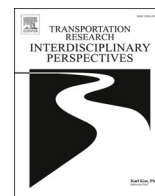


Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Transportation Research Interdisciplinary Perspectives

journal homepage: www.sciencedirect.com/journal/transportation-research-interdisciplinary-perspectives



Middle-Class, Cosmopolitans and Precariat among Millennials between Automobility and Multimodality

Sören Groth^{a,b,*}, Marcel Hunecke^b, Dirk Wittowsky^c

^a ILS – Research Institute for Regional and Urban Development gGmbH, Research Group Mobilities and Space, Germany

^b University of Applied Sciences and Arts Dortmund, Faculty of Applied Social Studies, Germany

^c University of Duisburg-Essen, Institute of Mobility and Urban Planning, Germany

ARTICLE INFO

Keywords:

Automobility
Multimodality
Mobilities
Social milieus
Class
Psychology of mobility
Material mode options
Mobility resources

ABSTRACT

This paper refers to the concept of social milieus – which classifies societies according to socio-economic and socio-cultural criteria – and applies it to the everyday mobilities of young Millennials. Starting from three contrasting young social milieus from different social classes – cosmopolitans, middle-class and precariat – differences in material mode options and psychological evaluations of transport modes were investigated, which can be understood as (individual and collective) preconditions for participation in certain hegemonic or alternative transport regimes. For this purpose, quantitative data from Germany from the early 2010s of 852 young people aged 17 to 24 were used. As a result, this study contrasts the often-proclaimed linear regime shift towards multimodality, which would treat Millennials as a supposed collective driving force. The data reveal milieu-specific deviations from the predominant transition narrative as follows: First, young cosmopolitans seem to be the only group to share the historically momentous radical emotional distance from private automobility, which is reflected in ‘green’ multimodal behaviours. In contrast, the young middle-class shows signs of (conservatively) reproducing car-oriented behaviours. Finally, the young precariat faces socio-economic restrictions and tends to be outside the dualistic categorisation of automobility/multimodality. In conclusion, we see the concept of social milieus as an important thought-provoking impetus for a necessary change of perspective in international transport and mobility research to make the problem of social division in transportation more visible. If the direction towards multimodality aligns with the normative compass for a socio-ecological transformation, (transport) policies must provide even stronger support to milieu-specific framework conditions.

Introduction

For some years now, a regime transition from hegemonic private automobility towards multimodality as an alternative has been prominently postulated in many countries of the Global North (e.g. [European Commission, 2018](#)). Western transport and mobility research considers this to be a shift away from the dominant use of the private car towards a de-hierarchised flexible use of different transport modes in everyday mobility ([Geels, 2012](#); [Spickermann et al., 2014](#)). Regarding this, the concept of multimodality has a good reputation as it is directly associated with the ‘Sustainable Mobility Paradigm’ ([Banister, 2008](#)): The private car, which is non-sustainable in terms of fossil input and output, is generally used less frequently and for shorter distances in multimodal behaviours on local and regional scales than in its exclusive use ([Nobis, 2007](#)).

Since the beginning of the 2010s, young adults from the Millennial Generation, i.e., the young age cohort born between the early 1980s and the late 1990s, have been regarded as central drivers of the transition process towards a multimodal society. They are also called the ‘New Generation’ ([Kuhnimhof et al., 2011](#)), which expresses a historically notable shift away from exclusive car use towards more multimodal behaviours ([Delbosc and Currie, 2013](#); [Hjorthol, 2016](#); [Kuhnimhof et al., 2012a](#)). Two special characteristics of Millennials are often highlighted to explain this departure from dominant car use compared to previous generations of young adults. The first is altered life circumstances, which are less associated with private car use: More students than before, more city dwellers, a late start to their careers, longer periods of financial insecurity, late starting a family, etc. (e.g. [Klein and Smart, 2017](#); [Kuhnimhof et al., 2012b](#); [Melia et al., 2018](#)). The second is psychological

* Corresponding author.

E-mail address: soeren.groth@ils-forschung.de (S. Groth).

<https://doi.org/10.1016/j.trip.2021.100467>

Received 21 April 2021; Received in revised form 2 September 2021; Accepted 7 September 2021

Available online 7 October 2021

2590-1982/© 2021 The Author.

Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

distancing from private automobility as a result of increased environmental awareness (e.g. [Delbosc and Currie, 2014](#)), more pragmatic attitudes towards transport modes (e.g. [Puhe and Schippl, 2014](#)), less emotional attachment to the private car (e.g. [Bratzel, 2014](#)) or emotional upgrading of the bicycle (e.g. [Carstensen and Ebert, 2012](#)). Moreover, these trends are linked to a high affinity for new forms of interconnected mobility (car sharing, bike sharing, scooter sharing, etc.). For example, young Millennials have been socialised as ‘petite poucettes’ ([Serres, 2015](#)) and/or ‘digital natives’ ([Konrad and Wittowsky, 2018](#)) in the digital era. Therefore, they can easily travel based on an Internet of Mobility Services (IoMS) by using modern information and communication technologies such as smartphones (e.g. [Canzler and Knie, 2016](#)).

However, such a predominant transition narrative, according to which one age cohort as a ‘quasi-homogeneously’ conceptualised group can force transition processes, runs the risk of neglecting the social inequalities within modern societies of the Global North. This is problematic because it misses divergent or even opposite tendencies that may counteract a linear transition process among the Millennials. Two dimensions of inequality are worth noting as examples. First, reference can be made to the socio-cultural self-understanding of modern societies, according to which they understand themselves as socially differentiated, individualised, and pluralised in terms of values, attitudes, desires, etc. ([Beck and Beck-Gernsheim, 2002](#)). This corresponds with an inter-individual variance in transport-related evaluation processes, which are known to lead to socio-culturally differentiated lifestyles or mobility styles (e.g. [Anable, 2005](#); [Lanzendorf, 2002](#)). Following on from this, studies in which young people are typified according to the psychological constitution give indications that certain symbolic affective auto-orientations are by no means simply on the wane (e.g. [Møller et al., 2018](#)). Second, in the course of neo-liberal policies in recent decades, socio-economic inequalities within post-industrial societies have been reactivated. These are reflected in the corresponding ‘precarity’ (e.g. [Schram, 2015](#)) of certain marginalised subgroups (precarious employment, low income, low level of formal education, etc.). Here, precarity describes a perpetuation of socio-economic restrictions and insecure forms of life and employment, expressed in the context of everyday mobility in social exclusion from participation in flexible transport use and is negotiated under terms such as Transport Poverty ([Lucas, 2012](#)); a perfidious form of how transport justice is undermined at the social level ([Martens, 2017](#)).

Regarding this, the present contribution aims to raise awareness of social inequalities within the Millennial Generation and analyse them concerning their effectiveness within the dualistic discussion of automobility and multimodality. To reduce the interindividual variability in socio-cultural and socio-economic inequalities among young people, we refer to the concept of social milieus, in which inequality-constituting characteristics (social status, value orientations, etc.) are aggregated and reflected in specific segments of social milieus ([Vester, 2001](#); [Hradil, 1987](#)). This recourse to approaches from new social structure analysis is valuable for transport and mobility research in at least three respects: First, it supports a break from a widespread conceptualisation of young adults as a presumed collective that would reflexively drive a shift away from private automobility. This aspect corresponds with some critical studies that aim to deconstruct notions of an automated transformation process by the young generation (e.g. [Delbosc et al., 2019](#)). Second, a bridge is built to contemporary social sciences, according to which mechanisms of power and domination seem to be responsible for the unequal distribution of material or incorporated resources, which is reflected in the concept of social milieus and which should be influential in everyday mobility. Third, an awareness of milieu constellations at the (transport) policy decision-making level can contribute to the design of transport policy measures with the goal of a transition shift towards multimodality, which would otherwise not be considered.

Against this background, the underlying research interest of this paper is to investigate to what extent mobility practices (mode use,

material mode options, certain psychological evaluations of transport modes, etc.) differentiate according to young social milieus. To pursue the research interest, this study looks at three contrasting social milieus: i. cosmopolitans, ii. middle-class, and iii. precariat. This is a theoretically derived a-priori segmentation, which has already been tested in the local context of the German city of Dortmund ([Hunecke et al., 2020](#)). In this sense, the present paper is a replication of this previous study. Here, we can draw on a more extensive data set with inherent potential for higher-quality statistical analysis procedures.

This paper is structured as follows: First of all, we introduce the concept of social milieus in a theory section in distinction to other social segmentation approaches (Section “Segmentation approaches: class, stratification, lifestyles, social milieus”) and describe previous observations on the three milieus (Section “Precariat, middle-class, cosmopolitans”). We then explain the theoretical-conceptual assumptions on psychological evaluations of transport modes (Section “Values, norms, attitudes and emotions, control beliefs and mobility constraints”). Based on this, we derive our research questions (Section “Research questions”). We then explain our methodology by presenting the data collection and the respective operationalisations (Section “Methodology”). Finally, we present the findings in Section “Empirical findings” and discuss them in the light of our research interest (Section “Summary and Discussion”).

Theories and concepts

Segmentation approaches: class, stratification, lifestyles, social milieus

Social milieus represent a theoretic-conceptual approach from the social sciences that are used to classify (in particular post-industrial) societies regarding socio-economic and socio-cultural factors to reveal social differences, inequalities and conflicts (e.g. [Hradil, 1987](#); [Schulze, 1993](#); [Vester, 2001](#)). Class and stratum models prominently preceded the milieu model, used to segment and formerly differentiate industrial societies according to socio-economic criteria. In this respect, class models initially stated a socio-economic division of society characterised by exploitation processes and class struggle. Karl Marx (1990, [1867]) dichotomous understanding of class for early industrial society, characterised by antagonistic classes of ruling capitalists, who possess the means of production, and ruled workers (or the proletariat), who must sell their labour power to capitalists, is prominently received to this day. Then, stratification models gained momentum in the context of late industrial societies of liberalised democracies. These socio-economic differences no longer needed to be understood as rigid social barriers. Instead, social mobility between lower and upper strata became conceivable (e.g. [Esping-Andersen, 1993](#); [Simkus, 1981](#)). In this regard, reference can be made, for example, to the ‘house model’ of Ralf Dahrendorf (1979 [1965]), with which he segmented German society into seven strata, considering socio-economic (vertical) and socio-cultural (horizontal) criteria. However, in the 1980s, such class or strata models were criticised for being anachronistic in emerging post-industrial societies. Ulrich Beck (1992 [1986]) argued that in modern societies of the global North, any traditional ties would dissolve (class, marriage, religion, place). He prominently advanced the upcoming individualisation thesis and stated an ‘elevator effect’; i.e. a collective social advancement of all population groups in the post-war decades, favouring social change and forming individualised lifestyles based on pluralised values and attitudes, wishes, etc. In this context, discussions were also held about the breaking of people’s entanglement in class structures that were traditionally effective in people’s everyday lives ([Beck, 1984](#); [Clark and Lipset, 1991](#)).

Based on this critique, concepts around social milieus and lifestyles came up, according to which initially socio-cultural dimensions were included in the segmentation processes of Western societies ([Abel, 1991](#); [Barr and Gilg, 2006](#); [Schulze, 1993](#); [Zukin, 1998](#)). It has been argued that individualisation processes are by no means equivalent to the atomisation of societies. Rather, vice versa; processes of emancipation

from the above-mentioned traditional ties and processes of constituting new socio-cultural ties overlap (Götz and Schubert, 2004). In this context, lifestyles and social milieus would represent new centres of collective feelings, belongings, and social orientations. Furthermore, it was assumed that similar socio-economic living conditions would produce pluralised lifestyles that would become more important for the everyday reality of people than differences in socio-economic living conditions (ibid.). Against this background of assumptions, researchers focused on exploring self-selected belongings in terms of socio-culturally distinctive forms of communication, food and clothing tastes, preferred hedonisms, etc., from which clusters of lifestyles or social milieus were derived. These gained popularity, especially in market research (e.g. SINUS, 2015; SINUS, 2018).

To a large extent, international transport and mobility research is highly influenced by this understanding of society and continues to refer to underlying segmentation approaches until today. The lifestyle approach, for example, is prominently used here to cluster distinctive orientations and test them in various ways concerning their effectiveness in the field of everyday mobilities (Choo and Mokhtarian, 2004; van Acker et al., 2014; van Acker and Witlox, 2010). Furthermore, the concepts of mobility styles and modality styles were derived based on lifestyles, which explicitly build on transport-related orientations (e.g. Anable, 2005; Krueger et al., 2018; Lanzendorf, 2002; Ohnmacht et al., 2009; Olafsson et al., 2016; Prillwitz and Barr, 2011). Mobility styles proved to be suitable for exploring target groups, similar to market research, regarding their high explanatory power in modal splits. For instance, to raise awareness of new 'sustainable' transport alternatives and derive soft policy measures for behavioural change (e.g. Diana and Mokhtarian, 2009a; Diana and Mokhtarian, 2009b).

