

Urban Traffic Safety While Listening to Music – Views of Listeners and Non-Listeners

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ABSTRACT

The health and safety of the population is an important topic which requires adapting measures to the development of new technologies and their use. One aim of this doctoral research was to investigate mobile music listening in relation to health and safety. Using interviews and shadowing, the opinions and behaviours of mobile-music listeners have been studied, while a second study asked non-users of portable listening devices about their views. Results show that mobile music listeners are aware of the negative effect music listening over headphones in public could have on them, namely the danger of missing signals from their environment. All interviewees have strategies to deal with this issue in different ways. Non-listeners are conscious of risks, too, since one of their main concerns is the inability of listeners to notice auditory stimuli and react appropriately and quickly in traffic.

I. INTRODUCTION

Most people choose to listen to music using portable listening devices (Krause & North, 2014), which is not very surprising, considering how many people can be seen in the streets wearing headphones. However, opinions differ on whether this behaviour is safe for the user and the surrounding people.

Ever since the dawn of the Walkman in 1979, there have been worries about the detrimental effects it could have on the listener and others, especially regarding sociability (e.g., Bull, 2000; Flynn, 2014; Prior, 2013). With the spread of a growing variety of portable listening devices, those worries are increasingly expanding to include the safety of listening to music over headphones in urban traffic (Neider et al., 2010; Lichenstein et al., 2012). While it is not an offence in some countries to use portable listening devices while cycling as long as the listener is not "deemed not to have proper control of their vehicle or to be driving without reasonable consideration for others" (PNLD, n.d.), other countries have forbidden cyclists to listen to music over headphones (Bergal, 2015). The state of Utah went a step further and is fining pedestrians \$50 for "distracted walking" near the railways (Henderson, 2014). This includes talking and texting on the phone as well as listening to music over headphones (Davidson, 2012).

A study carried out in the Netherlands (Goldenbeld et al., 2012) discovered that the proclivity to listen to music while cycling reduces with age, starting at 76% for teenagers and decreasing to 14% for over 50-year-olds. When taking into consideration how often the different age groups had bicycle crashes, analysis showed that using portable electronic devices (phones and music listening devices) increased the risk of having an accident by 1,6 to 1,8 for teenagers and

young adults, which is very low compared to the risk that texting harbours for car drivers (ca. 23, 24% increased risk of being involved in an accident) (Olson et al., 2009).

While it is more obvious why cyclists who listen to mobile music might be risking more accidents (they have a higher travel speed, and more and closer interactions with vehicles on the road than pedestrians), studies concerning distracted behaviour of pedestrians who listen to music over headphones come to a variety of conclusions. Neider et al. (2010), Nasar et al. (2008) and Walker et al. (2012) agree that music listening devices are prone to be less dangerous in traffic than using a mobile phone. In different experimental and observational conditions, they each come to the separate conclusion that listening to music is as unsafe as not using a device at all, or even increases cautionary behaviour (see Walker et al., 2012). Therefore, they suggest treating mobile listening devices differently than mobile phones when thinking of strategies to increase pedestrian safety.

As opposed to this, Lichenstein et al. (2012) analysed media reports of accidents in relation to the use of headphones (although a causal relationship could not be proven with this method) in a retrospective study. They found that 70% of these accidents were fatal, and that most victims involved were under 30 years old (67%). Their conclusion is that headphone use can be potentially dangerous in traffic, especially when auditory cues are necessary to stay safe. The danger, the researchers say, is the "environmental isolation" and "inattentive blindness" (ibid., p. 290), i.e. the inability to perceive auditory stimuli, and distraction.

In their study of street-crossing behaviour in a virtual environment, Schwebel et al. (2012) came to a similar conclusion. When comparing music listening, texting, and talking on a phone in a condition where pedestrians had to cross a virtual street, listening to music turned out to be the most dangerous, even more dangerous than texting. Participants talking on the phone had the least accidents in this experiment. Schwebel et al. also explain this through the necessity of auditory cues to stay safe in certain situations.

