In our contribution, we discuss how modern types of urban structures and mobility have developed in Muscat, Oman. We argue that a transition from modern to postmodern types of mobility will be closely related to the transition from a car-dependent society to a society with options for multi-modal and smart mobility as well as new organizational forms. We raise the question of the extent to which specific social groups are disadvantaged by the existing mobility system. Furthermore, we explore if current plans will turn the future mobility system into a more postmodern and more inclusive one.

**Keywords:** Modernity, Postmodernity, Mobility, Urban, Oman, Muscat

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**Introduction**

In 1970, Sultan Qaboos bin Sa’id Al Said ascended to power in Oman, and many observers have identified this event as Oman’s entry point into a new era, its *renaissance* period. The discovery and exploitation of oil and gas have significantly shaped Oman’s development and have contributed to the welfare of its citizens. The United Nations Development Programme has described Oman’s progress between 1970 and 2010 as a “success story” because Oman could report “the fastest progress” in the Human Development Index by “converting oil to health and education” (54). In this paper, we discuss on the extent to which the development in the last five decades can be considered a progress toward modern and postmodern structures. In particular, we focus on everyday mobility in Muscat Capital Area.

Section 2 lays the conceptual groundwork for the paper, introducing the terms “modern” and “postmodern” and how they are used with regard to society and to urban development. Section 3 discusses how social and urban structures have developed in the last five decades in Oman and whether specific elements can be characterized as traditional, modern, or postmodern. Section 4 focuses on the mobility...
dimension. The first part introduces the reader to (modern) current-day automobility in Muscat. The second part presents new trends toward a smarter and more sustainable (postmodern) mobility. Section 4 is based on our empirical fieldwork conducted in Muscat in 2016 and 2017. To collect first-hand data on mobility patterns, we realized a large-scale quantitative household survey (n=850), as well as 39 individual qualitative interviews. To learn more about urban and transport planning, we also conducted four expert interviews with representatives from the Muscat Municipality, the Ministry of Housing, the Ministry of Transport and Communications (MOTC), and the transportation company Mwasalat. Since this paper focuses on a conceptual discussion of current mobility, we will only briefly touch on the concrete results of the survey (for more details, see Didero et al.). In section 5, we discuss the extent to which specific social groups of Muscat’s urban society are disadvantaged by the existing mobility system. We also explore if future MOTC plans will turn the current mobility system into a more postmodern and more inclusive one.

Postmodernism and Postmodernity in Urban and Mobility Studies

When discussing postmodern urban mobility, a short reflection on the general meaning of the term postmodern is required. Both the adjective postmodern and the corresponding nouns postmodernism and postmodernity are hard to differentiate. They have been used in a variety of disciplines in reference to different concepts and issues. In general, there are three major sets of meaning:

as an aesthetic movement (especially in the arts, in literature, but also architecture) since the late 1950s (Klages)

as a philosophy or a view of the world (Knox and Marston) connected to scientific methods and approaches, such as post-structuralism or deconstruction (Dear and Flusty)

as a specific historical era that is closely connected to a specific social formation and economic system (Nicol)

As a philosophical and scientific approach, postmodernism is generally seen as one that is replacing modernist attitudes such as objectivism, rationalism, and realism (Klages) with a more subjectivist and constructivist view of the world that distances itself from the fundamental premises of modernism and its “grand theories” (Wood 132). The definition of postmodernity as a specific historical period is based on the observation of substantial changes in economic and social structures that emerged during the late 20th century (Nicol 1). Some authors conclude that we are currently living in a postmodern period that is distinct from a previous era of modernity (Lyotard). Other writers rather argue for a change that is emerging from the condition of modernity itself. Instead of using the term postmodernity, they therefore propose alternative terminologies to describe this phenomenon, for example “reflexive modernity” (Beck) or “liquid modernity” (Baumann).

In the context of urban geography and urban mobility studies in general and for our approach in particular, all three of the term’s dimensions (as a style, a method, and an era) are relevant. However, while “postmodern architecture” and “postmodern scientific approaches” (Wood 132, 137) might be referred to at some point, this article is mainly concerned with an analysis of postmodernity as a historical, economic, and social condition that has been (and will be) influencing the urban (intra-) structure, governance, and mobility.
Postmodern cities are shaped by more general alterations of social and cultural structures, as well as by the development of lifestyle groups, consumerism, rising incomes, and free time availability. Soja described postmodern cities as characterized by structural fragmentation, loss of a functional core, social polarization processes, and the privatization of public spaces. They feature large-scale urban projects and privatopias such as waterfront developments and inner-city rehabilitation projects, gated communities, and large-scale urban entertainment centers. In addition, they are places of material and visual consumption (Knox and Marston 232, 239). Examples of postmodern urban structures have been described mainly for Western cities. Nevertheless, with globalization trends shaping cities worldwide, Wood suggests that the concept can be used as a sort of “searchlight” (145) for empirical urban studies in other parts of the globe as well. This is what we intend to do in the case of Muscat, with regard to both city structures and urban mobility.

