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# **Proceedings Paper:**

Barnard, Y. orcid.org/0000-0002-0810-0992 and Timms, P. (2023) Artful journeys: improving the traveller's experience. In: Proceedings of the Human Factors and Ergonomics Society Europe Chapter Annual Meeting in Liverpool, UK, 2023. the Human Factors and Ergonomics Society Europe Chapter Annual Meeting in Liverpool, UK, 2023, 26-28 Apr 2023, Liverpool, UK. HFES, pp. 107-119.

This is a conference paper originally presented at the Human Factors and Ergonomics Society Europe Chapter Annual Meeting in Liverpool, UK, 2023. Published online at https://www.hfes-europe.org/proceedingsliverpool2023/

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eprints@whiterose.ac.uk https://eprints.whiterose.ac.uk/ Yvonne Barnard & Paul Timms Institute for Transport Studies, University of Leeds UK

## Abstract

Transport planners usually focus on getting travellers from A to B efficiently and safely. However, travellers are not parcels: they have emotions that influence their experience. Art can enhance their experience of travelling. Making journeys by public transport or by walking more enjoyable is also stimulating sustainable travel. Over seven years we supervised 11 international students doing their dissertation on Art and Transport. They investigated different art forms and different transport modes in different countries: visual arts, design, and music, in metro and rail stations, busses, airports, and on streets. User surveys, brainstorm sessions, interviews, and gathering images on social media were methods used. Several students made their own designs, projected on pedestrian routes. A wide range of ways to improve travel experience emerged. Based on these dissertations the paper discusses how art can contribute to the travel experience, the many forms art in transport can take, and research methods to explore this topic.

## Introduction

Transport planners usually focus on getting travellers from A to B efficiently and safely. However, travellers are not parcels; during their journey they have experiences and emotions. In this paper we look at how art can be used to enhance the travel experience. This is important not just for the pleasure of travellers, but also for sustainability reasons. With improved travel experience people may be more tempted to use more sustainable forms of transport instead of using their private cars. In the first place this would be public transport. But also walking can be stimulated by providing a more pleasant and interesting walking experience.

Art can enhance the travel experience, and art can evoke different emotions and feelings. Art can be soothing, taking away travel stress, be thought provoking, stimulating the traveller to think differently and be inspired. Art can "transport" the traveller to another place in their mind, such as evoking memories of other places and events. It does not need to be dramatic, art may just bring a smile, or a short disruption from boredom. Art does not even have to please everyone, it may be a point of discussion with fellow travellers or others, live or on social media.

There is another reason to study art in transport. Art is related to creativity, and by stimulating thought about the role of art, transport professionals may be stimulated to be more creative, thinking about doing things differently, whether it is in transport engineering, planning or operations.

In D. de Waard, V. Hagemann, L. Onnasch, A. Toffetti, D. Coelho, A. Botzer, M. de Angelis, K. Brookhuis, and S. Fairclough (2023). Proceedings of the Human Factors and Ergonomics Society Europe Chapter 2023 Annual Conference. ISSN 2333-4959 (online). Available from http://hfes-europe.org

This paper is about art; however, we do not take the perspective of art experts, art historians or artists: our perspective is that of transport experts. This means that when we talk about "art" we do not use a strict definition or an aesthetic judgement. We use the term loosely, and may also include art forms that are closer to design and decoration. However, we do not address architecture. Our aim is to look at art that can be added to existing transport vehicles like busses and trains, to buildings such as train stations and bus shelters and to the existing infrastructure such as walkways.

#### Master dissertations on art in transport

Intrigued by what art could mean for transport professionals, we started in 2016 with offering "artful journeys" as a topic for Master dissertations in transport planning, sustainability in transport, and transport engineering at the Institute for Transport Studies (ITS) of the University of Leeds. The students come from all over the world, some of them already working in the transport industry.

Table 1. Master students' dissertations

Year	Title	Author	Themes
2016	My beautiful busses: the role of art in public transport	Chuqiao Han	Bus and bus shelters, metro, different art forms
2017	Artful journeys: enhancing travellers experience with the high aesthetic	Kristina Shanidze	Metro stations, visual arts
2018	quality environment Artful journeys: enhancing the travel experience in the airport	Ziwei Li	Airports, visual arts
2019	Art and transport: public transit seat aesthetic design and its impacts on travel experience	Minghao Huang	Bus and metro seats, design
2019	Art and transport: Could urban bus shelter aesthetics enhance travellers' experience?	Shiyi Chen	Bus shelters, visual arts
2020	Art and transport: enhance walking experience with visual public art	Zeyu Yang	Walking, footways, visual arts
2021	Art and transport: Do people like live music in public transport?	Nachuan Wang	Train stations, music
2022	Art and transport: Metro background music enhance passenger travel experience	Xuan Fan	Metro, music
2022	Artistic travel: whether the art MTR stations fill people's cultural demand	Ziyu Long	Metro, visual arts
2022	Artful journeys: enhancing urban rail transit experience with public art that represents local culture	Dingye Han	Rail, visual arts
2022	Artful journeys: enhancing the walking experience on pedestrian crossings	Zihua Zhao	Walking, pedestrian crossings, visual arts

