

Theoretical Framework

How do values shape the mobility culture narrative of the present and future?

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Executive summary

Nowadays mobility planning slowly shifts away from the overemphasis of the traffic flow and speed optimization and starts taking the individual and societal needs more in the focus. It is well recognised, that mobility as we know it today, cannot continue without seriously endangering the environment for further generations. Whereas politics on high levels such as EU parliament shifted in the last years their political programs to a more sustainable direction, a change of political goals solely does not initiate cultural shifts. Furthermore, it is essential to consider individual values and cultural idiosyncrasies.

To form future ideas we first want to understand the current narrative and its underlying value system. As a first step on the long way, the first task in the REBALANCE project is dedicated to proposing a theoretical framework to structure further analysis of both, the current narrative and further forecasting activities. The main topic in REBALANCE, namely the influence of values on mobility culture, is probably one of the most discussed in current mobility research.

The aim of REBALANCE is to describe the essences that shape the mobility culture of today. The framework will be a backbone for further analysis of mobility culture aspects and will help to stay aware and structure the `complex whole' during the project. This `complex whole' is from many disciplines addressed as culture. REBALANCE starts from the assumption that the mobility culture that currently prevails in the European Union (EU) has led to unsustainable patterns, in social and environmental terms and asks the questions, how can we describe the current narrative of mobility culture(s) and which factors are most important to be considered.

(Mobility) Culture can be conceptualized as sets of mobility related practices, beliefs, ideas, values, inventions, artefacts, and attitudes that characterize groups of people and therefore can be seen as a set of schemes that are jointly shared (Gangestad et al., 2006). To conceptualize mobility culture and to identify relevant factors within the REBALANCE analysis we apply and extend a culture model of mobility developed by Deffner et al. (2006), which combines subjective and objective factors in order to measure the characteristics of mobility cultures. At the heart of the model four interactive dimensions of mobility culture are identified as a **spatial**, an **individual subjective**, a **communicative** and a **political** dimension that have been successively extended to be applicable to a cross-national scope. These dimensions include a broad set of very different elements that make the analysis complex. The spatial dimension, i.e. the historically produced space and resources shape mobility culture through not only infrastructure and provided modes of transport but also spatial planning, activity spaces and solutions like technical innovation. The dimension of communication refers to discourses in the society. This includes societal trends like currently sustainable development, equality and equity as well as their communication directly between individuals or via media, literature, arts, marketing and other means of discourses. The third dimension is politics and planning and provides the legal and political frame of mobility culture and influence the practical implementation of culture not only in form of steering the built environment but also through e.g. regulation, taxation and domain-specific policies (health, social etc.). The individual dimension brings to light the subjective elements of mobility culture. To some part, the current situation is the result of the decisions of millions of transport users e.g. where to live and work, their



preferences for certain activities and travelling as described in the hierarchical structure of mobility behaviour. People usually do not base their decisions on 'objective' reasons (as stated in the model of the rational decision maker) but rather on heuristics and subjective evaluations, which may lead to e.g. very different mobility styles and transport related consequences.

Whereas the four dimensions in the mobility culture framework are useful for the description of cultural expressions, all elements of (mobility) culture discussed have one thing in common: They are all guided by basic values (and related constructs like e.g. attitudes, beliefs, motifs and goals). At the group level, values are scripts or cultural ideals held in common by members of a group; the group's 'social mind' (Oyserman, 2015). Differences in these values or cultural ideals distinguish different social groups or systems. Understanding culture as the shared set of values of a group finds support in most culture definitions and sees values as (one of the) the core concept of culture. Values form meaning and help to make sense of the (world) conditions. They lead to identification with other people or groups as well as with ideas and practices. Values can be conceptualized on the individual and group level (e.g. societies, cultures, and other social groups) and influence each other.