In contemporary social sciences, however, there is a search for alternatives to the influential lifestyle conception and related approaches based on individualised societies with pluralised values. This is caused, inter alia, by the drifting apart of Western societies, which is expressed in diverse (progressive and regressive) forms of protest (e.g. Geiselberger, 2017). In this context, the lifestyle approach loses significance: It – if applied in the theoretical tradition of individualisation and pluralisation – suggests a pluralised coexistence of attitudes and consumer sovereignty, but without including the impact of hegemonies and hierarchies (Brand and Wissen, 2018; Reckwitz, 2019). Hegemonies and hierarchies are not negligible against the backdrop of social division because these are fundamentally responsible, among others, for the uneven distribution of material and incorporated resources and perpetuating unequal conditions, resulting in the struggle for interpretive sovereignties and cultural valorisations or devaluations (ibid.). In this regard, at least two causes can be highlighted: First, societal structural change (deindustrialisation, tertiarisation) in conjunction with neoliberal policies, in terms of deregulation and flexibilisation of labour markets, privatisation, as well as the dismantling of the welfare state, in last decades, which have led to social decline or made people increasingly fearful of being affected by a social decline (Brown, 2017; Nachtwey, 2018). Beck's (1992 [1986]) 'elevator effect', which in the post-war decades still stood for the collective rise, is now being countered by an 'escalator effect' (Nachtwey, 2018), according to which social rises and declines are continuously achieved in individualised forms. Second, new fields of tension have emerged in the centers of Western societies that fundamentally affect everyday life: 'non-sustainable' ways of life and production based on fossil fuels, discriminatory ways of speaking, glorification of imperial pasts, etc. are increasingly called into question by progressive movements in "applied reflexivity" (Beck et al., 2007 [1994]; Giddens, 1992). Here, struggles for interpretive sovereignty are at stake, which also affect the field of everyday mobilities. For example, ecologically motivated protest movements ('Fridays for Future', 'Extinction Rebellion', etc.) are calling for a fundamental shift away from fossil-based patterns of production and living, and thus also from private automobility (e.g., Reckwitz, 2019). In contrast, conservative counter-movements, which are increasingly forming on the Internet (for

example, under names such as 'Fridays for Hubraum'; Eng.: 'Fridays for Engine Displacement'), call for maintaining the fossil transport regime of private automobility (regarding the partly radical nature of regressive oppositions on the internet, see also Nagle, 2017).

A debate is emerging centering around these developments about the 'return of classes' and corresponding class struggles (e.g. Geiselberger, 2017; Nachtwey, 2018; Žižek, 2016). Here, a conflation with the concept of social milieus is sometimes undertaken, drawing on the notion of social class in Pierre Bourdieu's theoretical tradition (e.g. Eribon, 2013; Reckwitz, 2019). In the late 1970s, Bourdieu (2010 [1984]) prominently classified French society into three objective classes based on different lifestyle expressions, from which he then deduced economic and cultural capital as explanatory dimensions. Hradil (2006) states that social milieus arise from adaptation processes to the living conditions of social classes and class fractions. While the social boundaries between classes have a hermetic character, or a change of class – similar to what Eribon (2013) describes on the basis of his own person – is only accomplished with hard practical and emotional work, the social boundaries between the social milieus within a class tend to be more permeable. In this sense, classes can thus be understood as socio-economic and socio-cultural (as well as socio-political) constructs in which, following Reckwitz (2019: 123ff.), class-compatible but thoroughly heterogeneous social milieu constellations exist.

Thus, if the concept of social milieus will be used in transport and mobility research, there should be no claim to compete with traditional concepts (mobility styles, modality styles, etc.) for the highest model qualities (Dangschat, 2018; Dangschat and Segert, 2011). Instead, its added value in the application is to reveal certain milieu-specific differences within their class-specific embeddedness in the field of everyday mobilities and to contribute to reflecting observations in the light of social inequalities and new social conflicts. Thus, the uneven material and incorporated configurations of everyday mobility are incorporated in class-specific social milieus. This is interesting when transport modes are not just functionally understood as technical tools for the realisation of travel purposes but have a far-reaching social function in the context of their embeddedness in (hegemonic or alternative) transport regimes (e.g. Sheller and Urry, 2006; Urry, 2011).

Precariat, middle-class, cosmopolitans

From the theoretical-conceptual explanations, we want to apply the concept of social milieus, which is well-established in the social sciences, to everyday mobility through a priori segmentation. This is a methodological process in which the number of postulated segments, their constituent characteristics, and their relation to the respective segments are theoretically derived and determined prior to data collection (see, e.g. Wedel and Kamakura, 2000). To this end, we will refer to three contrasting social milieus from different social classes that have been investigated in different studies in a relatively stable way over an extended time: i. the (traditional) middle-class, ii. (progressive) cosmopolitans and iii. the (marginalised) precariat. These three social milieus can be decently placed within the contours of Reckwitz's (2019) class model, which primarily assumes a divided German middle class into "new" and "old" and a marginalized underclass. In the light of existing studies, the three social milieus can be characterised as follows:

The traditional **middle-class** milieu forms – alongside an adaptive-pragmatic milieu and also conservative establishmentists (Reckwitz, 2019) – the core of the eponymous 'old' German middle class. This milieu is considered large and, in its self-perception, state-underpinning, i.e., seeing itself as the perpetuator of culturally bourgeois values and patterns of action in economic, socio-cultural and political terms (Sperber, 1997). These include, above all, traditional materialistic value dimensions such as the need for secure living conditions and stability and order in the workplace and private life (Hempelmann and Flaig, 2019; SINUS, 2018). The middle-class is socio-economically characterised by largely secure income conditions, which have proven to be

largely resistant to risks of fluctuating business cycles or even emergent forms of long-term unemployment concerning their professional positions in the commercial middle-class. The German middle-class is primarily associated with suburban and exurban living conditions of the monofunctional one- and two-family housing estates. However, they are also increasingly moving into the cities (see similar developments in other contexts, e.g. Atkinson, 2006; Watt, 2009; Weck and Hanhörster, 2015). With structural change and the transition to a post-industrial era, this traditional middle-class increasingly sees itself threatened socio-economically and socio-culturally by an increasing polarisation of incomes, which corresponds to fears of economic decline (Grabka and Frick, 2008). On the other hand, they feel challenged by the cultural rise of cosmopolitans, which is accompanied by a loss of the hegemonic interpretative sovereignty of norms (see the numerous comments on this in Burzan and Berger, 2010).

Cosmopolitans have gained socio-economic and socio-cultural importance in recent decades (Beck, 2014 [2004]; Breckenridge, 2002; Delanty, 2006; Fine, 2008). Many studies have characterised them as having a high level of (formal) education, high global awareness for socio-ecological conflicts, an open mind and pluricultural attitude structure and diverse intellectual interests (Grinstein and Riefler, 2015; Pichler, 2008; Pichler, 2009). About everyday mobility, specifically transregional mobilities, these attributes can, in turn, be associated with specific multimodal behaviours – mostly detached from private automobility (Monteiro et al., 2021). In this relation, Strenger (2019) identifies strong normative beliefs among cosmopolitans, where they care about the world's situation and orient their actions to bring positive change in world society. The cosmopolitan milieu can be assigned to the 'new' German middle class and is part of the driving force behind the knowledge-based expansion of the post-industrial German society. In this sense, the emergence of the new middle class with cosmopolitans as an important social milieu is closely related to the emergence of reflexive modernisation processes since the 1980s. In this new process, life-threatening risks such as side effects of simple modernisation processes (radioactive radiation in energy production, pollution and toxic substances from fossil fuel production and lifestyles) are reflexively eliminated by revising traditional lifestyles (Beck et al., 2007 [1994]). Reckwitz (2019) observes a cultural rise for this class, shifting the standards of what constitutes the middle way of life. Traditional cultures are increasingly perceived as irrelevant by cosmopolitans. As a result, they are more often located in those global city networks that, as per Richard Florida (2003), provide them with more inspiration for progressive and creative work than the locally constricting exurban locations of traditional communities.

The precariat is socially located – alongside, e.g., petit-bourgeois traditionalists or also hedonists (Reckwitz, 2019) – in today's underclass and characterised by precarious living and employment conditions (Bessant, 2017; Schram, 2015; Standing, 2014). Terminologically, the precariat is based on the above-mentioned designation of the proletariat by Marx and denotes those social milieus of post-industrial societies that are affected by a regressive return of socio-economic exclusions (Foti, 2017). Such social regressions have been observed since the 1980s following the economic growth periods of the post-war decades. They are understood as the result of neoliberal policies in Western societies, characterised by flexibilisation and deregulation and the dismantling of welfare state principles (Nachtwey, 2018). Members of the precariat have a low level of formal education, survive on steadily decreasing transfer payments and/or work under the precarious conditions of the emerging gig economy (Crouch, 2019; MacDonald and Giazitzoglou, 2019; Muntaner, 2018). Due to their precarious income situations, they tend to be excluded from high-priced housing markets of the prospering metropolises and are consequently localised to be on the fringes of society (Marcuse, 1997).

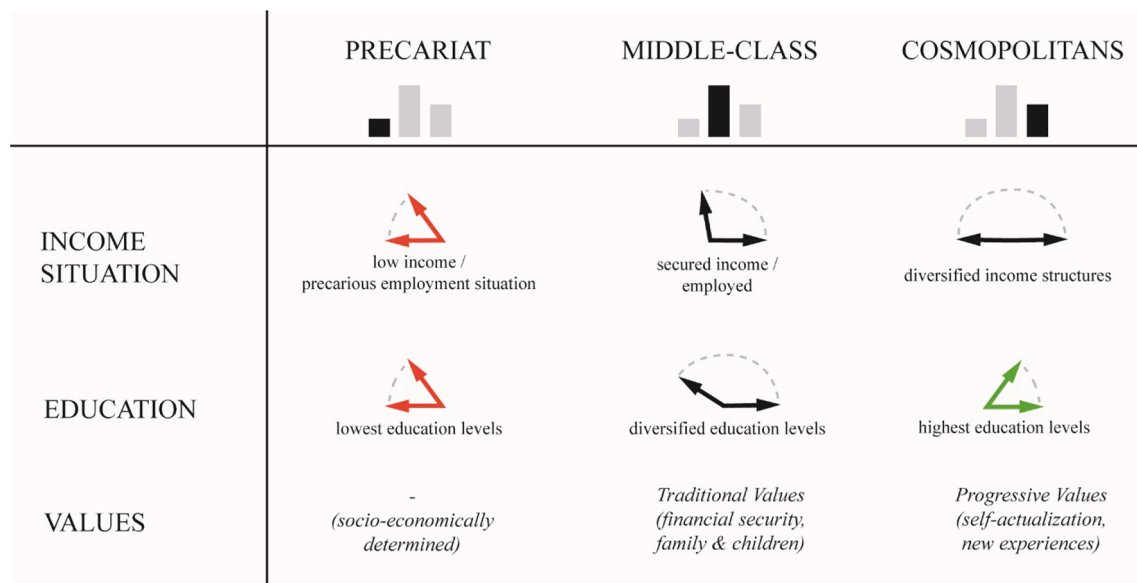
Values, norms, attitudes and emotions, control beliefs and mobility constraints

Psychographic characteristics must be distinguished to assign socio-culturally specific transport orientations to the three young social milieus. The concept of social milieus itself has been established under the conditions of broad social prosperity, in which value dimensions were differentiated (Schulze, 1993, 1994). Such values do not relate to specific objects or situations but structure a person's life goals and worldview through their overall orientation function. Against this background, value dimensions enter directly into the segmentation process of social milieus. Following Ronald Inglehart (1971), for example, value pluralism can be seen in the coexistence of materialistic, traditional value orientations and post-materialistic, progressive values. Materialistic, traditional value orientations include personal striving for economic stability, strong family cohesion, which constitute the ('old') middle-class outlined above. Post-materialistic, progressive values incorporate the desire for individual self-fulfilment beyond perceived constraints for materialistic growth or family life, constituting cosmopolitans within the new middle-class.

In addition to the overall values, which enter into the segmentation process of the social milieus, two broader theories of action have been empirically grounded within transport and mobility psychology in recent decades to explain transport use. They are assumed to have a direct influence on the specific mode use. The first is the Theory of Planned Behaviour (TPB) by Ajzen (1991), and the second is the Norm Activation Model (NAM) by Schwartz (1977). While the NAM focuses on explaining norm-based actions, the TPB has a more general claim to explain decision-based behaviours. Both theories of action have been successfully used to explain transport use (e.g. for the TPB in Heath and Gifford, 2002; Morten et al., 2018; and the NAM in Hunecke et al., 2001; Mehdizadeh et al., 2019). The relevance of individual constructs from the TPB and the NAM for transport use has been examined in detail in numerous studies and confirmed by meta-analyses (e.g. Gardner and Abraham, 2008; Lanzini and Khan, 2017). Content-wise, the constructs underlying these approaches can be divided into three different classes of influencing factors of direct transport use, which are used for the later analyses of the milieu-specific, psychographic transport-related characteristics:

First, **norms** are generally characterised by an obligation to behave appropriately or inappropriately. Usually, a differentiation is made between social and personal (ecological) norms. Social norms – prominently applied in the Theory of Planned Behaviour (Ajzen, 1991) – refer to the expectations of social groups, which are considered relevant for the person. Personal (ecological) norms – coming from the Norm Activation Model (Schwartz, 1977) – are characterised by personal moral obligations to behave in a prosocial or environmentally friendly way (Lind et al., 2015; Møller et al., 2018). At this point, it must be mentioned that we had to omit items on social norms from our questionnaire due to a lack of sufficient space. We preferred constructs on the personal (ecological) norm to the social norm because the personal norm seems to be more important in an individualised society. For example, in an important meta-analysis, the personal norm was identified as a more important predictor of mode use (Gardner and Abraham, 2008; Hoffmann et al., 2017). Today's ecologically motivated protest movements (e.g. 'Fridays for Future') can play an essential role in stimulating the effectiveness of ecological norms among people.