Traditional, Modern, and Postmodern Structures in Oman and Muscat

The discovery, exploitation, and export of oil and gas since 1967 and the ascendance to power of Sultan Qaboos bin Said in 1970 have been identified as Oman’s entry point into a new era (Whelan). Under the auspices of Sultan Said bin Taimur, Sultan Qaboos bin Said’s father, Oman was characterized by extreme international isolation. Peterson classifies Sultan Said bin Taimur as a “neo-traditional ruler,” (4) since he aimed at preserving the existing traditional society and values. Other authors explain his policies with his desire to avoid financial risk and maintain Oman’s independence from foreign influence (Jones and Ridout 161). Although at that time, pressure on the state to allow socio-economic changes and to promote systematic development efforts was growing (Peterson 4), the modest development programs before 1970 resulted in only two hospitals, three schools, and around ten kilometres of asphalted road (see Table 1 and Table 3).

Oman: Modernizing and Modern

In one of his first declarations, Sultan Qaboos bin Said explained his intention to develop and modernize the country. Between 1980 and 2000, a share of 40-45% of GDP was invested in building public infrastructure (Valeri 84). These investments have significantly shaped the development of the Sultanate and contributed to a rapid modernization process. The countrywide programs included technical infrastructure (roads, electricity, etc.), as well as social infrastructure (schools, hospitals, etc.). In addition, a welfare system for Omani nationals was established, financed through the redistribution of oil rents and covering areas such as education, health services and medicine, and social assistance programs. Moreover, the state started playing the role of a “universal employer”, offering income opportuni-
ties in the public and para-public sector (Valeri 84, 86, 251).

Although the evidence of the modernization programs is undisputed, political and historical scientists do not perceive contemporary Oman as a modern country. The monarchy’s state and society are patriarchal (Peterson 5, 8), and Oman is considered a post-traditional country as well as a “nation in transition” (Al-Barwani and Albeely 122), where profound social change is taking place.

Changes are also taking place in Oman’s economic sectors, with traditional sectors (agriculture and fishing) declining and post-traditional structures (export of natural resources) continuously growing. Since the beginning of the millennium, there have been a number of efforts to diversify the Omani economy, and new sectors such as tourism, (private) education and communication have emerged, constituting a trend toward modern economic structures.

Young urban Omani women are particularly affected by the ongoing social changes. They marry at a later age and tend to have fewer children (see Table 1). They work as lawyers, doctors, dentists, engineers, economists, bankers, and university professors (Chatty 248). However, despite the integration of women in the education sector and workforce, family bonds and obligations still hold strong. Thus, their everyday lives are shaped by traditional norms and gender roles, as well as by modern habits and lifestyles.

Muscat: Modern and Postmodern
Over the last five decades, Oman has experienced extreme urban growth, driven by natural population increase, rural-urban migration, and international labor migration to the country. Consequently, Oman turned from a predominantly rural society into a highly urbanized one (Bontenbal). Muscat Capital Area witnessed the highest growth rate (see Table 2). In 1970, only 30,000 to 50,000 people lived in the area; by 1980, that number had grown to 226,000, among them 108,000 non-Omanis (Scholz 162). The Development Strategy Plan of 1975 shaped the development of Muscat, where the most important economic activities and political and administrative functions were to be concentrated (Hawley; Whelan). In contrast to other metropolises of the global south, urban poverty and irregular housing were counteracted quickly and efficiently by implementing large-scale government housing projects (Scholz 138, 177). Simultaneously while the low-income and social housing was being built, new neighborhoods for high-income families of Omani and Western origin developed in close proximity to the coast.

In 2010, 776,000 people lived in Muscat Capital Area (Al-Raisi 28), 48 percent of them foreigners. Despite the rapid population growth and urban sprawl westward, within a short time the newly developed neighborhoods were equipped with modern infrastructure (roads, schools, electricity, water, etc.; Nebel and Richthofen 25). The first urban structures that can be considered postmodern were developed after the turn of the millennium. In 2006, the construction of a first large Integrated Tourism Complex (ITC), called al-mouj (the wave) started. Because it was staged as a Mediterranean harbor, shopping, leisure,

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<th>1970</th>
<th>2010</th>
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<td>Urbanization</td>
<td>30%[^1]</td>
<td>75%[^2]</td>
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Table 2: “Urbanization of Oman and Population Growth of Muscat Capital Area 1970-2010”, own design, sources: 1) Bontenbal 33; 2) al-Raisi 14; 3) Scholz 162; 4) al-Raisi 28
and housing area, it is seen as a postmodern project. Other postmodern projects catering to the consumerist needs of well-off young urbanites include luxurious malls such as Muscat Grand Mall (opened in 2015) and Muscat City Centre (enlarged in 2013). The newly developed urban areas and the heterogeneity of urban society point to an increasing fragmentation of urban space because of the postmodern urban development.