The most profound influence of values may be through the ways that they influence rules, norms, procedures within a society, and in this way structure the everyday life choices for individuals within a society. Values at the individual level or personal values are defined as "broad, trans-situational, desirable goals, varying in importance, that serve as guiding principles in people's lives" (Schwartz, 1992). Thus, values refer to the motivational basis of human action. What do we want to achieve? What are our goals? What is right and wrong? That is, values may affect beliefs, attitudes, norms, intentions, and behaviour of different kinds. They can be broken down to ten basic human values that are cross-culturally replicated. Structured by the different motivational goals they express, they can be sorted in a two-dimensional space, both with two conflicting poles: egoism versus altruism and individualism versus conformism. When values conflict in a particular situation, people most likely act upon the values they prioritize. Values are relatively stable over time, whereas specific beliefs, attitudes, and norms can change more easily. In turn, changes in (the priority of) values are likely to result in changes in a wide range of behaviour-related beliefs and norms, intentions, and behaviours simultaneously. This feature makes it particularly relevant to understand the value basis of transport-related beliefs, attitudes, norms, intentions, and actions. All subjective and objective elements of mobility culture mentioned above, are based on value structures. Politics, that have for instance a tendency towards egoist and conformist values, shape mobility culture in another way than others with a rather altruistic and individualistic orientation. Subjective motivations for mode choice for instance are addressed in literature (e.g. Schlag & Schade, 2007). When locating these motivations in the Basic Value Circle a huge gap around the altruistic value orientation becomes apparent. Ironically, values that are assigned to the altruistic orientation correspond mostly to sustainable mobility goals. It is exemplary that traditional approaches of analysis in mode choice motives miss at least partly the altruistic dimension.

The Framework that is developed in this work structures the main practices of mobility culture considering contextual challenges of the present society and relates them through the analysis of the predominant motives to the concept of basic values.



1 SUSTAINABLE MOBILITY AS A MODERN CHALLENGE

Humankind is on the move. The speed and distance at which certain sectors of the population move became a key symbol of modernity (Rosa, 2010).

REBALANCE starts from the assumption that the mobility culture that currently prevails in the European Union (EU) has led to unsustainable patterns, in social and environmental terms. The market structure and the regulation of transport systems, along with the mobility choices made by users, fall short of ensuring a sustainable balance between traffics and places, freedom and welfare, creativity, security and public health. Emerging technologies applied in transport and communication generate both immense opportunities and threats.

Steps in this direction can hardly be solved on a national level but may be organized in bigger entities. The ambitious goal is set down in the European Green Deal, which aims to roll out cleaner, cheaper and healthier forms of private and public transport without leaving vulnerable social groups behind. The European Union meets these challenges for urban mobility with a political paradigm shift, apparent for instance in the Smart and Sustainable Mobility Strategy (European Commission, 2020) with strong support for developing sustainable urban mobility plans (SUMP). Following science and the societal development, the plan shows a shift from an automotive-centred and optimized planning for traffic flow to multioptional planning for people and accessibility of destinations (see in Table 1).

Traditional Transport Planning		Sustainable Urban Mobility Planning
Focus on traffic	→	Focus on people
Primary objectives: Traffic flow capacity and speed	→	Primary objectives: Accessibility and quality of life , including social equity, health and environmental quality, and economic viability
Mode-focussed	→	Integrated development of all transport modes and shift towards sustainable mobility
Infrastructure as the main topic	→	Combination of infrastructure, market, regulation, information and promotion
Sectoral planning document	→	Planning document consistent with related policy areas
Short and medium-term delivery plan	→	Short and medium-term delivery plan embedded in a long-term vision and strategy
Covering an administrative area	→	Covering a functional urban area based on travel-to-work flows
Domain of traffic engineers	→	Interdisciplinary planning teams
Planning by experts	→	Planning with the involvement of stakeholders and citizens using a transparent and participatory approach
Limited impact assessment	→	Systematic evaluation of impacts to facilitate learning and improvement

Table 1. Differences between traditional transport planning and Sustainable Urban Mobility Planning. Extracted from SUMP EU 2030 (Rupprecht Consult, 2019)



The aspects of traditional transport planning practices describe a narrative that planners followed for decades. It literally shaped our cities, villages and landscapes and even our perception of transport. The given environment and infrastructure and established societal norms create a context in which people develop practices of moving around. The SUMP illustrates a political paradigm shift in urban transport planning practices and may change, on the long run, elements of context in which people move. This paradigm shift is not only initiated top-down by global politics, but as well by increasing calls for change from society. Years of creating life realities based on optimized car-traffic flow and car-centred infrastructure makes it yet difficult to envision a future mobility that put the needs of all people in focus. Accordingly, optimization for efficiency and speed is outdated; more collective approaches emerge together with compromises, new opportunities and challenges.

By shifting the focus, we all can feel and experience a new way of talking about mobility compared with the dominant narratives from the 90's. When the term mobility or planning culture is used in those concept papers (e.g. Rupprecht Consult, 2019), it serves mostly as an abstract description of current practices with multiple application purposes. Mobility indeed is a basic need of people but nowadays as well needs to meet the demands of sustainability.