Second, **attitudes** characterise summarising evaluations of objects, persons, situations, or ideas. They influence individual behaviour by pre-structuring and aligning information processing in the preliminary individual decision-making processes. Regarding mode use, specific evaluation dimensions of attitudes are often differentiated within mobility psychology to characterise the content. For example, daily mobilities in physical-material space from A to B are always connected



*If arrows are red, the characteristic is at a weak level. If arrows are coloured green, the characteristic is at a strong level. If arrows are black, the characteristic is more diversified.

Fig. 3.1. Core characteristics of the three social milieus (own illustration)

with the social-symbolic evaluation processes of the travellers (e.g. [Jahn and Wehling, 1999](#)). The symbolic-emotional evaluation processes of different transport modes are important, which cannot be sufficiently attributed to material-functional aspects, such as time and costs (e.g. [Gatersleben, 2007](#)). Symbolic evaluations are socially conveyed and are thus always linked to emotional evaluations. [Hunecke \(2000\)](#) distinguishes four symbolic-emotional dimensions related to mode use: autonomy, enjoyment, privacy and status. For these, interrelations with mode use could be repeatedly shown ([Hunecke et al., 2007](#); [Hunecke et al., 2020](#)). However, the status dimension is difficult to measure reliably using standardised items for reasons of social desirability, which is why we refrained from integrating items on the status dimension in the present questionnaire (see Section “Methodology”). However, more recent approaches to working with status constructs can be observed in Asian studies at present ([Zhao and Zhao, 2020](#)). In future work, it will be necessary to examine the extent to which these status items might be applied to the standardised questionnaires in the countries of the Global North according to the criterion of reliability. However, within the transition debate from the car to multimodality outlined in the introduction of this paper, overarching processes of de-emotionalisation from the private car are assumed to have taken place ([Bratzel, 2014](#); [Delbosch and Currie, 2014](#)), which were a departure from the once stable emotional relationships between man and machine ([Sachs, 1992](#); [Sheller, 2004](#)).

Third, **control beliefs** describe the subjective assessment of individuals to achieve their goals in their respective behavioural contexts. When applied to mode use, control convictions thus characterise the subjective evaluation of the feasibility of achieving one’s own mobility goals in the respective life context. In mobility psychology, control beliefs were most frequently recorded via the construct of perceived behavioural control (PBC) from the theory of planned behaviour ([Ajzen, 1991](#)). In addition to intention, PBC always proves to be one of the strongest influencing factors when it comes to using either the car or ‘green’ transport modes (e.g. [Gardner and Abraham, 2008](#); [Lanzini and Khan, 2017](#)).

In analyses of mode use, two other behaviour-relevant control beliefs are identified in addition to PBC. They include perceived mobility necessities (PMN) and cycling weather resistance (CWR). PMN results from the constraints and requirements of personal circumstances that require mobility at a certain time and limit personal control ([Thorhaug et al.,](#)

[2020](#)). Correlation analyses have shown that the assessment processes recorded as PMN can be measured independently of specific autonomy assessments regarding the use of public transportation ([Haustein and Hunecke, 2007](#)). For the control conviction of the CWR, above all, correlations with cycling can be shown. As a construct, CWR includes the subjective conviction of using a bicycle, even in bad weather. An analysis of mobility diaries published in Germany showed that people with a high level of CWR use the bicycle significantly more often as a standard transport mode ([Haustein et al., 2007](#)).

Research questions

The following four central research questions will be addressed in response to the initially formulated interest in understanding the role of the milieu concept within Millennials concerning a potential transition from an automobile to a multimodal society:

- Mode use:** To what extent do travel behaviours differ in terms of social milieus?
- Material mode options:** How are material mode options distributed across the social milieus?
- Psychological evaluations of transport modes:** How do psychological evaluations of transport modes differ between social milieus?
- Material options and psychological evaluations of transport modes as a precondition for certain travel behaviours:** To what extent can automobile-based or green mode use be explained by existing material mode options and psychological evaluations of mode use?

Methodology

Data collection and data set

We can draw on the following data to explore milieu-specific differences in the field of everyday mobility: Our data set is based on a nationwide survey of young people between 14 and 24 years of age conducted in Germany at the end of 2013 (methodological explanations on this can also be found in [Konrad and Groth, 2019](#); [Konrad and Wittowsky, 2016](#); [Konrad and Wittowsky, 2018](#)). The survey is based on a

Table 3.1

Further associations of the young social milieus with sociodemographic characteristics (Contingency analyses with chi-square tests).

	Cosmopolitans (n = 201) ¹ (in %)	Middle- Class (n = 501) ¹ (in %)	Precariat (n = 150) ¹ (in %)	Sample (n = 852) ¹ (in %)
Core cities ($\chi^2 = 33.566$; $p = 0.000$)	60.3	42.3	29.7	44.3
Gender (female) ($\chi^2 = 1.631$; $p = 0.442$)	55.4	50.9	55.5	52.8
Migrations background ($\chi^2 = 3.369$; $p = 0.186$)	13.3	10.1	15.1	11.7
Migrations background Global South ($\chi^2 = 7.339$; $p = 0.025$)	4.6	3.5	8.9	4.7

¹ Due to non-responses, the sample size may be slightly reduced for some variables.

standardised questionnaire with questions to determine i. the three contrasting social milieus (i.e., i. cosmopolitans, ii. middle-class, and iii. precariat), ii. mode use, iii. material mode options, and iv. psychological evaluations of transport modes. A total of 1200 persons were interviewed. However, the later analyses are limited to the personal data of 17 to 24-year-olds. We explain this by the fact that, by law, driving licenses in Germany can only be issued to people aged 17 and over. This limitation is unavoidable for later analyses, since conclusions are to be derived directly on the debate about a possible transition from an automobile to a multimodal society. As a consequence, the sample size has been reduced to a total of 852 persons.

In the introduction, we emphasised the replicative nature of the present study. Thus, this study is preceded by the paper ‘Young social milieus and multimodality: Interrelations of travel behaviours and psychographic characteristics’ (Hunecke et al., 2020). It is based on a smaller data set (n = 120) and is limited to the local context of the German city of Dortmund. The expanded spatial context and larger sample size of the available data now allow for correspondingly spatially expanded and higher quality (multivariate) analysis procedures.

Operationalisation and descriptions of young social milieus

In the first step, the milieu-specific differences in the everyday mobilities of the young adults were identified by segmenting the three groups of social milieus based on socio-economic and specific intrinsic socio-cultural factors. According to our explanations in Section ‘Precariat, middle-class, cosmopolitans’, we apply an a-priori segmentation approach. The three social milieus were derived from theoretical considerations and corresponding trait profiles were defined before data collection (see Wedel and Kamakura 2000: 17ff.). The constitutive characteristics of these three social milieus are mainly oriented towards the German-language milieu and lifestyle segmentations of SINUS (2015) and Otte (2013). According to Fig. 3.1, income situations and (formal) education enter the segmentation process as socio-economic characteristics and certain (traditional vs. progressive) value dimensions as psychographic characteristics. Our questionnaire contained specific questions that enabled a direct person-related classification into their respective social milieu group based on the previous observations on the three milieus. Certain operationalisations were also published in Hunecke et al. (2020). Furthermore, the segmentation with the underlying variables is presented in the appendix (see Table A1). Regarding this, other researchers can use it within their research context (i.e., in Germany or perhaps even other countries of the Global North) for guidance to differentiate and analyse their sample according to the three social milieus.

Based on Fig. 3.1 and taking into account further associations in Table 3.1, the three young social milieus can be described as follows:

- i. Young **cosmopolitans** (23.6%) are characterised by a high level of (formal) education, i.e., a university degree or the goal of obtaining it. This social milieu underlies progressive values, whose orientation function lies in self-realisation and the desire for ongoing new experiences. Income is not always stable in this social milieu. Young cosmopolitans are more likely to be located in the core cities of prosperous metropolises. Women and people with an immigrant background from countries in the global North are overrepresented in this social milieu compared to the total sample.
- ii. The young **middle-class** (58.8%) lives in a secured income situation, which is not necessarily based on university degrees. The value orientations underlying the social milieu have more material or traditional grounding. It represents a worldview based on the need for financial security and life-fulfilling structures in family arrangements of a ‘normal family’ (husband/wife structures, children) and a familiar environment. The young middle class is more often located in a suburban or even exurban context and is more often male and of German origin than the total sample.
- iii. The young (marginalised) **precariat** (17.6%) is characterised by socio-economic restrictions. People in the marginalised precarious milieu often receive transfer payments or are dependent on a limited income in precarious employment. Given the formally low level of education within neoliberal economic structures, the prospects for economic improvement are considered limited. The young precariat is highly associated with peripheral locations. Moreover, people with a migration background from countries of the Global South are more often found in the young precariat than on average.

Operationalisation of mode use

For recording multimodal behaviours of the social milieus, this study focused on the main transport modes used – i.e. private cars, public transportation and active transportation – based on a one-day travel diary. This, however, subjects our subsequent analyses to two limitations: First, not including potentially other transport modes used by the respondents. Second, in having a limited observation period. So far as the first limitation is concerned, it can be stated that in the studies on multimodal behaviour, the consideration of many smaller transport modes, such as taxis, skateboards, etc., is rather an exception (see, e.g. Diana and Mokhtarian, 2009a). Instead, the main transport modes are primarily included in the analyses (e.g. Diana, 2012; Klinger, 2017; Kuhnimhof et al., 2006; Nobis, 2007). Hence, possible comparability with these other studies could be established in this respect. For the second limitation, longer observation periods are usually chosen for the analysis of multimodal travel behaviours. In most cases, one week is taken as a ‘standard’ period, since in Western societies, activity patterns and corresponding transport use are culturally differentiated within one week and tend to have a cyclical pattern (Buehler and Hamre, 2015; Groth, 2019a; Nobis, 2007; Scheiner et al., 2016). However, some studies did successfully make behavioural differences visible concerning multimodality based on one day’s observation (e.g. Blumenberg and Pierce, 2014; Buehler and Hamre, 2015).

Based on the main transport modes used by the respondents, we differentiate between different transport mode combinations in line with the transition narrative outlined in the introduction: i. **green monomodal behaviour**, i.e., the exclusive use of only one alternative mode to the motorised car, ii. **green multimodal behaviour**, i.e., the (flexible) use of more than one alternative mode to the private car, iii. **car-based travel behaviour**. These are established categories that are also applied in other studies in this or a similar form (Hunecke et al., 2020; McLaren, 2016; Mehdizadeh et al., 2019). While car-based behaviours represent the direct outcome of hegemonic car regimes (Geels, 2005; Geels, 2012), we derive green multimodal behaviours from the

Table 3.2
Results from the principal component analysis.

	PT_Autonomy (Factor 1)	Symbolic Emotional Car Orientations (Factor 2)	Hedonistic Bike Orientation & Cycling Weather Resistance (Factor 3)	Ecological Norm (Factor 4)	Perceived Mobility Necessities (Factor 5)
PT_Autonomy I "I can do what I want to do with public transport."	0.88				
PT_Autonomy II "If I want, it is easy for me to use public transport instead of cars for my daily trips."	0.88				
PT_Autonomy III [-] ¹ "It is difficult for me to make daily trips by public transport instead of cars."	0.81				
CAR_Autonomy I (-) "I can manage my everyday life very well without a car."	0.79				
CAR_Enjoyment I "Driving a car means fun and passion to me."		0.89			
CAR_Enjoyment II "My driving skills are fun to apply when driving a car."		0.85			
CAR_Autonomy II "Driving a car means freedom to me."		0.79			
CAR_Privacy I "When I'm in the car, I feel safe and protected."		0.79			
BIKE_Enjoyment I "I like to ride a bike."			0.86		
CWR I "I cycle even in bad weather."			0.83		
BIKE_Enjoyment II "I cycle because I enjoy being in motion."			0.81		
CWR II (-) ¹ "I don't like cycling in cold weather."			0.75		
Ecological Norm I "I feel committed to contributing to climate protection through my choice of transport modes."				0.91	
Ecological Norm II "I am personally bound by my principles to use environmentally friendly transport modes for my everyday trips."				0.90	
PMN I "I have to be constantly mobile in order to fulfil my daily responsibilities."					0.89
PMN II "My everyday organisation requires a high degree of mobility."					0.88

Key: PT = Public Transportation; CWR = Cycling Weather Resistance; PMN = Perceived Mobility Necessities. // Only factor loadings above .50 are reported.

¹ Invert Scale.

German concept of the Umweltverbund, which is one of the most serious environmentally sustainable alternatives to private automobility to date (Monheim, 1994). The Umweltverbund refers to the grouping of low-emission transport modes into a network without private cars. Beyond this dichotomy, however, monomodal behaviours with green transport modes are often negotiated as the output of economically restrictive transport poverty (Lucas, 2012; Mattioli et al., 2017). Therefore, neither participation in the hegemonic car regime nor the sustainable alternative of multimodality seems affordable here.

