such as hard rock and rap, and substance use (e.g., Forsyth et al., 1997; Robinson et al., 2005) are not caused by simply listening to these music genres, but that other mechanisms play a role. The explicit lyrics of rap and hard rock music, or the fact that some people associate these music genres with prodrinking norms, apparently did not affect them to drink more. Forsyth et al. (1997) argued that it is likely that adolescent substance users identify themselves with a certain music style rather than that listening to particular music encourages substance use. The conclusion that rock and rap music do not lead young adults to drink the most, in combination with the fact that we also did not find this for those participants whose own music preferences (hard rock, rap) matched the genre played in the bar lab, discards the claim that these music styles are strongly affecting alcohol consumption.

STUDY’S LIMITATIONS

The present study has several limitations, which should be taken into account. First, although the big advantage of an experimental design is obviously about the causal inferences that can be made, we do not know anything about the long-term effect of exposure to specific music genres. With experimental studies, it is pivotal to replicate them, in order to make substantive claims about potential causal effects and theoretical models. Second, although observational experimental research has many advantages, it is still difficult to achieve a realistic, naturalistic setting. Normally, more people are present in a pub,
people can move in and out of that context, and there is of course more fluctuation in time spent in a pub, which likely influence the extent to which drinking is affected by the music played. Further, when being in a social drinking setting, people are affected by others, as we have shown in other studies as well (Bot et al., 2005). This means that besides the impact of music, peer influence processes might also account for variations in individual drinking. Further studies are needed with, e.g., dyads and larger samples per condition in order to control for potential peer influence effects. In addition, the timing of measurement of individual music preferences was not optimal. It is possible that music preference was affected by the music participants were exposed to in the break. For that reason, music preference is preferably measured before exposing participants to music. We decided not to do that as it would probably put too much attention on the goals of the study. Perhaps future studies should assess music preference a few weeks before participants enter the experiment. Hence, to test whether it is really the content of the lyrics of music genres that directly affects young people’s substance use patterns, experimental studies should focus upon testing differential effects of songs with and without explicit references to deviancy and alcohol use and misuse. We did not match the songs in this study on the prevalence of alcohol references in the lyrics. To control for potential confounding effects of familiarity with and popularity of artists, one has to expose participants to songs from the same artists with and without references to alcohol. Furthermore, participants were informed in advance that they would be in a bar lab, in which they would be able to consume alcoholic and nonalcoholic drinks. We do not think this knowledge affects the study’s findings, as we randomized participants in groups to the condition just before entering the lab. Finally, we used a selective and relatively small student sample, and future studies are warranted including more comprehensive samples covering wider age ranges and including various social economic groups, before firm conclusions can be drawn.

To what music genres people expose themselves when going out in real life is a selection process based on availability, accessibility, opportunities and variation of public drinking places, the type of friends people hang out with, their lifestyle, and also the type of music played. In other words, we are able to draw conclusions about the short-term, immediate effects of exposure to specific music genres. However, in real life, youth select settings partly based on their lifestyle and music preferences and expose themselves for more extended periods of time to specific music genres. It is impossible in this type of experimental research to examine the impact of long-term exposure to specific music genres on young people’s maladjustment and substance use.

FUTURE NEEDED RESEARCH

Future research should investigate possible causes as well as the necessary conditions for the relation between class-ical music and alcohol consumption to operate or not to operate. The role of emotions induced by classical music could be of particular importance in this way, investigating whether and which induced emotions play a role. Various kinds of settings in which music is played should be investigated in order to find possible differences between settings. These could be due to the level of active listening to music. For instance, a disco setting with ear-splitting music could be compared with a lounge setting that is more peaceful and less noisy. In this matter, the volume of music probably plays a role too (Bach & Schaefer, 1979). Further, if our findings are caused by the fact that classical music is atypical and therefore unexpected in a bar setting, it is interesting to verify whether the fit between setting and music affects how much people are drinking. To give an example, DJ Tiesto (i.e., dance) in an Irish pub might have the same effect on the fast majority of youngsters as John Denver (country) in a fancy disco, or indeed Chopin (classical music) in a bar

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

THE AUTHORS

Rutger C. M. E. Engels, Ph.D., is Professor of Developmental Psychopathology at the Behavioural Science Institute, Radboud University Nijmegen, the Netherlands. His research focuses on the interplay between individual characteristics (e.g., personality, outcome expectancies, genes), environmental cues, and actual social interactions on the initiation, maintenance, and determination of addictive behaviors, such as smoking, alcohol use, overeating, and drug use.

Evelien A. P. Poelen, Ph.D., is post-doc in Developmental Psychopathology at the Behavioural Science Institute, Radboud University Nijmegen, the Netherlands. Her research concentrates on gene–environment interactions and adolescent alcohol use, and impact of alcohol and smoking portrayals in movies on adolescent substance use.
Dynamics of music and alcohol use in youth culture: Subcultural and peer influences

Tom Ter Bogt, Ph.D., is Professor of Popular Music and Youth Culture at Utrecht University. He obtained his PhD with a thesis on the Protestant work ethic in the Netherlands. He is author of two books on youth and youth culture, and has written a series of television documentaries on youth culture and pop music in the Netherlands. His scientific publications address pop music, youth culture, substance use, and adolescent problem behavior.

REFERENCES


Tom Ter Bogt