At first there was some scepticism amongst our colleagues. However, every year there were students who were interested in the topic, and one of them, Kristina Shanidze,

108

even won the Frank Lai Award from the Institute in 2017, for the dissertation which is deemed to be the most innovative or to have the most impact. In Taable 1 Master dissertation students at ITS are listed with the topics they investigated.

Students come from different cultural backgrounds and nationalities, with Chinese students showing particular interest in the topic. Students decided their own focus within this general topic, and as is clear from Table 1 there are many different choices: art in waiting areas, in vehicles and in the walking environment. Different art forms were studied: visual art (paintings, photos, statues, decorations) and music (background music, public pianos). These choices were not imposed, but came from the personal interests of the students themselves, and they formulated their own research questions. A few examples are:

- What kind of artistic forms of public arts in urban rail transit does the public prefer and expect?
- What is the role of two-dimensional public art in enhancing walking experience?
- What are both bus users and non-bus users' attitudes towards aesthetic designs of bus shelters?

In this paper we will not describe all these dissertations, but aim to provide a picture of how the topic of art in transport was explored and studied.

#### Methods and findings

Although the methods used were different, there are commonalities. In the next sections we aim to give an impression of how the studies were conducted and examples of results will be given. The following methods were used:

- Literature search on user experience, travel mode and art forms
- Categorizing attributes of art and travel mode
- Collecting a wide range of examples
- Observing and analysing the target domain
- Brainstorming
- Asking the public, surveys, analysing social media comments and pictures
- Asking experts, in transport research, operations, and art
- Making one's own design (sometimes) and asking for opinions in surveys
- Recommendations for practitioners and research

#### Literature research

Research, of course, starts with investigating what is already known about a topic. The literature reviewed came from different perspectives. There is literature on art in transport, but not much. For example: Amundsen (1995); Cascetta and Carteni (2014); Enright (2023); Isaacs (2000); Johansson (2016); Kido (2005); Li and Zhang (2017); Liu et al. (2019); Yang et al. (2019). Literature research focussed on several aspects such as attributes of art in transport, the role art can play in transport, impact of art on human behaviour, the role of art in promoting and expressing local culture and identity, and art as a means to provide information, orientation and navigation.

Some of the findings of the impact on human behaviour are related to well-being and stress reduction. Art can also play a role in helping travellers to navigate in complex environments such as underground stations. There are also claims that in public environments art can help to reduce vandalism and anti-social behaviour. Attractiveness of a place is very context sensitive, and from a transport point of view, aesthetics can be addressed not as an attribute of a transport environment, but as a user experience of dealing with this environment (Timms & Tight, 2010).

#### Categorizing art forms

In order to be able to study the research questions it is necessary to categorise the different art forms. This is important for collecting examples, and for designing questionnaires to explore the public's opinions. Some categorisation was based on literature study; for example Van Leeuwen (2012) uses the category dimension of realistic versus abstract, separated versus integrated, and small or localised versus large. Categories were also formed based on interviews with art experts. For example, categories identified were relation to local culture, and stimulating versus soothing (especially types of music). A categorisation of art in pedestrian spaces, formulated by Yang (2020) and accompanied by some of his own designs, is shown in Table 2.

#### Collecting a wide range of examples

When transport mode or environment and art categories were defined, examples of art in transport were collected, mostly using internet sources, but also own photos. Examples of metro stations collected from the internet by Long (2022) are shown in Figure 1, whilst an example of public piano playing in London, downloaded from YouTube, is shown in Figure 2.

Table 2. Categorisation of types of art in public space (Yang, 2020)

Type of art	Examples
Type A: Spliced Fragment	
Type B: Figure/Object Portrait	
Type C: Scenery	
Type D: Pattern/Stamp (including letter)	
Type E: Abstract Shapes	
Type F: Functional	



*Figure 1. Examples of art in metro stations (Long, 2022)* 



*Figure 2. Example of public piano playing in London from YouTube: www.youtube.com/watch?v=ez1iu-zx7eE. (Wang, 2021)* 

## Observing and analysing the target domain

When studying a specific place, students used their own observations, by visiting the place or because they were acquainted with them: for example, a station in a hometown in China. When visiting a place, students looked at both the art and the behaviour and reaction of people. Also internet sources such as YouTube were used: for example, videos on the way people interact with piano players in railway stations. The categories identified were also used to rate examples: for example, metro stations. Figure 3 shows the public piano at Ningbo Railway Station, China, which was a case study site chosen by Wang (2021) in his investigation into music in railway stations.