Operationalisation of material mode options

To record the distribution of material mode options as a precondition for realizing multimodal behaviours, we surveyed the material accessible to those mobility resources that are required to use the above-mentioned main transport modes (i.e., car, public transport, and bicycle) (Groth and Kuhnimhof, 2021; Ryan, 2020). For this purpose, constructs were integrated into the standardised questionnaire established in representative German transportation studies, among others (e.g. infas, 2018). We set definitions of mode options for the three main

modes of transport according to Groth (2019a) as follows: i. A car option exists for driving license ownership (response categories in the questionnaire: yes/no) and continuous car availability (response categories: never/occasionally/anytime). ii. A public transport option exists for walking accessibility to various public transport stations (response categories: yes/no) and continuous season ticket ownership (response categories: never/occasionally/anytime). iii. A bicycle option exists with continuous availability of a rideable bicycle (response categories: never/occasionally/anytime). Similar to behavioural categories, this understanding of mode option is not free of limitations: For example, sporadic opportunities (carpooling, buying tickets, etc.) or tactically realised practices that deviate from the norm (e.g. fare evasion; see Groth, 2021) are not considered mode options, which means that the material mode options here are based on a limited understanding of steadiness, conformity to the norm and preservation of rule sets.

In analogy to the terminology established in multimodality research, we differentiate the distribution of options into systematics: **non-optionality** and **monooptionality** and various forms of **multi-optionality** (i.e., bi-and trioptionality) (see, e.g. Deffner et al., 2014; Groth, 2019a; Groth, 2019b). In this regard, non- or monooptionality

Table 3.3
Description of the psychological variables.

Construct	Variable	n	M	α
PT_Autonomy	PT_Autonomy (3) CAR_Autonomy (1)	852	3.37	0.86
Symbolic Emotional Car-Orientation	CAR_Enjoyment (2) CAR_Autonomy (1) CAR_Privacy (1)	610	3.28	0.86
Hedonistic Bike Orientation & Cycling Weather Resistance	BIKE_Enjoyment (2) CWR (2)	852	2.68	0.83
Ecological Norm	Ecological Norm (2)	852	2.71	0.88
Perceived Mobility Necessities	PMN (2)	852	3.19	0.77

describes reduced access to mobility resources, according to which the potential recourse to all main transport modes is generally limited or at best sufficient to resort to only one of the main modes (ibid.). In particular, work on transport poverty provides evidence that, in the wake of the implementation of neoliberal policies and an associated precarity, broad segments of the population are economically denied access to various transport modes (Lucas, 2012; Lucas et al., 2016). In contrast, the two forms of multioptionality describe the confirmed availability of mobility resources that allow for the potential use of two or all three transport modes.

General descriptions of psychological evaluations of transport modes

In addition to the query of mobility resources for the later analysis of material mode options, 16 transport-related items were placed in the

Table 4.1
Modal split, weighted shares of transport modes in total trips.

	1 Cosmopolitans (n = 201) ^{*1}	2 Middle-Class (n = 501) ^{*1}	3 Precariat (n = 150) ^{*1}	Sample (n = 852) ^{*1}
Active Transportation	0.50 ²	0.45 ^{1,3}	0.52 ²	0.48
Public Transportation	0.30 ³	0.32 ³	0.39 ^{1,2}	0.33
Car Use	0.20 ³	0.23 ³	0.09 ^{1,2}	0.20

Mean of Items highlighted in superscript are significantly different from each other (analysis of variance, Bonferroni's Post hoc Test, p < 0.05. Thus, for example, the superscripts 1 and 3 in line with the active transportation in the middle-class (2) refer to a correspondingly significant distinction from the young social milieus of cosmopolitans (1) and precariat (3).

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

Table 4.2
Green monomodal, green multimodal and automobile-based mode use of the three young social milieus (Contingency analysis with chi-square tests).

	Cosmopolitans (n = 201) ^{*1} (in %)	Middle-Class (n = 501) ^{*1} (in %)	Precariat (n = 150) ^{*1} (in %)	Sample (n = 852) ^{*1} (in %)
Green Monomodal Behaviours	34.8	28.9	42.9	32.8
Green Multimodal Behaviours	35.5	33.2	39.0	34.8
Automobile Behaviours	29.7	37.9	18.1	32.3

$\chi^2 = 16.027; p = 0.003.$

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

Table 4.3
Single-mode options of the young social milieus (Contingency analyses with chi-square tests).

	Cosmopolitans (n = 201) ^{*1} (in %)	Middle-Class (n = 501) ^{*1} (in %)	Precariat (n = 150) ^{*1} (in %)	Sample (n = 852) ^{*1} (in %)
Bike option ($\chi^2 = 3.180; p = 0.074$)	87.1	83.0	88.0	84.9
PT option ($\chi^2 = 9.208; p = 0.010$)	57.7	47.1	42.3	48.8
Car option ($\chi^2 = 50.437; p = 0.000$)	26.8	41.2	10.6	32.4

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

questionnaire to analyse the psychological evaluations of transport modes. These can be assigned to the following three constructs: i. symbolic-emotional dimensions of autonomy, privacy and enjoyment; ii. ecological norms; and iii. control beliefs according to perceived mobility necessities (PMN) and cycling weather resistance (CWR). All items were assessed on a five-level Likert scale. About the mental evaluation of (private) car use, five items were included in the symbolic-emotional dimensions of autonomy, enjoyment and privacy. In addition, three items regarding the evaluation of public transport regarding the symbolic-emotional feelings of autonomy (three items) were included in the questionnaire. To evaluate cycling, we added two items regarding the enjoyment dimension. In addition, the personal ecological norm was measured using two items, and finally, the young respondents were assessed through the two constructs of control convictions. The items originate from German-speaking mobility psychology studies and have been successfully used over more than ten years for reliability and validity (Hunecke et al., 2021/2022).

Using a principal component analysis, we applied varimax rotation to reduce psychological variables to the underlying constructs. The result is a five-factor model, whereby only those factors with eigenvalues greater than 1 were retained (Kaiser criterion): We operated with a five-factor solution in the following analyses: i. PT_Autonomy, ii. Symbolic-Emotional Car Orientation, iii. Hedonistic Bike Orientation & Bike Weather Resistance, iv. Ecological Norm, and v. Perceived Mobility Necessities. The model explains 75.8% of the variance. Table 3.2 shows the variables with their respective charges on the corresponding factor, and Table 3.3 describes the constructs in terms of significant characteristics.

Table 4.4
Mode options of the young social milieus (Contingency analysis with chi-square tests).

	Cosmopolitans (n = 201) ^{*1} (in %)	Middle-Class (n = 501) ^{*1} (in %)	Precariat (n = 150) ^{*1} (in %)	Sample (n = 852) ^{*1} (in %)
Non-optionality/Monooptionality	36.1	39.1	55.6	41.3
Bioptionality	56.2	48.5	43.0	49.4
Trioptionality	7.7	12.4	1.4	9.4

$\chi^2 = 26.824$; $p = 0.000$.

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

Table 4.5
Mean deviations in the mode-related psychographic characteristics of young social milieus.

	1 Cosmopolitans (n = 201) ^{*1}	2 Middle-Class (n = 501) ^{*1}	3 Precariat (n = 150) ^{*1}	Sample (n = 852) ^{*1}	Eta ²
Symbolic-emotional car orientation	3.26	3.36 ³	3.04 ²	3.28	0,011
PT Autonomy	3.62 ^{2,3}	3.28 ¹	3.32 ¹	3.37	0,016
Hedonistic Bike Orientation & Cycling Weather Resistance	2.88 ^{2,3}	2.62 ¹	2.61 ¹	2.68	0,012
Ecological Norm	2.88 ^{2,3}	2.69 ¹	2.57 ¹	2.71	0,009
Perceived Mobility Necessities	3.22	3.22	3.05	3.19	0,004

*Mean of Items highlighted in superscript are significantly different from each other (analysis of variance, Bonferroni's Post hoc Test, $p < 0.05$. Thus, for example, the superscripts 2 and 3 in line with the ecological norm in the young cosmopolitan milieu (1) refer to a correspondingly significant distinction from the young social milieus middle-class (2) and precariat (3).

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

Empirical findings

Mode used by the young social milieus

The three young social milieus differ in the specific everyday use of transport modes. In this respect, Table 4.1 compares the milieu-specific modal splits by the number of trips taken. It reveals a hierarchical arrangement of the proportionately used transport modes according to the following pattern: Active modes of transport are used most frequently, followed by public transport and then the car. However, by comparing the values, a difference between the three social milieus in terms of transport use intensity can be observed: i. young cosmopolitans and young precariat use active modes significantly more often than the young middle-class; ii. the young precariat uses public transportation significantly more often than young cosmopolitans and the young middle-class as a proportion of all trips; iii. the young cosmopolitans and the young middle-class use the car significantly more often than the precariat on the total number of trips.

In addition, the contingency analysis in Table 4.2 identifies a further statistically significant milieu-specific differentiation of the social milieus about green monomodal and green multimodal as well as automobile behaviours. This table features a few characteristics of the three social milieus: i. the cosmopolitan milieu is slightly overrepresented in the monomodal and multimodal use of green modes; ii. the young middle-class is definitely over-represented in car-based behaviours; iii. the young precariat is strongly over-represented in monomodal and multimodal use of green modes of transport and strongly under-represented in car-based behaviours.

Availability of mobility resources of young social milieus (material mode options)

The three young social milieus also differ significantly for the distribution of available mobility resources (Table 4.3). This applies especially to the options for using public transportation and the automobile. Here, it can be seen that the young cosmopolitans, in particular, are significantly more likely to potentially use public transport than the other two social milieus. By contrast, the young middle-class is equipped significantly more often with the car option.

Furthermore, in an aggregated consideration of the material mode options, the contingency analysis in Table 4.4 shows that the three social

milieus have statistically significant differences in the variety of mode options. In this respect, the young precariat can be associated with non-optionality. The other two milieus are significantly associated with monooptionality, while the young cosmopolitans and the young middle-class are found significantly more associated with the two multi-optionality categories.

Psychological evaluations of transport modes among young social milieus

In order to find differences in the psychological evaluations of the different transport modes, we compared the mean values of the item scores based on the five extracted factors – public transport autonomy, symbolic-emotional car orientation, hedonistic bike orientation and cycling weather resistance, ecological norm and mobility constraints – using variance analyses (ANOVA) and Bonferroni's post-hoc tests. Table 4.5 illustrates the significant differences between the social milieus in terms of the high scores. Even though the differences in the corresponding effect sizes according to the Eta squared values are generally small, central differences between the young social milieus in the mental preconditions for different transport modes can be highlighted in three respects. First, the cosmopolitans differ significantly from the other two milieus regarding the feelings of autonomy in public transport use, a hedonistic bicycle orientation with resistance to cycling weather and a more pronounced ecological norm. Then, of all the social milieus, the young middle-class shows the strongest symbolic-emotional car orientation and differs significantly from the young precariat. Finally, the precariat has the lowest scores of all psychological evaluations with the above-mentioned significant differences.

Interaction of material mode options and psychological mode of evaluations concerning mode use

Finally, multivariate analyses aim to reveal which of the material mode options and psychological evaluation processes of transport modes described above have a significant influence on the mode use. Using logistic regression models, we compared automobile behaviours with the (monomodal and multimodal) green transport modes. Table 4.6 shows the variables used in the models, the estimated standardised coefficients, significance level and the confidence interval. Separate regressions were performed for each of the three social milieus, with 0 being used for automobile behaviour and 1 for green alternatives to

Table 4.6

Logit models for (mono- and multimodal) car use vs. use of green transport modes (from the 'Umweltverbund') as a dependent variable.

	Cosmopolitans (n = 201) ^{*1}			Middle-Class (n = 501) ^{*1}			Precariat (n = 150) ^{*1}			Sample (n = 852) ^{*1}		
	OR	P	CI	OR	P	CI	OR	P	CI	OR	P	CI
<i>Material mode options</i>												
Car option	0.07	0.000	0.025, 0.218	0.12	0.00	0.070, 0.221	0.08	0.01	0.013, 0.493	0.10	0.00	0.102, 0.065
PT option	0.48	0.242	0.139, 1.647	1.50	0.19	0.815, 2.753	3.15	0.24	0.467, 21.229	1.21	0.44	0.739, 1.992
Bike option	0.70	0.652	0.150, 3.283	0.59	0.18	0.278, 1.268	0.17	0.28	0.007, 4.234	0.60	0.12	0.316, 1.143
<i>Psychological evaluations of transport modes</i>												
PT Autonomy	2.15	0.012	1.186, 3.905	1.71	0.001	1.248, 2.330	2.57	0.03	1.109, 5.942	1.73	0.00	1.350, 2.212
Symbolic-emotional car orientation	0.46	0.003	0.279, 0.772	0.92	0.561	0.692, 1.221	0.46	0.07	0.200, 1.054	0.73	0.01	0.587, 0.913
Hedonistic Bike Orientation & Cycling Weather Resistance	1.51	0.157	0.853, 2.690	1.22	0.194	0.906, 1.632	1.42	0.42	0.611, 3.280	1.24	0.08	0.976, 1.576
Ecological Norm	1.07	0.776	0.663, 1.735	1.13	0.404	0.846, 1.516	0.48	0.07	0.217, 1.051	1.06	0.64	0.842, 1.325
Perceived Mobility Necessities	1.16	0.560	0.707, 1.898	0.92	0.594	0.691, 1.236	0.79	0.58	0.342, 1.825	0.99	0.95	0.789, 1.250
Nagelkerkes R ²	0.558			0.458			0.517			0.476		
Correctly predicted (%)	84.5			80.6			87.6			81.9		

^{*1} Due to non-responses, the sample size may be slightly reduced for some variables.

the private car.