Describing the current mobility narrative or culture is an extraordinarily ambitious task, because mobility is everywhere and has many different motivations and reasons influenced by different areas of life. In REBALANCE, we understand a narrative as a shared interpretation, a shared structured explanation, a shared story, of how the world works. This goes in line with many culture definitions where reality is assumed to be socially constructed by practices and meanings. We understand culture twofold by integrating two culture theories: on the one hand, culture is the contextual factor and on the other hand, culture can be described by the practices and reveal the interpretation of the world that leads to behaviour. The core of culture can be set in the underlying and shared values of a society. This concept will be elaborated in the next chapters in detail and serves as the framework for analysis in REBALANCE.

Therefore, the objective of this report is to develop a theoretical macro-framework describing the current interconnections of values and mobility culture in order to structure them in the next tasks following look into the fundamentals of the mobility culture of today.



2 TOWARDS THE REBALANCE MOBILITY CULTURE – VALUE FRAMEWORK

2.1 Mobility as the motivation to move

Mobility is a temporal change of place (Flade, 1994). Originally, people were mobile to survive. It was necessary to move in order to find food, a mating partner or avoid threats. Nowadays, the term Mobility is widely used and applied in many fields of movement (Cerwenka, 1999). For a better overview, Figure 1 shows how different fields of mobility can be structured. People can move not only spatially, but also intellectually, which both interact strongly with social mobility between roles or status. The movement of goods is not explicitly included in the figure, as goods do not themselves have the ability to move, but have to be moved by people and therefore follow the logic of peoples’ spatial mobility.

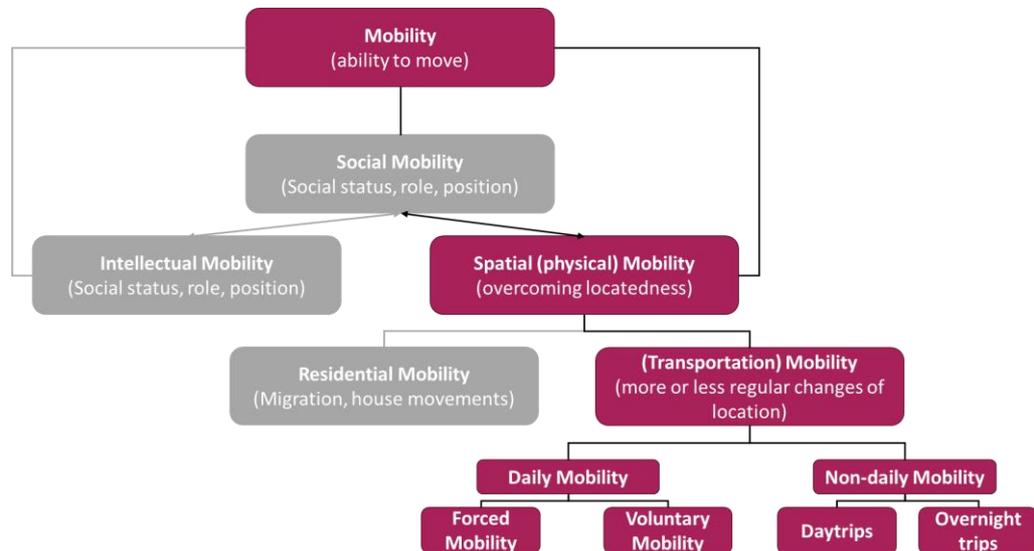


Figure 1. Adapted from Wittwer, 2014. Factors incorporated in REBALANCE are highlighted.

Following the above-mentioned definition of Flade (1994), REBALANCE focuses on the subcategory of transportation mobility, which is part of physical mobility and differs from residential mobility by the temporal and recurring aspect of relocating. Transportation mobility itself can be daily or non-daily. Non-daily trips are often made for vacation, leisure or business obligations. In everyday life, people have to move in order to fulfil their needs. Whereas traditionally mobility is understood as physical movement of people, growing opportunities for digital mobility in everyday life add another aspect to the discussion (Jain & Lyons, 2008). In other sense individuals' travel sometimes is mandatory (e.g. Work, work-related, school and school related activity or out-of-home activity participation) and non-mandatory (e.g. maintenance/discretionary). Sometimes people can freely choose the location of the destination and even decide to stay at home and participate virtually in daily activities, sometimes they are forced due to obligations and constrains. The latter is approached in literature as 'forced mobility' and describes the inevitable mobility in areas with limited



options to reach destinations of basic needs in the close environment with the pivotal role of built environment on either inducing or moderating travel demands (Knoflacher, 1996). For instance a lack of working opportunities, leisure activities or grocery stores nearby force people to move, so is forced mobility often a result of residence location and external compulsions.

