



# Aesthetic appreciation of Personal Rapid Transit: A new viewpoint

Stefania Staniscia

School of Design and Community Development, Davis College of Agriculture, Natural Resources and Design, West Virginia University, 333 Evansdale Drive, Morgantown, WV 26506-6108, USA

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## ABSTRACT

The purpose of this study was to open a new perspective on the aesthetics of elevated urban transit infrastructure with the goal of influencing public preferences and acceptance of this type of infrastructure. It aimed to suggest major implications for city planners and policymakers involved in elevated infrastructure development. A sample of 36 amateur videos was retrieved from YouTube using the Video List tool through the key phrase “Personal Rapid Transit Morgantown WV.” Qualitative methods were used to analyze the video content. The results found that the riders enjoyed the ride and its dynamic and visual experiences, suggesting that riders’ levels of appreciation of the elevated transit infrastructure are higher than those of viewers outside the infrastructure. If aesthetics influence general social acceptability of elevated transit infrastructure, studies on the visual assessments that combine the views of the infrastructure with the views from the infrastructure might lead to a new appreciation of the infrastructure and, consequently, to the smoothness of the planning process.

## 1. Introduction

UN-DESA (2014, p. 1) reported that “population growth and urbanization are projected to add 2.5 billion people to the world’s urban population by 2050.” The United Nations’ policy regarding urbanization advocates a sustainable urbanization that influences “transport, water quality and recharge rates, habitat, equity concerns and pollution” (Larco, 2016, p. 1). Comparing the 10 most relevant books on sustainable urbanism, Larco compiled a list of “concepts/issues/elements” (Larco, 2016, p. 5) stated by the books’ authors as needing to be addressed to achieve urban sustainability (Larco, 2016). It is clear from my comparison of these books’ contents that transportation is a common concern. Urban mobility is one of the most compelling issues related to urban sustainability because of its significant amount of energy consumed and greenhouse gases produced. Dispersed and efficient public transit is a highly desirable feature for cities aiming for sustainability.

Automated Transit Networks (ATNs) are public transit options in urban areas. ATN, also known as Personal Rapid Transit (PRT) or Podcars, is a unique transportation mode that includes the following features:

- Direct origin-to-destination service
- Small vehicles that are available for exclusive use by an individual or small group
- Service available based on the demand of the user
- Fully automated vehicles

- Vehicles restricted to a guideway that is reserved for their exclusive use
- Small guideways that are usually elevated (Furman, Fabian, Ellis, Muller, & Swenson, 2014).

Although the notion of ATNs is more than 50 years old, only five of them exist around the world (Furman et al., 2014), mostly because of the limits of “technical capabilities and scalability of ATN systems, along with the capital and operating costs” (Furman et al., 2014, p. 36) (Table. 1).

However, the aesthetic factor, in the sense of a visual intrusion, also is considered a drawback. Aesthetics is among the planning parameters of the Mineta Transportation Institute Report, which states, “attention to aesthetics will help gain public acceptance of the system” because “issues regarding visual intrusion are likely to be raised” when ATNs are planned (Furman et al., 2014, p. 53). The report recommended that planners “address this topic early in the planning process with visuals and [by] polling the public for their preferences. In this way, concerns over visual intrusion can be addressed and mitigated” (Furman et al., 2014, p. 53). According to the report, the aesthetics should be considered from inside as well as outside the cars because these different views might create different and unexpected impressions.

Concerns about the social acceptability of elevated guideways were expressed in the early period of automated guideway transit development. For example, *Automated Guideway Transit: An Assessment of PRT and Other New Systems* (United States Congress, Office of Technology Assessment, 1975) referred to public acceptance of aerial guideways,

E-mail address: [stefania.staniscia@mail.wvu.edu](mailto:stefania.staniscia@mail.wvu.edu).

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**Table 1**

List of the five ATN systems around the world and specific features.

Name	Location	Year of realization	Total track length (Km)	Number of stations
Personal Rapid Transit at West Virginia University	Morgantown, WV, USA	1975	14	5
ParkShuttle Rivium	Capelle aan den IJssel, NL	1999	3.6	5
Masdar City Personal Rapid Transit	Abu Dhabi, UAE	2010	1.5	2
Heathrow Pod, Heathrow Airport, Terminal 5	London, UK	2011	–	3
Suncheon Wetlands SkyCube	Suncheon Bay, ROK	2014	5	2

Source: Elaborated by the author based on information provided by [ATRA Advanced Transit Association \(2018\)](http://www.advancedtransit.org/advanced-transit/prt-characteristics/): <http://www.advancedtransit.org/advanced-transit/prt-characteristics/>.

and stated that they directly relate to the visual intrusion generated by the infrastructure and to threats to land use, property values, and the features of the neighborhoods they serve. To address the issue, the assessment proposed involving affected communities early in the planning process. In fact, as [Cascetta, Carteni, Pagliara, and Montanino \(2015\)](#) argue, successful infrastructure planning processes depend on the quality of the decision-making process where the desirable model is based, among other elements, on the five level stakeholder engagement implemented at each stage of the process. Similarly, *AGT Aesthetics: A Handbook for Planning & Design of Automated Guideway Transit (AGT) Systems* ([Skidmore, Owings, & Merrill, 1980](#)) addressed the aesthetic problems of elevated Automated Guideway Transit (AGT) systems. Several other studies during that period also focused on aesthetics (e.g., [Kvashny, Neumann, Trent, Halkias, & Walukas, 1983](#); [Trent, Kvashny, Neumann, Walukas, & Halkias, 1986](#)).

The Personal Rapid Transit system (PRT) built in Morgantown, West Virginia, US, in the 1970s was the first pilot ATN project. It was developed by West Virginia University (WVU) to solve connectivity problems caused by university expansion. During the 1960s, two new campuses had been built a few miles from the downtown campus and efficient linkages were needed that did not generate traffic congestion, air and noise pollutions, and automobile parking demands. Currently, the Morgantown PRT is an urban attraction. The *Atlas Obscura: An Explorer's Guide to the World's Hidden Wonders* identifies it as one of the 600 most interesting and strange places to experience on earth ([Atlas Obscura, 2017](#)). In its travel guide, the American Automobile

Association lists the PRT as the only valuable thing to see in Morgantown apart from Core Arboretum ([American Automobile Association, 2017](#)) (Fig. 1).

These evaluations of the Morgantown PRT offer a new way to think about elevated transit infrastructure and stimulate new ideas and research questions. The first research question relevant to the current discussion is: What makes the PRT attractive? A follow-up question is: Does the PRT's attractiveness influence its social acceptability? Furthermore, we could ask: Would its attractiveness mitigate negative perceptions of the PRT that mostly are associated with visual intrusion? Last, we could ask: Is our understanding of public acceptance of elevated infrastructure improved by employing a different type of public assessment of PRT? An affirmative answer to the last question would have major implications for urban planners and policymakers involved in ATN development.

This paper explains the first phase of an ongoing study that addresses the above-stated research questions. The first question listed above relates to the attractiveness of the PRT. Based on the heuristic assumption that the attractiveness of the PRT is in the riding experience, this study used third-party video data. The videos used in the analysis were filmed by amateur videographers inside PRT cars and posted on YouTube. To assess the passengers' perceptions of their riding experiences, a selected set of videos was analyzed. The goal was to discover new perspectives on infrastructure based on perceptions while riding in an automated car.

The originality of the paper, at least as far as the author's knowledge

**Fig. 1.** View of an elevated section of the PRT guideways approaching Beechurst station, southbound direction.

Photo: Vincenzo Cribari.

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