The models for the three subsamples reveal enlightening differences when compared with the model covering the entire sample. Looking at the model for the entire sample, the following factors were found to have a significant impact on the likelihood of using environmentally friendly modes of transportation: A negative symbolic-emotional car orientation and a lack of a material car option, as well as a positive evaluation of public transport with respect to the autonomy dimensions. This is fully consistent with the observations in the young cosmopolitan milieu. By contrast, among the middle-class and the precariat, only the absence of a car option and the positive assessment of public transport with the autonomy dimensions significantly influence the use of green modes. Among the precariat, just two of the mode-related psychological factors positively affect the likelihood of using green modes, and among the middle-class, there are three. It is notable – this should be pre-empted from the discussion in Section “Summary and discussion” – that in addition to the ecological norm, the control belief variables (i.e., perceived behavioural control and hedonistic bicycle orientation and bicycle weather resistance) have no significant influence on any of the models. However, a relationship with car use/ownership is often found in other studies (Haustein, 2021; Hunecke et al., 2007; Jain et al., 2021; Thorhaug et al., 2020). Concerning the perceived behavioural control, it is conceivable that everyday mobility is less constrained here in sum. Most participants tend not to be in the family phase yet (as PMNs are typically higher for those with children and a job). For the bicycle variable, there was too little variance in bicycle use within the overall multimodal behaviours.

Summary and discussion

This paper aimed to (re-)integrate the concept of social milieus from different social classes into interdisciplinary transport and mobility research. The social milieu concept is based on a segmentation approach in which societies are classified into socio-economic and socio-cultural differences and inequalities. Transport and mobility research is by no means unfamiliar with segmentation approaches that aim to make social inequalities in societies visible: In particular, certain concepts have been

successfully applied here (lifestyles, mobility styles, modality styles, etc.), which are theoretically embedded most often in the context of individualisation and pluralisation. However, from a time-diagnostic perspective, such approaches may be less suitable for describing societal conditions because they suggest a pluralistic coexistence of attitudes, freedom of choice, and consumer sovereignty without considering the impact of power and domination mechanisms responsible for the uneven distribution of material or incorporated resources. The concept of social milieu addresses this problem by taking socio-economic and socio-cultural factors within the segmentation approach into account, thereby being embedded in the contemporary re-emergence of class concepts (e.g. Reckwitz 2019: 123ff.). Crucial for members of a particular class-related social milieu is that its socio-economic and socio-cultural boundaries have a distinctive effect. Within these boundaries, it is not only the milieu's social position in society that is expressed; also, these boundaries determine the milieu-specific possibilities for action in the everyday struggle for interpretive sovereignty in different fields. The starting point of our contribution was the assumption that milieu constellations are also likely to be effective in transportation and that this can be statistically proven.

Drawing on central literature, we have theoretically derived three relevant and time-stable contrasting milieus from different social classes in this contribution: cosmopolitans from an emerging new middle-class, the traditional middle-class from the eponymous old middle-class and precariat from the underclass. These three social milieus were analysed using central mobility parameters (mode use, material mode options and psychological evaluations of certain transport modes) within the young Millennial generation. We believe that this case is ideally suited for the application of the milieu concept, as Millennials have been idealized as a quasi-homogeneous age cohort until today and stylized as a main driver of a transition from automobility to multimodality in many countries of the global North. In order to make a critical contribution in this regard by applying the milieu approach, we drew on a dataset from Germany, in which 852 people aged 17 to 24 were surveyed employing a (semi-) standardised questionnaire in 2013. Thus, in the first step of this Section, our findings concerning the three social milieus can be summarised as follows:

- **Cosmopolitans** are characterised by a high level of formal education and post-material, progressive values. As already being discussed in the social sciences, the new middle-class lives in post-industrial knowledge-based societies. The young cosmopolitans in our data set (23.6%) correspond to possible expectations regarding their arrangement of everyday mobility. They are mostly found in the core cities of metropolitan regions, where they can find a fertile environment for potentially practising multimodal mode use. Accordingly, this social milieu is characterised by strong multimodal behaviour based on the combination of green transport modes (of the Umweltverbund) as an alternative to the private car. At the same time, young cosmopolitans are exceedingly well equipped with a variety of material mode options. The use of green transport modes can be explained primarily by a negative automobile evaluation in the sense of symbolic-emotional evaluation processes. In addition, compared to the other milieus, positive psychological evaluation processes of public transport and cycling can be highlighted as a feature leading to comparatively 'more' green multimodal behaviours.
- The **middle-class** is characterised by traditional (material) value orientations, middle professional positions and middle educational qualifications. On this basis, it once held a culturally dominant position, which, from the perspective of contemporary social sciences, the cosmopolitans seem to be deprived of. The young middle-class in the data set (58.8 %) is characterised by an above-average number of respondents having German origins and located outside the large metropolitan areas. In terms of key mobility parameters, cars still play a significant role in this young milieu. The young middle-class can access the car most often when considering the distribution of the car option. Moreover, the young middle-class values the car most from a certain symbolic-emotional orientation. However, according to the regression models, it does not (yet) differ significantly from the other social milieus
- The young **precariat** (17.6%) comprises a socially marginalised group of people – primarily seen as a result of deregulation and flexibilisation processes in post-industrialism – characterised by low levels of formal education, precarious employment and low income. The young precariat is disproportionately located in the spatial peripheries; the part of the population marginalised concerning central literature from the gentrified core cities of metropolitan regions (e.g. Helbrecht, 2018). Also, persons with a migration background from countries of the Global South are more often than average belong to the young precariat. This socio-economic precarity also impacts key mobility parameters: The precariat tends to have fewer material mode options available and is more often affected by non-optionality and/or monooptionality. This applies especially to the car and public transport, i.e., those transport modes essential for participating in societies geared to long-distance travel. Compared to the young cosmopolitans, the precariat differs in terms of a lower autonomy attribution of public transport, lower (hedonistic) bicycle orientations and bicycle weather resistances and ecological norms. In sum, this makes the significantly lower use of the automobile or the more frequent recourse to low-cost transport modes understandable.

Before discussing the observations in the light of the potential transition from automobility to multimodality, we ought to highlight methodological limitations in at least three respects: First, it could be criticised that the field has undergone further dynamic developments in the years after data collection (politicisation from car abandonment in the context of ecological protest movements, regressive counter-movements, Paris Climate Agreement, etc.). This should be taken into

account but does not mean that we should disqualify the underlying data as antiquated. After all, the observations made still seem to be compatible with current narratives on existing milieu and class descriptions. Second, the non-representativeness of the data must be critically emphasised. It is conceivable that shares of persons in the three milieus are biased and that young cosmopolitans – particularly in their role as a possible new middle class – could appear significantly larger in numbers than those in the current data set. However, the non-representativeness is not relevant for the bivariate and multivariate analyses since plausible interrelations between psychological orientations and available resources with milieu-specific travel behaviour were explored. Third, it is important to note the limitations due to the a priori segmentation approach we adopted. The theoretically derived number of segments and underlying characteristics were set before data collection. On the one hand, this has the quality that the segmentation process can be easily replicated in other studies (see the scales and operationalisations placed in the appendix). On the other hand, the procedure can be criticized by the fact that the results depict purely scientific-theoretical constructs, which might also represent a fragmented or even distorted representation of society. If new studies demand completeness, a more comprehensive set of theoretically derived scales – similar to the SINUS milieus approach (SINUS, 2015; SINUS, 2018) – should be integrated into the questionnaire. Based on them, social milieu can then be explored through post-hoc segmentation (see, e.g. Wedel and Kamakura, 2000).

Against the hegemonic transition narrative of the regime shift from automobility to multimodality driven by the young millennial generation, we consider the divergent, statistically verified findings from the data as an important corrective. With regard to the observations made within the three social milieus, the corrective can be expressed in correspondingly three respects: i. the young cosmopolitans provide a reason for assuming milieu-specific reflexivity, ii. the young middle-class provides a reason for assuming the existence of a (conservative) contradiction and iii. the young precariat provides a reason for calling for the dissolution of the dualistic transition debate.

For (i), a de-emotionalisation of the private automobile can be observed in Millennials, which is tantamount to a divorce from the once stable 'love for the automobile' (Sachs, 1992). Although this observation seems epochal for the possible transformation process, the milieu-specific differences should be explicitly highlighted. As the regression models revealed, symbolic emotional car orientations show no significant effect for the middle-class or the precariat but a significant negative effect for cosmopolitans. While it could be argued that symbolic-emotional car orientations are less relevant for Millennials as a whole (e.g. in contrast to the adult population as a whole in Germany, as shown in Hunecke et al., 2007), a far more radical negation is found among young cosmopolitans; possibly that young milieu that is currently politicising its car aversion and expressing it in the form of ecologically motivated protest movements, for example, in the context of 'Fridays for Future', 'Extinction Rebellion', etc. (e.g. Butzlaff and Deflorian, 2021). This observation is important because what seems to lie behind the impulse to not use the car and to turn to other 'more sustainable' green transport modes is not simply an environmental asceticism – as environmental movements for greater environmental awareness suggest – but a much more fundamental emotional separation from this human-machine relationship. Thus, the transition from monomodal car-based behaviours to multimodal behaviours within this population group can also be understood as a transition from a 'monogamous' relationship with the car to a 'polygamous' mode-use pattern. The crucial point is that this is an explicitly milieu-specific cosmopolitan development.

An indication of the causes and reasons for these exclusive milieu-

specific development processes could be found in a rereading of the structuration approach by Giddens (1984). Accordingly, reflexive modernisation processes with a changed recursively organised set of mobility rules and resources have taken place exclusively in this social milieu and have, therefore, been able to stimulate affective mode-specific shifts in it. Two examples: First, students at German universities, where young cosmopolitans often are located, have been profiting from the obligatory and inexpensive public transport season tickets in the form of semester tickets. This is an almost exclusive offer reserved for this population group. A connection between the introduction of the semester ticket and the corresponding mental valorisation of public transportation has already been proven in mobility psychology (e.g. Bamberg et al., 2003). Secondly, in the context of the discussion about the ‘bicycle boom’ (Lanzendorf and Busch-Geertsema, 2014) or ‘renaissance of the bicycle’ (Carstensen and Ebert, 2012), it is observed that cycling could become a hedonistic style factor especially in the urban residential areas of cosmopolitans. Thus, those locations in which progressive cycling policies and bicycle-friendly infrastructure measures - among others to be understood as the result of the political protest of cosmopolitan movements (e.g. Critical Mass) (Furness, 2007) - have been realised on a large scale since the turn of the millennium.

With regard to (ii), it can be stated that such (reflexive) modernisation processes are not only not ubiquitous within the young generation but also contradictory to the developments that tend to reproduce private automobility. Especially among the young middle-class with traditional values – i.e., their need for family unity and financial stability – seem to already integrate the private automobile into their life plans. What is meant by this? Even though multimodal tendencies are found in the young middle-class, the above-average use of the private car and still low overall access to the car option provide a first important indication of this assumption. In this regard, studies focusing on endogeneity in everyday mobilities have revealed that mode-related attitudes and certain travel behaviours influence each other over time (e.g. Kroesen et al., 2017). In the case of the significant effect of PT autonomy, it is conceivable that the large number of individuals, who previously did not have access to a car, have adjusted to a more negative assessment towards public transport. They have reduced cognitive dissonance or made some positive experiences with public transport. This could change in the future with improved access to the car, which traditionally has also been negotiated by various authors under the term funnel thesis: A possible convergence from initially multimodal behaviours to more and more automobile behaviours in further life courses (Franke and Maertins, 2005; Nobis, 2007). According to this, persons in the post-adolescent phases of their lives (i.e., between 18 and 29 years of age) are still receptive to the combination of different mode options due to a life phase of financial insecurity, higher time autonomy and family independence. With the imminent founding of a family, more professional and financial stability – i.e., characteristics that belong to the value profile of the young middle-class – the phases of life follow in which behavioural variants are abandoned and a transition to automobile-based monomodality takes place within the hegemonic car-oriented structures (see also Busch-Geertsema and Lanzendorf, 2017; Etezady et al., 2020; Lavieri et al., 2017). For the present, there is hardly any reason to assume that anything should change within the young middle-class, especially since – except for some new digital possibilities – few material alternatives to the dominant car have been created in the situational environment of the middle-class. However, if a shift away from automobility is socially desired from a normatively driven perspective, the broader developments among young adults, such as the lack of car options, could be seen – following some thoughts by Delbosch (Delbosch, 2017), for example – as windows of opportunity to promote niche innovations and thus, stabilise and reform the hegemonic regime of private automobility. However, this transition would need to be fundamentally supported by politics and planning with concrete visions of socio-ecological alternatives.