Figure 3. Public piano playing in Ningbo Railway Staion, China (Wang, 2021)

#### **Brainstorming**

Brainstorming usually played an important role in the exploration of the topic. Brainstorming could take place at the beginning of the study, with friends, students, or staff from the Institute interested in the topic. Brainstorming often took the form of a group of 4-8 people sitting around a table in an informal setting, using (lots of) pictures of art in transport, and discussing, sorting, commenting etc. Also on-line brainstorms took place, partially due to the Covid period, but also with people in the respective home countries. Results were written out, analysed, mindmaps constructed, and fed back into the categorisation, and were used for survey construction. Brainstorming was usually a very pleasant experience for all participants, and people were sometimes surprised by their own strong feelings about art, and by how many creative ideas resulted from these sessions. A picture of a brainstorming session conducted by Chen (2019) is shown in Figure 4.

## Asking the public: overview

For finding out what the opinions are of travellers about the role of art two main methods were used: asking directly by interviews and questionnaire surveys, and analysing social media comments and pictures.

#### Interviews

Interviews were conducted, mostly on-line. Not many interviews took place directly near the art works themselves, although this is a good method for collecting more indepth information; for practical reasons this was usually not possible. An example of an interview with a rail passenger is shown in Table 3.



Figure 4. Brainstorming session conducted by Shiyi Chen (Chen, 2019)

Table 3. Example of an interview

	Interview quote
Rail passenger	"He was curious and stopped for about ten minutes to watch he doesn't know much about pianos and rarely listens to piano music. He had passed by Ningbo Station many times on the train and this is the first time that he comes across a public piano improvisation. When asked if he would come to the station earlier next time to watch others play, he said yes, and that compared with his previous trips, this time with a public piano and the playing of others passengers did enhance the experience to a great extent" (Wang, 2021).

#### Questionnaire surveys

Students designed on-line questionnaires to ask people about their experiences, ideas and preferences. Questionnaires usually contained pictures that people could rate, and a dissertation on music had a questionnaire containing audio files. The respondent size was usually around 100-150. As on-line questionnaires were mostly distributed via snowballing, starting with students' own social networks, the respondents were largely of a younger age group. This is not necessarily a bad thing, as the aim was not to have a representative population but an exploration into travellers' experiences, and young people are an interesting target group for transport. When there was a focus on a specific place, questionnaires were distributed to people living near that place. Some examples of findings from these questionnaire surveys are shown in Table 4.

Table 4. Examples of findings from questionnaires

	Questionnaire findings
Bus users	"Generally, in both UK and China, most people care for travel experience, and quite a few are willing to pay more for a better-experience journey. Bus users fairly feel satisfied with current bus travel, but riders in UK perceive experience waiting at bus stop relatively stressful during a whole bus journey whilst their counterparts in China feel in bus journey the most uncomfortable" (Chen, 2019).
Metro users	"With regard to the subjective assessment performed we may state that in average metro users' sample is satisfied with the delivered aesthetic quality of the stations (4.69 Likert-Type score). The participants assigned the highest scores to the stations with the richest meaning, highest salience and lowest modality. The lowest appreciation was noted in cases of the non-decorated stations" (Shanidze, 2017).
Rail users	"Most participants believe that public art with local culture influence can enhance their sense of belonging and cultural pride and help them to increase their knowledge of history and culture" (Han, 2022).

#### Analysing social media comments and pictures

A very interesting way of finding out what people think about art in transport is to look at social media. For example, there is a Facebook group dedicated to bus seats. On Instagram there are many pictures of art in transport environments with lots of comments. By doing content analysis, both on the pictures and on the comments, one can gain insight into opinions and ideas. Several students explored this option; a more systematic search and analysis could be a good way to conduct research in the future. An example of the results of analysing social media for metro users is shown in Table 5.

Table 5. Example of results from analysis of social media for metro users

	Conclusion
Social media metro users	"Finally, the visual environment should not be homogeneous. We have an evidence of art objects of different scale being appreciated. Little pieces well integrated into the high salience environment are more likely to be noticed. They catch the attention of one's eye, allowing a sight to stop wondering and rest for a moment" (Shanidze, 2017).