This section has shown that, in contemporary Oman, (post-)traditional (political and social), modern (economic and urban), and postmodern (urban) structures exist side by side. In the following, we discuss the extent to which mobility structures and mobility patterns in Oman can be considered modern and postmodern.

**Mobility Structures and Practices in Muscat**

As Rammler and other authors have pointed out, the era of modernity coincided with a significant increase in the frequency and extent of human mobility. Lash and Urry therefore concluded that “[m]odern society is a society on the move” (252).

Since the beginning of the 20th century, everyday urban mobility has increasingly been dominated by automobility (Lanzendorf and Schönduwe). After World War II, the general increase in wealth and welfare turned both the private car and the owner-occupied house from luxury goods into common goods. Suburbanization and surging levels of private car use went hand in hand. While the automobile allowed for more dispersed settlement structures, these structures in turn made the use of private cars compelling. From a social scientist’s perspective, city structures that adapted specifically to cars have created a “new spatiality” (Elsheshtawy) of “motorscapes” (Edensor) and have made for a novel experience of the urban as such (Sheller and Urry 210).

In the last few decades, social and economic transformations including globalization processes, the broad availability of air travel, the Internet, and smartphone applications have obviously had a substantial impact on individual mobilities in general. The picture of urban everyday mobility in particular is less clear. In most cities in the West, the private car remains the cornerstone of everyday mobility. For the individual user, the private car’s convenience, non-stop availability, and privacy seem to outweigh and mask its negative ramifications, such as air pollution, traffic congestion, and considerable expense. On the other hand, authors like Lanzendorf and Schönduwe argue that indicators from both the supply and the demand side of everyday mobilities hint at a future paradigm shift toward postmodern forms of mobility. Postmodern transport options based on new technologies include car-based solutions like Uber or carpooling platforms, but also include public mass transportation systems. The broad availability of smartphones and app-based solutions for ticketing, trip planning, and real-time traffic monitoring, for example, could render the use of public transportation significantly more convenient. A shift from a modern private car dominated urban mobility toward multi-modal forms of postmodern mobility would in most cases include a more important role for

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<tr>
<td>Asphalted roads</td>
<td>10 km</td>
<td>31,000 km (2012)</td>
</tr>
<tr>
<td>Registered cars</td>
<td>-</td>
<td>776,000 (2009)</td>
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Table 3: Modernization of Transport and Mobility in Oman 1970-2017, own design, sources: 1) National Center for Statistics and Information; 2) Islam and Hadhrami 907f.
public transportation and car-sharing schemes. This could reduce congestion and improve accessibility and social inclusion for all those who cannot afford to own a car. This shift could thus enhance the sustainability of mobility structures.

In Oman, the modernization of the transport system, the construction of asphalted roads, went hand in hand with the urbanization and motorization process (see Table 3). Responding to the need to cover long distances in a short time and in keeping with the guidelines of the Supreme Committee for Planning issued in 1991, the road network has continuously been developed. In Muscat Capital Area, particular attention was given to upgrading and extending the highway network. By contrast, a true public transportation system was missing until 2015.

**Muscat: a Modern City of Cars**

Against the backdrop of the modernization processes and the development of a more or less affluent society, the car has developed into the main means of transport. (see Figure 1)

In 2017, the average household in Oman disposed of at least one private car, and the motorization level was 304 vehicles per 1,000 inhabitants (National Center for Statistics and Information, our own calculations). The costs for acquiring and maintaining a car and petrol prices (0.45 €/liter) are low (even after the petrol price increase since 2016), and thus automobility is affordable for almost all income groups. Only low-qualified labor migrants could not and still cannot afford to have their foreign driver’s license recognized or to buy and maintain a car. By contrast, in well-off households – regardless of nationality – almost every household member above the age of 18 years has a driver’s license and a private car at his or her disposal (Deffner and Pfaffenbach).