Regarding (iii), it can be expressed that socio-economic restrictions

prevent any potential mobile participation in societies. In other words, social exclusions from both hegemonic automobility and alternative multimodality. Here, the lack of optional material conditions for the potential realisation of car-based and/or multimodal behaviours in the young precariat must be highlighted. Due to this lack of options, this marginalised milieu is beyond any dualistic assumption of potential linear regime transition from the ‘old’ automobility towards ‘new’ multimodality. The possible causes and reasons for the social milieu’s exclusion from participation in society based on mobility might be found in the neoliberal policies in the countries of the Global North. These policies should not be seen solely in the deregulation and flexibilisation of labour markets and the dismantling of the welfare state, but also in the secondary processes of exploitation within the transport sector (privatisation of transport companies, associated price increases for mode use, etc.). Reference can be made here to the extensive research context of transport poverty, which problematises the social effects of neoliberal (transport) policies in terms of opposing developments of rising mobility costs and declining real wages (cf. Lucas, 2012). If transport poverty refers to hegemonic automobility, it appears in the form of ‘forced car ownership’ (Curl et al., 2018). The socio-economically disadvantaged precariat within the automobile society can hardly afford a car option. If transport poverty refers to the emergence of multimodality, then the precarious milieu is affected by the ‘multimodal divide’ (Groth, 2019a). Therefore, a socio-economic constraint on the realisation of multimodal behaviours occurs due to a lack of multiple mode options (non-optionality or monooptionality). Here, key terms such as ‘mode choice’ obscure the lack of choice that the precariat experiences every day (Hunecke et al., 2020).

In conclusion, we state that if class- and milieu-specific mobility trends (in this case those of the young cosmopolitans of the ‘new middle-class’) are stylised into ubiquitous mobility trends, all deviations are marginalised. The underlying message for transport policy makers has serious consequences: They are now likely to assume an automated transition process that no longer requires an act of fundamental restructuring of mobility rules and means (“Millennials de-emotionalised by the car will lead us to a sustainable multimodal society in the medium term”). In reality, however, the hegemonic structures of private automobility continue to be reproduced and defended by traditional, conservative currents. And, outside the dualistic categorisation of automobility/multimodality are the social milieus of the underclass, which find themselves economically excluded from the opportunities to participate in the hegemonic transport regime or certain serious alternatives. Therefore, if a regime shift towards multimodality should be politically forced, serious alternatives to private automobility must be made structurally accessible across all social classes; so that the experience of a de-emotionalisation of the once much-loved car does not remain the exclusive privilege of progressive currents within the new middle-class.

CRediT authorship contribution statement

Sören Groth: Conceptualization, Methodology, Validation, Formal analysis, Resources, Writing – original draft, Writing – review & editing, Visualization, Project administration. **Marcel Hunecke:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Supervision. **Dirk Wittowsky:** Validation, Investigation, Data curation, Supervision, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix

Table A1

A priori segmentation of the three young social milieus

Category	Question	Answering categories	Segmentation of the young social milieus
A. Formal Education	What is your highest level of formal education?	1. No degree 2. Hauptschulabschluss ("lower secondary school certificate") 3. Realschulabschluss ("intermediate secondary school certificate") 4. Abitur/Fachabitur ("high school diploma") 5. (Fach-) Hochschulabschluss ("university degree") 6. others:	For Cosmopolitans: "A = 4, 5 or 6" AND "Bd = 1, 2, 3, 7, 8, 9, 10 or 11"
Ba. Income situation I (Net Income)	What is the total net income of all members of your household per month (i.e. the disposable income after deduction of taxes and social security contributions)? ^{*1}	1. <500 € 2. 501–1000 € 3. 1001–1500 € 4. 1501–2000 € 5. 2001–2500 € 6. 2501–3000 € 7. 3001–3500 € 8. 3501–4000 € 9. >4000 € 10. I don't know	AND "D=1b" and/or "D=2b=" and/or "D=3b" (2 of 3)
Bb. Income situation II (Household Size)	How many people live in your household all the time, including yourself?	1. ____ Persons in total, including 2. ____ child/children under the age 10	For Middle-Class: "A = 2, 3, 4, 5 or 6" AND "Ba~Bb~Bc = middle or high income" ^{*2}
Bc. Income situation III (living situation)	How do you live at the moment?	1. Living with parents in own room 2. Living with parents without own room 3. Living in a dormitory 4. Living in own apartment 5. Living in a room for sublease 6. Living in a shared apartment 7. Others: _____	AND "D=1a" and/or "D=2a=" and/or "D=3a" (2 of 3)
Bd. Income situation IV (employment situation)	How do you finance your livelihood?	1. Wage/salary 2. Income from self-employment 3. (Early) Pension 4. ALG 1 (unemployment benefits) 5. ALG 2 (long-term unemployment benefits) 6. Social welfare 7. Child benefits 8. Housing benefits 9. Student grants 10. Other transfer income: ____ 11. Support from parents 1a. "Secured income" or 1b. "Self-fulfilment". 2a. "Family and children" or 2b. "A fulfilling activity beyond family and children" 3a. "Living in my familiar environment" or 3b. "Exploring the world"	For Precariat: "A = 1, 2 or 3" AND "Ba~Bb~Bc = Income poverty" ^{*2} AND "Bd = 4, 5, 6, 7, 8 or 10"

^{*1} "Additional information to answer the question: "In case of shared flats and flatmates without relationship or partnership only your own income is valid."

^{*2} Income descriptions are based on the concept of equivalent net income of the OECD-scale used in the social reporting of official statistics (see, e.g., [Statistisches Bundesamt, 2021](#)). Here, e.g., income poverty rate is based on the share of persons whose equivalent net income (= per capita income per household member) is less than 60% of the median of the average net income.

References

- Abel, T., 1991. Measuring health lifestyles in a comparative analysis: theoretical issues and empirical findings. *Soc. Sci. Med.* (1982) 32 (8), 899–908. [https://doi.org/10.1016/0277-9536\(91\)90245-8](https://doi.org/10.1016/0277-9536(91)90245-8).
- Ajzen, I., 1991. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* 50, 179–211.
- Anable, J., 2005. Complacent Car Addicts or Aspiring Environmentalists?: Identifying travel behaviour segments using attitude theory. *Transp. Policy* 12, 65–78. <https://doi.org/10.1016/j.tranpol.2004.11.004>.
- Atkinson, R., 2006. Padding the bunker: strategies of middle-class disaffiliation and colonisation in the city. *Urban Stud.* 43 (4), 819–832. <https://doi.org/10.1080/00420980600597806>.
- Bamberg, S., Ajzen, I., Schmidt, P., 2003. Choice of travel mode in the theory of planned behavior: the roles of past behavior, habit, and reasoned action. *Basic Appl. Soc. Psychol.* 25, 175–187. https://doi.org/10.1207/S15324834BASP2503_01.
- Banister, D., 2008. The sustainable mobility paradigm. *Transp. Policy* 15, 73–80. <https://doi.org/10.1016/j.tranpol.2007.10.005>.
- Barr, S., Gilg, A., 2006. Sustainable lifestyles: framing environmental action in and around the home. *Geoforum* 37 (6), 906–920. <https://doi.org/10.1016/j.geoforum.2006.05.002>.
- Beck, U., 1984. *Jenseits von Stand und Klasse. Auf dem Weg in die individualisierte Arbeitnehmersgesellschaft.* Merkur 38 (427), 485–497.
- Beck, U., 1992. *Risk Society: Towards A New Modernity.* SAGE, London.
- Beck, U., 2014 [2004]. *Cosmopolitan Vision.* Wiley, Hoboken.
- Beck, U., Beck-Gernsheim, E., 2002. *Individualization: Institutionalized Individualism and Its Social and Political Consequences.* SAGE, London.
- Beck, U., Giddens, A., Lash, S., 2007 [1994]. *Reflexive modernization: Politics, tradition and aesthetics in the modern social order* (Reprint). Polity Press, Cambridge.
- Bessant, J., 2017. Young precariat and a new work order?: A case for historical sociology. *J. Youth Stud.* 21 (6), 780–798. <https://doi.org/10.1080/13676261.2017.1420762>.
- Blumenberg, E., Pierce, G., 2014. Multimodal travel and the poor: evidence from the 2009 National Household Travel Survey. *Transp. Lett.* 6, 36–45. <https://doi.org/10.1179/1942787513Y.0000000009>.
- Bourdieu, P., 2010 [1984]. *Distinction: A Social Critique of the Judgement of Taste.* Routledge, London, New York.
- Brand, U., Wissen, M., 2018. *The Limits to Capitalist Nature: Theorizing and Overcoming the Imperial Mode of Living.* Rowman & Littlefield International, London.
- Bratzel, S., 2014. Die junge Generation und das Automobil – Neue Kundenanforderungen an das Auto der Zukunft? In: Ebel, B., Hofer, M.B. (Eds.), *Automotive Management.* Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 93–108.
- Breckenridge, C.A. (Ed.), 2002. *Cosmopolitanism.* Duke University Press, Durham.
- Brown, W., 2017. *Undoing the Demos: Neoliberalism's Stealth Revolution.* Zone Books, New York.
- Buehler, R., Hamre, A., 2015. The multimodal majority?: Driving, walking, cycling, and public transportation use among American adults. *Transportation* 42, 1081–1101.
- Burzan, N., Berger, P.A. (Eds.), 2010. *Dynamiken (in) der gesellschaftlichen Mitte.* VS Verlag, Wiesbaden.
- Busch-Geertsema, A., Lanzendorf, M., 2017. From university to work life – Jumping behind the wheel?: explaining mode change of students making the transition to professional life. *Transp. Res. Part A: Policy Pract.* 106, 181–196. <https://doi.org/10.1016/j.tra.2017.09.016>.
- Butzlaff, F., Deflorian, M., 2021. Direct social action beyond party politics. How new subjectivities change the idea of social transformation. *Polit. Res. Exchange* 3, 259–275. <https://doi.org/10.1080/2474736X.2021.1896343>.
- Canzler, W., Knie, A., 2016. Mobility in the age of digital modernity: why the private car is losing its significance, intermodal transport is winning and why digitalisation is the key. *Appl. Mobil.* 1, 56–67. <https://doi.org/10.1080/23800127.2016.1147781>.
- Carstensen, T.A., Ebert, A.-K., 2012. Cycling Cultures in Northern Europe: From 'Golden Age' to 'Renaissance'. In: *Cycling and Sustainability Cycling and Sustainability* (Ed.), Transport and Sustainability. Emerald Group Publishing Limited, Bingley, pp. 23–58.
- Choo, S., Mokhtarian, P.L., 2004. What type of vehicle do people drive?: the role of attitude and lifestyle in influencing vehicle type choice. *Trans. Res. Part A: Policy Pract.* 38 (3), 201–222. <https://doi.org/10.1016/j.tra.2003.10.005>.
- Clark, T.N., Lipset, S.M., 1991. Are social classes dying? *Int. Sociol.* 6, 397–410. <https://doi.org/10.1177/026858091006004002>.
- Crouch, C., 2019. *Will the Gig Economy Prevail? The Future of Capitalism Series.* John Wiley & Sons, Hoboken.
- Curl, A., Clark, J., Kearns, A., 2018. Household car adoption and financial distress in deprived urban communities: a case of forced car ownership? *Transp. Policy* 65, 61–71. <https://doi.org/10.1016/j.tranpol.2017.01.002>.