While an increasing amount of studies show the dangers involved with mobile music listening in public, the application of this information and the everyday behaviour of mobile music listeners has not been considered in most of these quantitative studies. There are many anecdotes in newspapers and online forums about the behaviour of mobile music listeners in traffic (over 11m results in a Google search), but most of them are just that – anecdotes. Hardly any of them have any scientific foundation and are based on own experiences and speculation. To change this and gain more insight into the views of different parties involved, i.e. listeners and non-listeners, preliminary research was carried

out as part of more extensive studies about mobile music listening. The aim was to discover how much the music listeners are aware of potential danger in traffic, and what their strategies are to circumvent harm. To understand if and how these strategies are perceived by passers-by, non-listeners were asked about their opinions, too.

II. METHODS

Two separate studies were carried out in the context of this doctoral research. In the first study, eleven mobile music listeners (4 female, 7 male, aged 20-42, of 9 different nationalities) were recruited through word of mouth, advertisement at the author's workplace outside of university, and snowballing. The second study was advertised on university and church noticeboards, Facebook, the author's workplace and word of mouth. Eleven non-users of mobile listening devices responded (10 female, 1 male, aged 28-76, of 4 different nationalities).

The first study consisted of three separate stages. At the beginning, an interview was carried out with the listeners to get to know them and their music listening behaviours. After completing a short demographic questionnaire, questions regarding their musical preferences, the use of their portable listening devices (e.g., how is it organised, when and why is it used) and their reactions to certain situations (e.g., traffic, social situations) were asked. Interviews lasted between 20 minutes and an hour.

Several days later the participant and the researcher met again. The aim was for the researcher to follow the participant around (i.e. shadow them) while they displayed their usual music listening behaviour in a normal, everyday environment, i.e. the streets and shops of a small city in England. The method for this was adapted from DeNora (2003), who had shadowed her participants while they went shopping. Both the researcher and the participant in her study were equipped with an audio recorder which recorded their thoughts that were spoken out loud. Since speaking out loud would disrupt the music listening experience, and focussing on the environment would take the attention from the music, this approach was modified for this study. Here, only the researcher carried an audio recorder, which was used to take down impressions of the environment and to occasionally approach the participant and ask them about the music they were listening to and the reasons for that. This way the disruptions were kept to a minimum and an as natural as possible experience was ensured. Pictures of the environment were taken to have a point of reference for the analysis.

Because interruptions were limited, another interview was carried out immediately after the shadowing to talk about the experience and about behaviour that was noticed and that needed clarification.

Interviews were also carried out with the participants of the second study. They were asked about their general music listening behaviour, the reasons why they do not use mobile listening devices, and their impressions of and experiences with people who do.

All the interviews were transcribed and coded according to Interpretative Phenomenological Analysis using NVivo. Ethical approval for these studies was obtained by the Ethics Committee of the University of Exeter. All the names mentioned here are pseudonyms.

III. RESULTS AND DISCUSSION

When talking about moving around the city wearing headphones, many of the music listening participants seemed to be aware of the fact that it could be quite dangerous to be in traffic and not be able to hear much. However, the interviewees always appeared to have an opinion or a specific strategy to deal with this. Thomas (20 years old), for example, does not rely on his hearing, but trusts a different sense altogether:

I don't hear the traffic. I look. I use my eyes rather than ears, because I think ears can mess you up a bit? You know, you can hear something that's not there, but you can't not see something that's not there. Do you know what I mean?

This behaviour agrees with the observations of Walker et al. (2012) who found that especially men tended to display a more cautionary behaviour when crossing streets while listening to music compared to no music. Whether this increases safety remains to be seen, because, as Goldenfeld et al. (2012) discovered, young cyclists in the Netherlands have the highest risk of being involved in an accident due to use of portable electronic devices, even though they reported that they pay more attention to traffic when using these devices. The researchers conclude from this, that this compensatory behaviour is not enough to increase safety.

Anne (21 years old), on the other hand, says that she is very sensitive to noise and listening to music actually helps her move through traffic. Additionally, she prefers cycling on the pavement, which makes it a bit less dangerous:

'Cause I don't like to cycle on the roads. I think, as long as I can hear the noise around me and, to be honest, I find most other noises so loud even when I have my music playing at a level that I find pleasant, I can still hear everything else.

Anne is very sensitive to stimuli from her environment, which makes it difficult for her to manage sound and the information she perceives. For this reason, she uses her portable listening device like an "audio-visual pair of sunglasses" (Bull, 2007, p. 32), which keep the incoming stimuli to a minimum and help her concentrate on what is important, therefore keeping her safer than she would be without her headphones.