Transportation is rather understood as actions, modes and infrastructure whereas mobility is, more holistic spoken, the movement of people. Transport is, in this logic, the rational overcoming of distances and only one part of mobility. Where historically rational motives for mobility such as ensuring food supply, security and mating were major drivers, many more affective motives gained importance. As a result, mobility is not only a mediator for satisfying needs, but also mobility is a need itself (Flade 1994). Literature on excess travel has highlighted this possible disjunction between basic needs and observed human movements (King et al., 1987; Kanaroglou et al., 2015 and L'Hostis, 2020). Accordingly, people do not only decide rationally about being mobile or not and which mode to choose, but rather move according to certain motivational considerations.

A positive utility (cf. disutility) can be found in three aspects:

1. The activity conducted at the destination (fulfilment of needs)

Here, the classic transport element of mobility, the utilitarian movement from one place to another, is described. This includes as well the freight sector, where mobility is in particular the movement of goods from one place to another.

2. Activities while traveling

Travel-based multitasking is studied a lot in air or rail-based transport and more recently in autonomous driving, where the passive travel time can be used for enjoyable or productive activities. This in turn can lead to changes in the value of travel time (Wardman et al., 2020; Bounie et al., 2019)

3. Activity of travelling itself

Travel is not only a derived demand, but also 'desired for its own sake' (Mokhtarian, Salomon, & Redmond 2001). People enjoy different travel modes without a need for being mobile. A sense of speed, motion, control, enjoyment of beauty and many more motives can be satisfied through the activity of travelling itself.

Different motivations, styles and types of mobility follow individual decisions and preferences. Modern mobility became a multifunctional activity to fulfil key psychological needs that lead to psychological well-being. According to the Self Determination Theory, the basic psychological needs are a satisfactory combination of Autonomy, Competence and Relatedness (Deci & Ryan, 2000). This motivational element is central to understand the dimension that mobility holds and why the topic is much more complex than only the fulfilment of the transport motive. Forced mobility,



for instance, does indeed fulfil the transport motive, but neither autonomy nor relatedness are satisfied which leads to decreased subjective well-being.

The opportunities and challenges of space as well as the patterns people express in mobility exhibit some commonalities on city levels, country levels and also on European level. These basic commonalities are contrasted and approached as mobility cultures.

2.2 Why is Mobility “Culture”?

Culture is a concept that is well known and much discussed in many different disciplines. The definition of culture is always domain-specific. “Culture” is said to be one of the three most complex words in the English language (Eagleton, 2000). Culture can be conceptualized as sets of practices, beliefs, ideas, values, inventions, artefacts, and attitudes that characterize groups of people (Gangestad et al., 2006, p. 78). It is the human-made part of the environment and includes both, subjective and objective elements (Triandis, 1972)

Berezin (2015) defines the core assumptions of culture analysis as follows:

1. Culture is contingent, context dependent, and not fixed either in time or in space.
2. Culture is manifested in practice – the things that people do together from speaking the same language to common behaviours and repertoires of evaluation.
3. Culture is embedded in symbols or material objects or ritualized behaviours that form different media of communication.

If culture is context dependent, manifested in practice and embedded in habits and symbols, that implies that culture can be analysed twofold:

- **Descriptive**, so culture can be understood when observing practices, objects and their interaction in a particular context.
- **Normative** by defining a ‘favourable and an ‘unfavourable’ evaluation of practices, objects and their interaction. It is expressed by laws and rules made by EU. Through the sustainable mobility culture claim of REBALANCE a favourable mobility culture should result in sustainable practices.

In the normative frame of REBALANCE, driven by the aim of reaching a sustainable mobility culture, several contextual changes with impacts on sustainable mobility can be observed. Some major context influences are: a growing environmental and health consciousness; technological changes towards automation and digitalisation; the Covid-19 pandemic (which has severe effects on mobility demands); and a fast developing trend towards sharing instead of owning.