- Dahrendorf, R., 1979 [1965]. *Society and democracy in Germany*. Norton & Company, New York.
- Dangschat, J., 2018. Soziale Milieus in der Mobilitätsforschung. In: Barth, B., Flaig, B.B., Schäuble, N., Tautscher, M. (Eds.), *Praxis der Sinus-Milieus*. Springer VS, Wiesbaden, pp. 139–153.
- Dangschat, J.S., Segert, A., 2011. Nachhaltige Alltagsmobilität — soziale Ungleichheiten und Milieus. *Osterreichische Zeitschrift für Soziologie* 36 (2), 55–73. <https://doi.org/10.1007/s11614-011-0033-z>.
- Defner, J., Hefter, T., Götz, K., 2014. Multioptionalität auf dem Vormarsch? In: *Veränderte Mobilitätswünsche und technische Innovationen als neue Potenziale für einen multimodalen Öffentlichen Verkehr, Öffentliche Mobilität*. Springer Fachmedien, Wiesbaden, pp. 201–227.
- Delanty, G., 2006. The cosmopolitan imagination: critical cosmopolitanism and social theory. *Br. J. Sociol.* 57 (1), 25–47. <https://doi.org/10.1111/j.1468-4446.2006.00092.x>.
- Delbosch, A., 2017. Delay or forgo?: A closer look at youth driver licensing trends in the United States and Australia. *Transportation* 44, 919–926. <https://doi.org/10.1007/s11116-016-9685-7>.
- Delbosch, A., Currie, G., 2013. Causes of youth licensing decline: a synthesis of evidence. *Transp. Res. Part F: Traffic Psychol. Behav.* 12, 271–290. <https://doi.org/10.1080/01441647.2013.801929>.
- Delbosch, A., Currie, G., 2014. Using discussion forums to explore attitudes toward cars and licensing among young Australians. *Transp. Policy* 31, 27–34. <https://doi.org/10.1016/j.tranpol.2013.11.005>.
- Delbosch, A., McDonald, N., Stokes, G., Lucas, K., Circella, G., Lee, Y., 2019. Millennials in cities: comparing travel behaviour trends across six case study regions. *Cities* 90, 1–14. <https://doi.org/10.1016/j.cities.2019.01.023>.
- Diana, M., 2012. Measuring the satisfaction of multimodal travelers for local transit services in different urban contexts. *Transp. Res. Part A: Policy Pract.* 46 (1), 1–11. <https://doi.org/10.1016/j.tra.2011.09.018>.
- Diana, M., Mokhtarian, P.L., 2009a. Desire to change one's multimodality and its relationship to the use of different transport means. *Transp. Res. Part F: Traffic Psychol. Behav.* 12, 107–119.
- Diana, M., Mokhtarian, P.L., 2009b. Grouping travelers on the basis of their different car and transit levels of use. *Transportation* 36 (4), 455–467. <https://doi.org/10.1007/s11116-009-9207-y>.
- Eribon, D., 2013. In: *Returning to Reims*. MIT Press, Cambridge, Mass., p. 255
- Esping-Andersen, G. (Ed.), 1993. *Changing Classes: Stratification and Mobility in Post-Industrial Societies*. SAGE Publications, London.
- Etezady, A., Shaw, F.A., Mokhtarian, P.L., Circella, G., 2020. What drives the gap?: Applying the Blinder-Oaxaca decomposition method to examine generational differences in transportation-related attitudes. *Transportation* 12 (1), 65. <https://doi.org/10.1007/s11116-020-10080-5>.
- European Commission, 2018. 2018 - Year of Multimodality. <https://ec.europa.eu/transport/themes/logistics-and-multimodal-transport/2018-year-multimodality_en> (accessed 25.05.2020).
- Fine, R., 2008. *Cosmopolitanism*. Routledge, London.
- Florida, R.L., 2003. *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. Pluto Press, North Melbourne.
- Foti, A., 2017. *General Theory of the Precariat: Great Recession, Revolution, Reaction*. Reaction, Amsterdam.
- Franke, S., Maertins, C., 2005. Die unentdeckte Spezies der Multimodalen: Möglichkeiten der Bindung und Gewinnung von ÖPNV-Kunden mit innovativen Mobilitätsdienstleistungen. In: Schwedes, O. (Ed.), *Öffentliche Mobilität: Perspektiven für eine nachhaltige Verkehrsentwicklung*. VS Verlag für Sozialwissenschaften, Wiesbaden, pp. 216–238.
- Furness, Z., 2007. Critical mass, urban space and velomobility. *Mobilities* 2 (2), 299–319. <https://doi.org/10.1080/17450100701381607>.
- Gardner, B., Abraham, C., 2008. Psychological correlates of car use: a meta-analysis. *Transp. Res. Part F: Traffic Psychol. Behav.* 11, 300–311. <https://doi.org/10.1016/j.trf.2008.01.004>.
- Gatersleben, B., 2007. Affective and symbolic aspects of car use. In: Gärling, T., Steg, L. (Eds.), *Threats from Car Traffic to the Quality of Urban Life: Problems, Causes, and Solutions*. Elsevier, Amsterdam, pp. 219–233.
- Geels, F., 2005. The dynamics of transitions in socio-technical systems: a multi-level analysis of the transition pathway from horse-drawn carriages to automobiles (1860–1930). *Technol. Anal. Strat. Manag.* 17 (4), 445–476. <https://doi.org/10.1080/09537320500357319>.
- Geels, F., 2012. A socio-technical analysis of low-carbon transitions: introducing the multi-level perspective into transport studies. *J. Transp. Geogr.* 24, 471–482. <https://doi.org/10.1016/j.jtrangeo.2012.01.021>.
- Geiselberger, H. (Ed.), 2017. *The Great Regression*. Cambridge, Polity Press.
- Giddens, A., 1992. *The Consequences of Modernity*. Polity Press, Cambridge.
- Giddens, A., 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Polity Press, Cambridge.
- Götz, K., Schubert, S., 2004. Mobilitätsstile: Ein sozial-ökologisches Analyse-, Integrations- und Zielgruppenkonzept. In: Zanger, C., Habscheid, S., Gaus, H. (Eds.), *Bleibt das Auto mobil? Mobilität und Automobil im interdisziplinären Diskurs*. Lang, Frankfurt/Main, pp. 224–239.
- Grabka, M., Frick, J., 2008. *The Shrinking German Middle Class: Signs of Long-Term Polarization in Disposable Income?*. Berlin.
- Grinstein, A., Riefler, P., 2015. Citizens of the (green) world?: cosmopolitan orientation and sustainability. *J. Int. Bus. Stud.* 46 (6), 694–714. <https://doi.org/10.1057/jibs.2015.1>.
- Groth, S., 2019a. Multimodal divide: Reproduction of transport poverty in smart mobility trends. *Transp. Res. Part A: Policy Pract.* 125, 56–71. <https://doi.org/10.1016/j.tra.2019.04.018>.
- Groth, S., 2019b. Multioptionalität: Ein neuer („alter“) Terminus in der Alltagsmobilität der modernen Gesellschaft? *Raumforschung und Raumordnung* 77, 17–34. <https://doi.org/10.2478/rara-2019-0003>.
- Groth, S. (2021) Materialization of Antidiscipline. *Small-Scale Post-Foundationalism Using Michel de Certeau's Clash of Strategies and Tactics* In: Landau, F., Pohl, L., Roskamm, N. (Eds.) [Un] Grounding. transcript-Verlag, Bielefeld, pp. 279–300.
- Groth, S., Kuhnimhof, T., 2021. In: Vickerman, R. (Ed.), *Multimodality in Transportation*, *International Encyclopedia of Transportation*. Elsevier, Amsterdam, pp. 118–126.
- Haustein, S., 2021. What role does free-floating car sharing play for changes in car ownership?: evidence from longitudinal survey data and population segments in Copenhagen. *Travel Behav. Soc.* 24, 181–194. <https://doi.org/10.1016/j.tbs.2021.04.003>.
- Haustein, S., Hunecke, M., 2007. Reduced use of environmentally friendly modes of transportation caused by perceived mobility necessities: an extension of the theory of planned behavior. *J. Appl. Soc. Psychol.* 37, 1856–1883. <https://doi.org/10.1111/j.1559-1816.2007.00241.x>.
- Haustein, S., Hunecke, M., Manz, W., 2007. Einfluss der Wetterlage und der Wetterempfindlichkeit auf die Verkehrsmittelnutzung. *Internationales Verkehrswesen* 59, 392–396.
- Heath, Y., Gifford, R., 2002. Extending the theory of planned behavior: predicting the use of public transportation. *J. Appl. Soc. Psychol.* 32, 2154–2189. <https://doi.org/10.1111/j.1559-1816.2002.tb02068.x>.
- Helbrecht, I., 2018. *Gentrification and Displacement*. In: Helbrecht, I. (Ed.), *Gentrification and Resistance*. Springer VS, Wiesbaden.
- Hempelmann, H., Flaig, B.B., 2019. *Die Bürgerliche Mitte*. In: Hempelmann, H., Flaig, B. (Eds.), *Aufbruch in die Lebenswelten: Die zehn Sinus-Milieus als Zielgruppen kirchlichen Handelns*. Springer VS, Wiesbaden, pp. 117–130.
- Hjorthol, R., 2016. Decreasing popularity of the car?: changes in driving licence and access to a car among young adults over a 25-year period in Norway. *J. Transp. Geogr.* 51, 140–146. <https://doi.org/10.1016/j.jtrangeo.2015.12.006>.
- Hoffmann, C., Abraham, C., White, M.P., Ball, S., Skippon, S.M., 2017. What cognitive mechanisms predict travel mode choice?: a systematic review with meta-analysis. *Transp. Res. Part F: Traffic Psychol. Behav.* 37, 631–652. <https://doi.org/10.1080/01441647.2017.1285819>.
- Hradil, S., 1987. *Sozialstrukturanalyse in einer fortgeschrittenen Gesellschaft*. Von Klassen und Schichten zu Lagen und Milieus. Leske + Budrich, Opladen.
- Hradil, S., 2006. *Soziale Milieus - eine praxisorientierte Forschungsperspektive*. Aus Politik und Zeitgeschehen (APuZ) 3–10.
- Hunecke, M., 2000. *Ökologische Verantwortung. Lebensstile und Umweltverhalten*. Heidelberg, Asanger.
- Hunecke, M., Blöbaum, A., Matthies, E., Höger, R., 2001. Responsibility and environment: ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environ. Behav.* 33, 830–852. <https://doi.org/10.1177/00139160121973269>.
- Hunecke, M., Groth, S., Wittowsky, D., 2020. Young social milieus and multimodality: Interrelations of travel behaviours and psychographic characteristics. *Mobilities* 85, 1–19. <https://doi.org/10.1080/17450101.2020.1732099>.
- Hunecke, M., Haustein, S., Grischkat, S., Böhrer, S., 2007. Psychological, sociodemographic, and infrastructural factors as determinants of ecological impact caused by mobility behavior. *J. Environ. Psychol.* 27, 277–292. <https://doi.org/10.1016/j.jenvp.2007.08.001>.
- Hunecke, M., Heppner, H., Groth, S., 2021/2022. Fragebogen zu psychologischen Einflussfaktoren der nahräumlichen Nutzung von Pkw, ÖPNV und Fahrrad (PsyVKN): Faktorenstruktur, psychometrische Eigenschaften und Validierung. Diagnostica (in press).
- infas Institut für angewandte Sozialwissenschaft GmbH, 2018. *Mid - Mobilität in Deutschland: Verkehrsaufkommen - Struktur - Trends*. Kurzreport, Bonn.
- Inglehart, R., 1971. The Silent Revolution in Europe, Intergenerational Change in Post-Industrial Societies. *Am. Polit. Sci. Rev.* 65 (4) <https://doi.org/10.2307/1953494>.
- Jahn, T., Wehling, P., 1999. Das mehrdimensionale Mobilitätskonzept - Ein theoretischer Rahmen für die stadtökologische Mobilitätsforschung. In: Friedrichs, J., Hollaender, K. (Eds.), *Stadtökologische Forschung: Theorien und Anwendungen*. Analytica, Berlin, pp. 127–141.
- Jain, T., Rose, G., Johnson, M., 2021. "Don't you want the dream?": psycho-social determinants of car share adoption. *Transp. Res. Part F: Traffic Psychol. Behav.* 78, 226–245. <https://doi.org/10.1016/j.trf.2021.02.008>.
- Klein, N.J., Smart, M.J., 2017. Millennials and car ownership: less money, fewer cars. *Transp. Policy* 53, 20–29. <https://doi.org/10.1016/j.tranpol.2016.08.010>.
- Klinger, T., 2017. Moving from monomodality to multimodality?: changes in mode choice of new residents. *Transp. Res. Part A: Policy Pract.* 221–237. <https://doi.org/10.1016/j.tra.2017.01.008>.
- Konrad, K., Groth, S., 2019. Consistency or contradiction?: Mobility-Related Attitudes and Travel Mode Use of the Young 'New Generation'. *Raumforschung und Raumordnung Spatial Res. Plann.* 9. <https://doi.org/10.2478/rara-2019-0050>.
- Konrad, K., Wittowsky, D., 2016. Digital Natives mobil - Die virtuelle und räumliche Mobilität junger Menschen. *Internationales Verkehrswesen* 68 (1), 56–58.
- Konrad, K., Wittowsky, D., 2018. Virtual mobility and travel behavior of young people - connections of two dimensions of mobility. *Res. Transp. Econ.* 68, 11–17. <https://doi.org/10.1016/j.retrec.2017.11.002>.
- Kroesen, M., Handy, S., Chorus, C., 2017. Do attitudes cause behavior or vice versa?: an alternative conceptualization of the attitude-behavior relationship in travel behavior modeling. *Transp. Res. Part A: Policy Pract.* 101, 190–202. <https://doi.org/10.1016/j.tra.2017.05.013>.
- Krueger, R., Vij, A., Rashidi, T.H., 2018. Normative beliefs and modality styles: a latent class and latent variable model of travel behaviour. *Transportation* 45 (3), 789–825. <https://doi.org/10.1007/s11116-016-9751-1>.