## Consulting experts

Experts in transport research, operations, and art were consulted, sometimes in the beginning of the projects, sometimes towards the end to discuss findings.

## Making one's own design

Surprisingly for us some students came to ask whether they could make their own designs. Designs were made for a street as part of the walking environment and for pedestrian crossings. The designs were photoshopped into pictures of the real

environment. Some of the designs for public space by Zeyu Yang were shown above in Table 2, whilst designs for pedestrian crossings by Zihua Zhao (Zhao, 2022) are shown in Figure 5. In the questionnaires conducted by these two students the designs were presented to the public, asking for opinions.





Figure 5. Designs for pedestrian crossings by Zihua Zhao (Zhao, 2022)

 Table 6. Examples of recommendations

Art form	Recommendation example
Bus seat	"Seat aesthetic design could create an interaction between operator,
design	designers and users. Special design in seat could inform users about service information, and it could be a tool for art expression" (Huang, 2019).
Airport waiting areas	"Even though people prefer pure art without business advertisements, planners and business stores could use pure art design to attract more people to utilize their waiting time" (Li, 2018).
Public space used by pedestrians	"A high level of aesthetic attribute of walking path can greatly stimulate the walking potential among urban residents" (Yang, 2020).
Pedestrian crossings	"Current reported safety issues with artistic pedestrian crossings: Negative effects: 1. It may have an unfair impact on disabled users. 2. It may distract pedestrians and motorists. 3. The excessive aesthetic appearance may attract too many visitors and disturb traffic. Positive effects: There are reports and ample evidences that artistic pedestrian crossings can be effective in reducing the number of traffic accidents" (Zhao, 2022).
Background music in metro stations	"Most passengers like to have music playing in the background in metro stations. At peak times, when passengers are at rest - on platforms and in carriages - Slow-Paced music is more appropriate. At peak times, when passengers are in motion - in the interchange area and at entry/exit points - Fast-Paced music is more appropriate" (Fan, 2022).
Public pianos in metro stations	"Public transport has been frequently used by an increasing number of people, which shows the potential as well as the responsibility of policymakers to enrich their trips. Various forms of interactions such as public pianos, are recommended to be built at transport stations. It could benefit passengers on trips and the stations in both reputation and revenue if being well operated" (Wang, 2021).

## Recommendations for practitioners and research

Finally, on the basis of the findings, students came up with recommendations for both transport practitioners and for further research. Some examples of these recommendations are shown in Table 6.

#### Conclusions

We consider aesthetics as an aspect of human factors. The Human Factors and Ergonomics Society (<u>https://www.hfes.org/About-HFES/What-is-Human-Factors-and-Ergonomics</u>) uses the following definition:

"Human Factors is concerned with the application of what we know about people, their abilities, characteristics, and limitations to the design of equipment they use, environments in which they function, and jobs they perform."

"The goal of human factors is to reduce human error, increase productivity, and enhance safety and comfort with a specific focus on the interaction between a human and the thing of interest".

Art may not be a traditional topic in human factors research, but as the focus in human factors is on the interaction between humans and their environment and equipment, we think that enhancing the subjective experience of travellers in interaction with public transport and the walking environment is of interest. Aiming to make travel more pleasant, interesting, exciting, and going beyond efficiency and comfort could be an interesting part of human factors research.

Art can contribute to a positive travel experience, but other things need to be taken care of too, such as cleanliness, comfort, efficiency, safety and security. As Han (2016) concludes: "Art is really important to improve people's journey experience from different aspects: inspiring, educational, relaxing, etc. But the practical functions of the public transport is more important than art".

It is not only about the individual experience; art can have a strong social and cultural aspect. According to Long (2022): "Artistic metro stations can indeed generate cultural demand, and different metro stations generate different cultural demands, some obvious and some subtle. This is due to the way artists and designers combine metro stations with different cultures, and the expressive effect of the finished piece". There are many initiatives for art in transport, but there are still far more opportunities to enrich the journey experience. All our students found a large appreciation from travellers for art; art was widely recognized to be beneficial in improving their experience.

When transport students start exploring art they encounter a variety of methods, art forms and user experiences, but there is a lot still to be discovered, and new methods to be developed. We will continue with dissertations, extending to a PhD study, and integrating the topic in the curriculum. A Brazilian university (Federal Centre for Technological Education of Minas Gerais – CEFET-MG) started an art and transport project inspired by this work.

Creativity, emotion, and cultural awareness are not only of interest to travellers, but are also tools for professionals working to enhance the travel experience, because in transport it is not only about efficiency, sustainability, comfort, but also about enjoyment.

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