Our survey in Muscat Capital Area revealed that only 2% of the polled households do not own a car. Likewise, only 2% of the surveyed households are without at least one member holding a driver’s license. The analyses of our data show that the households without a car are almost exclusively Indian families with a monthly income below 1,000 OR (2,200 €).
In a city without a dense network of public transportation, car mobility is not a luxury for leisure trips, but a necessity. The car is needed, for example, to get to one’s workplace (87% of the respondents take the car to get to work). Since workplaces are clustered and widely dispersed, employees have to cover distances anywhere from less than 5 kilometers to up to more than 50 kilometers (one way). On average, work trips take 30 minutes. Comparing different neighborhoods, we found that trips to work from recently developed suburban neighborhoods take twice as long as from older neighborhoods situated closer to the major workplace clusters. However, even long commutes to the workplace can be covered in a reasonable amount of time due to the good road infrastructure and the highways (speed limit of 100 km/h and higher within the metropolis).

The current high degree of car-dependency, however, does not offer the same degree of mobility to all residents in Muscat. In particular, women without a driver’s license and/or being a member of a family that owns only one car, elderly people, children, teenagers under the driving age, and low-income labor migrants are faced with noticeable restrictions to their daily mobility.

Alternatives to the Private Car: Modern Options
For residents of Muscat who do not own a private car, the alternatives have been quite limited. Until 2015, there was no true public transportation system. Options were limited to either privately organized licensed taxi or microbus services (Baiza buses4) or informal transport options. According to the Royal Oman Police in 2014, there were 13,400 taxis and microbuses operating in Muscat (Jimenez et al.). However, many people did not consider them appropriate alternatives to the private car because taxis had no set fares and prices were often excessive and arbitrarily set by the taxi drivers. Especially female passengers often do not feel safe using taxis. The microbuses operate only on a few fixed routes (mainly along the central Sultan Qaboos Highway) and are often overcrowded. They have neither a regular timetable nor official bus stops.

As an answer to this lack of viable alternative transportation, some residents have started to offer informal shared private taxi services. Although this service is not officially recognized by the Royal Oman Police, it has been operating since the 2000s. Most passengers come into contact with it through personal relations and word of mouth, as the service technically speaking is not legal and cannot be formally advertised. Passengers contact the driver by phone and the driver then determines the route along which he picks up the passengers. This is a good option for people who have a regular route throughout the week. However, the drivers are also available for unplanned trips and can pick their passengers up on request. The drivers are usually Indian, and either they or their Omani sponsor owns the car. Although this service is illegal, Omani sponsors still participate in the service because it provides additional income for them.

Passengers are predominately Indian. Among them, women make up almost half of the passengers. For the passengers, this option is more cost-effective than owning a private car. It also avoids the tedious process of attaining an Omani driver’s license, which can be a costly and time-consuming process for expatriates with low income and demanding working hours.

Future Mobility: Postmodern Structures and Practices?
So far, our results clearly show that mobility patterns in Muscat have been deeply rooted in modernity because of the dominant transport means (private car) and the operational modes displayed by the rare
alternatives (taxi and microbus). We argue, that a transition from modern to postmodern types of mobility would be closely related to the transition from a car-dependent society to a society with options for multi-modal and smart mobility, as well as new forms of organization in the public transportation sector. In Muscat, some first developments in this direction already have taken place.

Public Transport 2.0
The Oman National Transport Company was founded in 1972. In late 2015, the Ministry of Transport and Communications (MOTC) decided to radically restructure and reorganize Oman’s public transportation sector. The company was rebranded into muwāṣalāt (transportations).

Under the organization and legislation of the MOTC, Mwasalat has been developing toward a company with a multifaceted profile offering a variety of services: intra-city and inter-city bus transportation services, cargo and freight delivery, and shuttle services. Mwasalat also offers a taxi service accompanied by a telephone application for pre-booking and immediate service. MOTC has granted operational licenses for taxi services to two companies (Ibtikar IT Company and Mwasalat) to support the public bus service, which still lacks feeder buses that service the bus stops along the fixed routes (MOTC 28ff).

These new taxi services have been installed as a result of the new Land Transport Law (RD 10/2016), which aims to “encourage the participation of private investors in public transport sector” and to “break the monopoly of public transport services and open the way for free competition in the provision of public transport services to guarantee the provision of diversified and quality transport services” (MOTC 26).

In a recent development, the public bus system is introducing a hybrid version of bus transportation that combines modern elements (street-bound without separate bus lanes) with postmodern elements (app-based; organized as a public-private partnership).

App-based Car-sharing
Although our data so far shows us that private car use is the predominant method of transportation in Muscat, some students are developing ways toward a smarter, more sustainable, and socially inclusive automobility.