An altogether different way to cycle while listening to music is chosen by Max (42 years old). He is very much aware of the danger he is facing while listening to music in traffic, but he decides to do it anyway. His reasoning for that, however, does not lie within himself, but is part of a bigger way of living, a kind of lifestyle that comes with riding his bike, the BMX. Max believes that when he uses his BMX, he is freed of certain rules and can show behaviour that would not be accepted otherwise, like cycling on the pavement. According to Max, listening to music in traffic is very dangerous, but it seems that, since he sees himself as exempt from particular rules in traffic because of his bike, he can cycle somewhere where listening to music is not as dangerous, and can therefore "afford" to listen to music over headphones while cycling.

E: Ok. And how do you work out if there's a car?

M: Em by using my gut feeling (laughs). I must admit that I might be a bit dangerous there. (Max)

Even though Max wears a helmet to increase his safety, it is understandable why non-listeners worry about the risk cyclists who listen to mobile music are facing. Steven (29 years old, non-listener) concludes, that if cyclists wear helmets to stay safe, they are compromising this gained safety if they were to listen to music, too:

I don't have a helmet, but lots of people have a helmet and they also have headphones. I'm like - come on, you're kind of losing the .. if you're wearing a helmet to be safe, then maybe the headphones aren't a good idea.

While non-listeners especially worry about cyclists who use mobile listening devices, they observe that the danger is closely connected to the volume the music is listened at:

Sometimes I wonder about safety. Like, especially when you cycle. But I guess it depends on if you're used to and if you keep the music like super loud or at a normal volume. (Agatha, 28 years old)

However, not only cycling, but walking while listening to music over headphones can be dangerous, too. Annabel (28 years old, listener) is aware that listening to music can take your attention from what is important, especially in environments where other people are present:

So sometimes I think you zone out and it's kind of sometimes it can be dangerous, because you have to make sure that when you get to roads and stuff, you're looking left and right or you bump into someone or you'd probably be less aware of your environment by having the headphones in. Most of the time.

While using portable listening device does require monitoring a screen constantly, the concern about being involved in serious accidents through inattentiveness is still very valid. Even in the short time it takes to look for a new song to listen to, an accident could happen:

If they're changing the music on their iPhone or something they're actually not aware of what they're walking into. You know, could have an accident, it's quite dangerous. (Julia, 61 years old, non-listener)

As opposed to this, an argument, that Neider et al. (2010) would subscribe to, might be that listening to music leaves you free to partake in your environment, and is therefore less dangerous than looking at the screen of a smartphone:

I think you are more distracted if you just keep looking on your mobile phone, like what people do. Because when you have the headphones you still look around, there's nothing you have to look at. (Maria, 53 years old, non-listener)

Although none of the interviewees deny the danger that is associated with mobile music listening in urban traffic, there are different strategies that help listeners navigate the streets as safely as possible even while listening to music. However, the interviewed non-listeners were barely aware of these strategies, because they were hardly ever mentioned, and the general consensus was that listening to music over

headphones in public can be unsafe, especially in regard to being able to hear signals from the environment. Comparing these two positions, it seems that more studies are necessary to verify the effectiveness of the safety measures that mobile music listeners use. A variety of questions arise from these studies, e.g., how safe are cyclists who listen to music while wearing a helmet compared to cyclists without either? Is listening to music while cycling on the pavement, albeit illegal in many countries, less dangerous than cycling on the road? How much can visual cues compensate for auditory cues from the environment when trying to stay safe? These and many other queries should be considered in future studies.

IV. CONCLUSION

In summary, this research offered an insight into the opinions and behaviours of mobile music device users and non-users. All the interviewees are conscious of risks involved with listening to music in an urban environment and especially cycling is seen as particularly dangerous. Strategies are employed to lower potential risks when cycling while listening to music, but these are scarcely noticed by non-listeners, although it is observed that there are different factors, e.g., volume of the music, that could influence how much a music listener perceives from their environment.