- Kuhnimhof, T., Buehler, R., Dargay, J., 2011. A New generation: travel trends for young Germans and Britons. *Transp. Res. Rec.* 2230, 58–67. <https://doi.org/10.3141/2230-07>.
- Kuhnimhof, T., Buehler, R., Wirtz, M., Kalinowska, D., 2012a. Travel trends among young adults in Germany: increasing multimodality and declining car use for men. *J. Transp. Geogr.* 24, 443–450.
- Kuhnimhof, T., Chlond, B., von der Ruhren, S., 2006. Users of transport modes and multimodal travel behavior: steps toward understanding travelers' options and choices. *Transp. Res. Rec.* 1985, 40–48. <https://doi.org/10.1177/0361198106198500105>.
- Kuhnimhof, T., Wirtz, M., Manz, W., 2012b. Decomposing young Germans' altered car use patterns: lower incomes, more students, decrease in car travel by men, and more multimodality. *Transp. Res. Rec.* 2320, 64–71. <https://doi.org/10.3141/2320-08>.
- Lanzendorf, M., 2002. Mobility Styles and travel behavior: application of a lifestyle approach to leisure travel. *Transp. Res. Rec.* 1807, 163–173. <https://doi.org/10.3141/1807-20>.
- Lanzendorf, M., Busch-Geertsema, A., 2014. The cycling boom in large German cities—Empirical evidence for successful cycling campaigns. *Transp. Policy* 36, 26–33. <https://doi.org/10.1016/j.tranpol.2014.07.003>.
- Lanzini, P., Khan, S.A., 2017. Shedding light on the psychological and behavioral determinants of travel mode choice: a meta-analysis. *Transp. Res. Part F: Traffic Psychol. Behav.* 48, 13–27. <https://doi.org/10.1016/j.trf.2017.04.020>.
- Lavieri, P.S., Garikapati, V.M., Bhat, C.R., Pendyala, R.M., Astroza, S., Dias, F.F., 2017. Modeling individual preferences for ownership and sharing of autonomous vehicle technologies. *Transp. Res. Rec.* 2665 (1), 1–10. <https://doi.org/10.3141/2665-01>.
- Lind, H.B., Nordfjærn, T., Jørgensen, S.H., Rundmo, T., 2015. The value-belief-norm theory, personal norms and sustainable travel mode choice in urban areas. *J. Environ. Psychol.* 44, 119–125. <https://doi.org/10.1016/j.jenvp.2015.06.001>.
- Lucas, K., 2012. Transport and social exclusion: Where are we now? *Transp. Policy* 20, 105–113. <https://doi.org/10.1016/j.tranpol.2012.01.013>.
- Lucas, K., Mattioli, G., Verlinghieri, E., Guzman, A., 2016. Transport poverty and its adverse social consequences. *Proc. Inst. Civil Eng. – Transp.* 169, 353–365. <https://doi.org/10.1680/jtran.15.00073>.
- MacDonald, R., Giazitoglu, A., 2019. Youth, enterprise and precarity: Or, what is, and what is wrong with, the 'gig economy'? *J. Sociol.* 55 (4), 724–740. <https://doi.org/10.1177/1440783319837604>.
- Marx, K., 1990 [1867]. *Capital Volume 1: A critique of political economy*. Penguin Books, London.
- Mattioli, G., Lucas, K., Marsden, G., 2017. Transport poverty and fuel poverty in the UK: from analogy to comparison. *Transp. Policy* 59, 93–105. <https://doi.org/10.1016/j.tranpol.2017.07.007>.
- Mehdizadeh, M., Zavareh, M.F., Nordfjærn, T., 2019. Mono- and multimodal green transport use on university trips during winter and summer: hybrid choice models on the norm-activation theory. *Transp. Res. Part A: Policy Pract.* 130, 317–332. <https://doi.org/10.1016/j.tra.2019.09.046>.
- Melia, S., Chatterjee, K., Stokes, G., 2018. Is the urbanisation of young adults reducing their driving? *Transp. Res. Part A: Policy Pract.* 118, 444–456. <https://doi.org/10.1016/j.tra.2018.09.021>.
- Marcuse, P., 1997. The Enclave, the Citadel, and the Ghetto. *Urban Affairs Rev.* 33, 228–264. <https://doi.org/10.1177/107808749703300206>.
- Martens, K., 2017. *Transport Justice: Designing Fair Transportation Systems*. Routledge, New York.
- Møller, M., Hausteine, S., Bohlbro, M.S., 2018. Adolescents' associations between travel behaviour and environmental impact: a qualitative study based on the Norm-Activation Model. *Travel Behav. Soc.* 11, 69–77. <https://doi.org/10.1016/j.tbs.2017.12.005>.
- Monheim, H., 1994. *Integration im Umweltverbund*. *Verkehrszeichen* 10 (3), 5–14.
- Monteiro, M.M., Abreu e Silva, J. de, Hausteine, S., Pinho de Sousa, J., 2021. Urban travel behavior adaptation of temporary transnational residents. *J. Transp. Geogr.* 90, 102935. <https://doi.org/10.1016/j.jtrangeo.2020.102935>.
- Morten, A., Gatersleben, B., Jessop, D.C., 2018. Staying grounded?: applying the theory of planned behaviour to explore motivations to reduce air travel. *Transp. Res. Part F: Traffic Psychol. Behav.* 55, 297–305. <https://doi.org/10.1016/j.trf.2018.02.038>.
- Muntaner, C., 2018. Digital platforms, gig economy, precarious employment, and the invisible hand of social class. *Int. J. Health Serv.* 48 (4), 597–600. <https://doi.org/10.1177/0020731418801413>.
- McLaren, A.T., 2016. Families and transportation: moving towards multimodality and altermobility? *J. Transp. Geogr.* 51, 218–225. <https://doi.org/10.1016/j.jtrangeo.2016.01.006>.
- Nachtwey, O., 2018. *Germany's hidden Crisis: Social Decline in the Heart of Europe*. Verso, Brooklyn.
- Nagle, A., 2017. *Kill All Normies: The Online Culture wars from Tumblr and 4chan to the alt-right and Trump*. Zero Books, Winchester.
- Nobis, C., 2007. Multimodality: facets and causes of sustainable mobility behavior. *Transp. Res. Rec.* 2010, 35–44. <https://doi.org/10.3141/2010-05>.
- Ohnmacht, T., Götz, K., Schad, H., 2009. Leisure mobility styles in Swiss conurbations: construction and empirical analysis. *Transportation* 36 (2), 243–265. <https://doi.org/10.1007/s11116-009-9198-8>.
- Olafsson, A.S., Nielsen, T.S., Carstensen, T.A., 2016. Cycling in multimodal transport behaviours: exploring modality styles in the Danish population. *J. Transp. Geogr.* 52, 123–130. <https://doi.org/10.1016/j.jtrangeo.2016.03.010>.
- Otte, G., 2013. *Lebensstile, Handwörterbuch zur Gesellschaft Deutschlands*. Springer Fachmedien, Wiesbaden, pp. 538–551.
- Pichler, F., 2008. How real is cosmopolitanism in Europe? *Sociology* 42 (6), 1107–1126. <https://doi.org/10.1177/0038038508096936>.
- Pichler, F., 2009. Cosmopolitan Europe: views and identity. *European Societies* 11 (1), 3–24. <https://doi.org/10.1080/14616690802209697>.
- Prillwitz, J., Barr, S., 2011. Moving towards sustainability?: mobility styles, attitudes and individual travel behaviour. *J. Transp. Geogr.* 19 (6), 1590–1600. <https://doi.org/10.1016/j.jtrangeo.2011.06.011>.
- Puhe, M., Schippl, J., 2014. User Perceptions and Attitudes on Sustainable Urban Transport among Young Adults: Findings from Copenhagen, Budapest and Karlsruhe. *J. Environ. Policy Plann.* 16, 337–357. <https://doi.org/10.1080/1523908X.2014.886503>.
- Reckwitz, A., 2019. *Das Ende der Illusionen. Politik, Ökonomie und Kultur in der Spätmoderne*. Suhrkamp, Berlin.
- Ryan, J., 2020. Examining the process of modal choice for everyday travel among older people. *Int. J. Environ. Res. Public Health* 17, 691. <https://doi.org/10.3390/ijerph17030691>.
- Sachs, W., 1992. *For Love of the Automobile: Looking Back into the History of our Desires*. University of California Press, Berkeley.
- Scheiner, J., Chatterjee, K., Heinen, E., 2016. Key events and multimodality: a life course approach. *Transp. Res. Part A: Policy Pract.* 91, 148–165. <https://doi.org/10.1016/j.tra.2016.06.028>.
- Schram, S., 2015. *The Return of Ordinary Capitalism: Neoliberalism, Precarity, Occupy*. Oxford University Press, Oxford.
- Schulze, G., 1993. *Die Erlebnisgesellschaft: Kultursoziologie der Gegenwart*. Frankfurt a. M. Campus.
- Schulze, G., 1994. Milieu und Raum. In: Noller, P., Prigge, W., Ronneberger, K., Wentz, M., Schöbel, U. (Eds.), *Stadt-Welt: Über die Globalisierung städtischer Milieus*. Campus-Verlag, Frankfurt am Main, pp. 40–53.
- Schwartz, S.H., 1977. Normative influences on altruism. *Adv. Exp. Soc. Psychol.* 10, 221–279. [https://doi.org/10.1016/S0065-2601\(08\)60358-5](https://doi.org/10.1016/S0065-2601(08)60358-5).
- Serres, M., 2015. *Thumbelina: The Culture and Technology of Millennials*. Rowman & Littlefield International, London.
- Sheller, M., 2004. Automotive emotions: feeling the Car. *Theory, Cult. Soc.* 21, 221–242. <https://doi.org/10.1177/02632764040406068>.
- Sheller, M., Urry, J., 2006. The new mobilities paradigm. *Environ. Plann. A* 38 (2), 207–226. <https://doi.org/10.1068/a37268>.
- Simkus, A.A., 1981. Comparative stratification and mobility. *Comp. Sociol. J.* 22 (3), 213–236. <https://doi.org/10.1163/156854281X00127>.
- SINUS Markt- und Sozialforschung GmbH, 2015. *Die Sinus-Milieus*. <www.sinus-institut.de/fileadmin/user_data/sinus-institut/Bilder/sinus-mileus-2015/2015-09-23_Sinus-Beitrag_b4p2015_slide.pdf>. (accessed 14.09.2017).
- SINUS Markt- und Sozialforschung GmbH, 2018. *Die Sinus-Milieus®*. <https://www.sinus-institut.de/fileadmin/user_data/sinus-institut/Bilder/Sinus-Milieus_092018/2018-09-18_Sinus-Milieus_Website_UEBerblick_slide.pdf>. (accessed 31.05.2020).
- Sperber, J., 1997. Bürger, Bürgertum, Bürgerlichkeit, Bürgerliche Gesellschaft: Studies of the German (Upper) Middle Class and its Sociocultural World. *J. Modern Hist.* 69 (2), 271–297. <https://doi.org/10.1086/245488>.
- Spickermann, A., Grienz, V., von der Gracht, H.A., 2014. Heading towards a multimodal city of the future? *Technol. Forecast. Soc. Chang.* 89, 201–221. <https://doi.org/10.1016/j.techfore.2013.08.036>.
- Standing, G., 2014. *The Precariat: The New Dangerous Class*. Bloomsbury, London.
- Statistisches Bundesamt, 2021. *Sozialberichterstattung. OECD-Skala*. <<https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Soziales/Sozialberichterstattung/Glossar/oecd-skala.html>>. (accessed 10.02.2021).
- Strenger, C., 2019. *Diese verdammten liberalen Eliten: Wer sie sind und warum wir sie brauchen*. Suhrkamp, Berlin.
- Thorhauge, M., Kassahun, H.T., Cherchi, E., Hausteine, S., 2020. Mobility needs, activity patterns and activity flexibility: How subjective and objective constraints influence mode choice. *Transp. Res. Part A: Policy Pract.* 139, 255–272. <https://doi.org/10.1016/j.tra.2020.06.016>.
- Urry, J., 2011 [2007]. In: *Mobilities*. Polity Press, Cambridge.
- van Acker, V., Mokhtarian, P.L., Witlox, F., 2014. Car availability explained by the structural relationships between lifestyles, residential location, and underlying residential and travel attitudes. *Transp. Policy* 35, 88–99. <https://doi.org/10.1016/j.tranpol.2014.05.006>.
- van Acker, V., Witlox, F., 2010. Car ownership as a mediating variable in car travel behaviour research using a structural equation modelling approach to identify its dual relationship. *J. Transp. Geogr.* 18, 65–74. <https://doi.org/10.1016/j.jtrangeo.2009.05.006>.
- Vester, M., 2001. *Soziale Milieus im gesellschaftlichen Strukturwandel: Zwischen Integration und Ausgrenzung*. Suhrkamp, Frankfurt/Main.
- Watt, P., 2009. Living in an Oasis: middle-class disaffiliation and selective belonging in an English suburb. *Environ. Plann. A* 41 (12), 2874–2892. <https://doi.org/10.1068/a41120>.
- Weck, S., Hanhörster, H., 2015. Seeking urbanity or seeking diversity?: Middle-class family households in a mixed neighbourhood in Germany. *J. Hous. Built Environ.* 30 (3), 471–486. <https://doi.org/10.1007/s10901-014-9425-2>.
- Wedel, M., Kamakura, W.A., 2000. *Market Segmentation: Conceptual and Methodological Foundations*. Springer Science & Business Media.
- Zukin, S., 1998. Urban lifestyles: diversity and standardisation in spaces of consumption. *Urban Stud.* 35 (5–6), 825–839. <https://doi.org/10.1080/0042098984574>.
- Zhao, Z., Zhao, J., 2020. Car pride and its behavioral implications: an exploration in Shanghai. *Transportation* 47, 793–810. <https://doi.org/10.1007/s11116-018-9917-0>.
- Žižek, S., 2016. *Against the Double Blackmail: Refugees, Terror and other Troubles with the Neighbours*. Penguin Books, London.

DuEPublico

Duisburg-Essen Publications online

UNIVERSITÄT
DUISBURG
ESSEN

Offen im Denken

ub

universitäts
bibliothek

This text is made available via DuEPublico, the institutional repository of the University of Duisburg-Essen. This version may eventually differ from another version distributed by a commercial publisher.

DOI: 10.1016/j.trip.2021.100467

URN: urn:nbn:de:hbz:464-20211028-105317-7



This work may be used under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0 License (CC BY-NC-ND 4.0).