A closer look at the students’ mobility patterns lends evidence that it is quite common for students to carpool to and from the university with their roommates or friends who share similar class schedules. Students share rides not only to share costs, but also to share each other’s company during the drives. Another reason for carpooling is that many students from the interior regions of Oman do not bring their cars to Muscat during study weeks and thus seek other means of transport to and from the university.

At the Sultan Qaboos University (SQU), the largest university in Oman, students took this concept to another level. In September 2017, they formalized and spread the car-sharing process with WhatsApp. About 250 students from SQU are now part of a campaign called Hamlat Kalbunian. Most of the users are male Omani nationals. Approximately 50 of the participants have a car and 200 are students seeking transportation. There are currently three different WhatsApp groups, categorized by the participants’ residence areas. Drivers use a message template in their respective WhatsApp groups to notify their upcoming route, and passengers use it to post their requests for pickups. The volunteer drivers use their own private cars and are not compensated for fuel expenses. For this reason, the campaign has won a university award for a charitable nonprofit cause.

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Because this type of car-sharing is based on new technologies, it can be considered a postmodern mobility option. Although until recently only a small number of users has been involved, our interviews indicate that postmodern app-based mobility practices will most likely spread in the near future because of the broad availability of smartphones in Oman and a young population with great affinity to new technologies. This opportunity has already been seized by the Middle East ride-hailing service Careem, which announced in October 2018 that it will introduce an app-based taxi-calling service in cooperation with a private taxi service in Muscat in the upcoming months.

**Muscat’s Citizens between Modern and Postmodern Mobility Options**

Current mobility patterns in Muscat are still car-dependent and therefore deeply rooted in modernity. This has not changed since a new public transport offer (Mwasalat buses) was introduced. Informal smart solutions for mobility also developed only recently. The variety of mobility options that display modern as well as postmodern elements reflects very well the heterogeneity of the urban society (see Figure 2). Specific social groups develop differing mobility patterns with regard to existing financial and cultural constraints. Consequently, modern mobility options (private cars, carpooling, and conventional taxi/microbus services) and postmodern ones (hybrid bus as a prerequisite for multi-modal mobility, app-based options) exist simultaneously.

The various mobility options and preferences become obvious in particular with regard to public transportation. According to our survey, the new buses are used neither by the interviewed Omani nor by those Indian families who have the means to own and maintain a private car. In our expert interviews, our interlocutors assumed that the increasing number of passengers of Mwasalat buses results from the foreign workers with low incomes who cannot afford a car. Their access to the city depends to a large degree on public mobility options. Therefore, for them, the ongoing expansion of the bus network is of the utmost importance.

Women also remain disadvantaged within the current mobility structures. Omani
women, in particular, cannot imagine using means of transportation other than the private car, for cultural reasons (restrictions on using public places when men who don’t belong to the extended family are present). Women who don’t have a driver’s license and/or don’t have a car at their disposal are therefore still extremely restricted in their access to the city.

To sum up, the current hybrid modern and postmodern mobility options are still rather selective and disadvantage certain population groups. The question is whether plans by the government to transform the current urban mobility system in Muscat will contribute to turning it into a more sustainable and more inclusive one. Assuming that most people will reduce car mobility (and turn toward other options) only if the car becomes more expensive, the Ministry is planning to introduce road tolls and parking meters. In parallel, it plans to continue its endeavors to establish an affordable, accessible, safe, and smart integrated transport system. If truly established, this new mobility system would be more inclusive because it will offer public transport that is affordable for all income groups and makes the city more accessible for those without a private car. At the same time, however, segregation of mobility will increase because only middle- and high-income households will be able to afford car mobility.

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4 Baiza is the minor coin of the Omani Rial (OR).

5 This campaign does not include female students yet. Since SQU is a segregated university, the segregation extends to the campaign. There is, however, a budding request from female students to have the same service.

Notes
1 In addition to the noted authors, Hamda al-Hajriy contributed to this project as research assistant. Furthermore, during our fieldwork in Oman Dr. Hamad al-Gharibi, Director of Planning and Survey at the Ministry of Housing in Buraimi supported us in many ways. We owe all our local collaborators a huge debt of gratitude. In addition, we would like to thank the German Research Foundation for their financial support for the project.

2 As defined for example by the Cambridge Dictionary "a system of vehicles such as buses and trains that operate at regular times on fixed routes and are used by the public".

3 We exclusively focused on Omani and Indian households living in Muscat because they make up the two largest nationality groups. In order to be able to compare mobility patterns, we looked at higher paid Indian nationals who live with their families in Oman. We excluded lower paid Indian nationals since they usually depend on their employers with regard to their housing and mobility.

Works Cited