An approach for the future would be to ask music listeners and non-listeners alike, where their opinion on the danger of mobile music listening derived from. This could lead to an analysis of the effectiveness of media communication. Additionally, it would be interesting to include more participants across several cultures in a similar study to discover whether the present results are only the opinions and behaviours of these particular interviewees, and whether there are any correlations with different traffic situations, i.e. more or less cycling routes, urban versus rural traffic, or less regulated traffic in different countries.

What this study shows, however, is that it is not enough to investigate the danger of mobile music listening in traffic per se, but that it should be considered what the users actually do and what measures they employ to increase their safety, because there are different nuances in behaviour that make certain situations more or less dangerous. This has not been reflected in studies so far.

REFERENCES

- Bergal, J. (2015, November). *Cities and States Try to Crack Down on Distracted Bicycling*. The Pew Charitable Trusts. Retrieved 17.06.2017, from <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2015/11/17/cities-and-states-try-to-crack-down-on-distracted-bicycling>
- Bull, M. (2000). *Sounding Out the City. Personal Stereos and the Management of Everyday Life*. Oxford: Berg.
- Bull, M. (2007). *Sound moves. iPod culture and urban experience*. Routledge: London.
- Davidson, L. (2012, March). *'Distracted walking' by rails may now bring fines*. The Salt Lake Tribune. Retrieved 29.05.2017, from <http://archive.sltrib.com/story.php?ref=sltrib/politics/53811747-90/board-distracted-fines-ordinance.html.csp>
- DeNora, T. (2003). *After Adorno. Rethinking music sociology*. Cambridge: Cambridge University Press.
- Flynn, K. (2014, November). *How To Listen To Loud Music On Headphones Without Hurting Your Ears*. The Huffington Post.

- Retrieved 21.06.2016, from http://www.huffingtonpost.com/2014/11/24/loud-music-headphones_n_6174340.html
- Goldenfeld, C., Houtenbos, M., Ehlers, E., and Waard, D. de (2012). The use and risk of portable electronic devices while cycling among different age groups, *Journal of Safety Research*, 43 (1), 1–8.
- Henderson, T. (2014, December). *Too Many Pedestrians Injured by Looking at Their Phones*. *Governing*. Retrieved 29.05.2017, from <http://www.governing.com/topics/transportation-infrastructure/too-many-pedestrians-injured-by-looking-at-their-phones.html>
- Krause, A. E., and North, A. C. (2014). Music listening in everyday life: Devices, selection methods, and digital technology, *Psychology of Music*, 44 (1), 129-147.
- Lichenstein, R., Smith, D. C., Ambrose, J. L., and Moody, L. A. (2012). Headphone use and pedestrian injury and death in the United States: 2004–2011, *Injury Prevention*, (18), 287–290.
- Nasar, J., Hecht, P., and Wener, R. (2008). Mobile telephones, distracted attention, and pedestrian safety, *Accident Analysis & Prevention*, 40 (1), 69–75.
- Neider, M. B., McCarley, J. S., Crowell, J. A., Kaczmarek, H., and Kramer, A. F. (2010). Pedestrians, vehicles, and cell phones, *Accident Analysis & Prevention*, 42 (2), 589–594.
- Olson, R. L., Hanowski, R. J., Hickman, J. S., & Bocanegra, J. (2009). *Driver distraction in commercial vehicle operations* (No. FMCSA-RRR-09-042). Washington, DC: U.S. Department of Transportation DOT, Federal Motor Carrier Safety Administration
- PNLD (n.d.). *Q724: Can I listen to my MP3 or iPod player whilst driving a car or riding a bicycle?* Retrieved 18.02.2017, from <https://www.askthe.police.uk/Content/Q724.htm>
- Prior, N. (2013, December). *The iPod zombies are more switched on than you think*. *The Conversation*. Retrieved 11.10.2016, from <http://theconversation.com/the-ipod-zombies-are-more-switched-on-than-you-think-21262>
- Schwebel, D. C., Stavrinos, D., Byington, K. W., Davis, T., O'Neal, E. E., and de Jong, D. (2012). Distraction and pedestrian safety. How talking on the phone, texting, and listening to music impact crossing the street, *Accident Analysis & Prevention*, 45, 266–271.
- Walker, E. J., Lanthier, S. N., Risko, E. F., and Kingstone, A. (2012). The effects of personal music devices on pedestrian behaviour, *Safety Science*, 50, (1), 123–128.