As illustrated in chapter 3.2, a behaviour that is well observable and indeed a fundamental practice of the human existence is mobility. Accordingly, mobility culture is a socio-cultural setting consisting of travel patterns, the built environment and



mobility-related discourses. That means in sum that culture is the materially and socially constructed dimensions of the transport system. All practices are carried out under a specific scope of contextual conditions. Swidler (1986) calls the cultural context a 'toolkit of resources' enabling or blocking particular practices that guide these actions instead of providing ultimate values. In mobility, this toolkit is mostly derived from the (built) environment and political system as well as from the normative rules of society: "[...] societies, cultures, and other social groups have value-based norms, priorities, and guidelines, which describe what people ought to do if they are to do the right, moral, valued thing." (Oyserman, 2015)

These societal norms again can have a normative and a descriptive element. Norms can be analysed by describing how the majority behaves or by the implicit or explicit pressure of (assumed) expectations from an individual. The normative frame of European Union context may define the political scope by which 'European' actions are evaluated and nonconformist actions declared as deviant.

REBALANCE does not aim to measure cultures but tries to understand the narrative of mobility culture in EU and therefore divides the complex concept in different levels of analysis. Culture can be seen as a set of schemes that are shared by a group. This implies in turn, that we need to understand the schemes and define the groups in order to describe culture. Klinger (2014) concludes that mobility culture can vary fundamentally between cities even though underlying the same national context and social order. "Each city develops along its own unique lines of historically motivated narrative, or the interpretation of various forms of materiality, as well as political and economic figurations – with each unique city logic rooted in early-defined practices, and yet not limited to them." (Löw, 2008, p. 285). REBALANCE defines the group on a cross-national, European, level. The major challenge here is to analyse mobility culture in a European scope and still meeting the characteristics of different national and subordinated structures.

Mobility culture as a concept has gained increasing awareness in literature since the last decade. It is applied in terms of safety culture (Özkan & Lajunen, 2011 "[...] mutually inclusive and the main contributors to the differences in traffic safety between countries"), traffic climate or for explaining modal choice (e.g. Klinger, 2014). Traffic climate and safety culture take in particular the interaction between road users into account. This direct or indirect interactional element is a crucial element of mobility culture (Klinger, 2014), but mobility culture goes far beyond that:

"Mobility culture means the entirety of materially and symbolically effective forms of practice related to mobility. It includes infrastructure and spatial design as well as guiding principles and transport policy discourses, the behaviour of road users and the mobility and lifestyle orientations behind them. It refers to the processual interaction of mobility actors, infrastructures and techniques as a socio-technical system. Mobility culture can only be analysed and described in comparison to the qualities of other mobility cultures, i.e. relationally. The term mobility culture does not a priori contain any normative content - this only arises through the link with sustainability goals."
- Deffner et al. p. 15 (2006)

To conceptualize mobility culture, Deffner et al. (2006) developed a model, which combines subjective and objective factors in order to measure the characteristics of



mobility cultures on a city level and define management criteria (more in Deffner et al., 2006). Based on the model, it was possible to observe city clusters and how moving from one mobility culture to another can change mode choice (Klinger & Lazendorf, 2016). It was shown, that mobility culture varies between cities and the perception of mobility culture even with the individual mode orientations (car-oriented vs. pragmatic vs. car-free groups). The researchers developed a large set of parameters for the analysis of mobility cultures between cities and added measures for implementing changes of the prevalent cultures towards a more sustainable mobility. In REBALANCE, we lift the definition to a broader level – the European mobility culture. The influence of local or national culture on mode choice shows as well Aldred & Jungnickel (2014) who found indications that mobility culture goes beyond infrastructure and topography but as well includes norms and beliefs of the residents.

REBALANCE carries the model on a European level (see in Figure 2). We follow the idea of four dimensions of mobility culture and extend them to be applicable to a cross-national scope: A spatial, an individual subjective, a communicative and a political dimension:

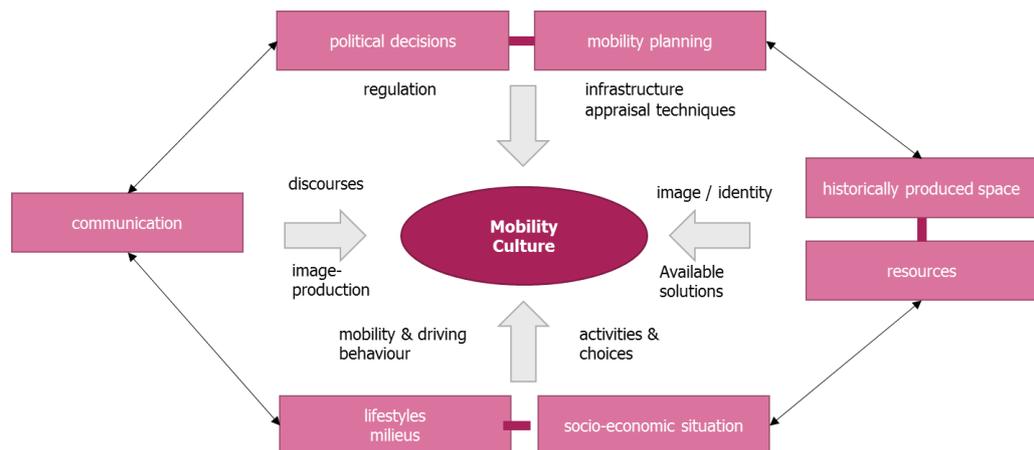


Figure 2: Mobility Culture Framework based on Deffner et al. (2006), modified and extended.

The historically produced space and resources shape mobility culture through not only infrastructure and provided modes of transport but also spatial planning, activity spaces and solutions like technical innovation and freight solutions. Whereas Deffner et al. (2006) only included the historically produced space in this dimension we add resources as a steering factor for availability of solutions. This sheds light on the fact that space is not only the concrete facts in the built environment, but also the available environmental, technical and human capital. Both turn reflect (dynamic) norms and values of a society over time.

The mobility styles describe the individual behaviours and attitudes of people who move. Attitudes and behaviour derive from different structures of values, that can even distinguish between national cultures (Schwartz, 2012). Although myriad of subcultures exist in every culture, they are rather defined as nonconformist with the broader culture (Hebdige, 1979). Mobility behaviours are performed on three hierarchical levels by their temporal impact listed in Table 2 (Schlag & Schade, 2007).



	Decision level	Behaviour	Environment	Time frame
I	Superior decisions with consequences on mobility	<ul style="list-style-type: none"> ▪ Place of residence, work, spare time ▪ Reduce/quit activities (esp. spare time) ▪ Adjust activities ▪ Vehicle ownership ▪ Type of vehicle 	<ul style="list-style-type: none"> ▪ Topology, land-use, mobility infrastructure / offers 	Long-term (rare, mostly deliberate decisions: setting the course)
II	Mobility Behaviour	<ul style="list-style-type: none"> ▪ Tour frequency ▪ Choice of transport ▪ Car pooling ▪ Route selection ▪ Trip lengths ▪ Trip combination ▪ Trip timing 	<ul style="list-style-type: none"> ▪ Mobility infrastructure / offers, ▪ Perceived options 	Medium-term (often habituated)
III	Driving Behaviour	<ul style="list-style-type: none"> ▪ Driving style ▪ Speed choice 	Driving situation	Short-term (highly habituated)

Table 2. Hierarchical structure of mobility behaviour (translated from Schlag & Schade, 2007)

On a longterm level decisions like residential choice, activity space and frequency as well as car possession are made. They are rather seldom and usually deliberate. On a medium-term level mobility behaviour like frequency of trips, mode choice and route choice are made according to infrastructure and perceived alternatives. On a short-term level driving style or speed choice are made. These decisions are highly habituated and vary according to the situation. Literature shows that long-term decisions in particular are planned decisions. According to one of the most applied concepts in explaining human behaviour, the Theory of Planned Behaviour (Ajzen, 1991), planned behaviour derives from the interaction of attitudes, norms and perceived behavioural control which form intention that can lead to behaviour. Regular decisions like mode or route choices, become habituated so that the active decision making process is replaced by repeating past behaviour. Literature indicates that in particular planned decisions follow individual value priorities. However, there are hints, that as well spontaneous 'gut decisions' intuitively follow personal value orientations (European Social Survey, 2021). No city nor country is like the other. Haustein & Nielsen (2016) clustered mobility cultures along green or price oriented modal choices. Sub-regions can be identified that have highly different positions on the path towards sustainable mobility and therefore different requirements towards European platforms and support measures, e.g. for 'Sustainable Urban Mobility Plans'. The country clusters can provide a starting point for future communication and targeting of European efforts in sustainable mobility.

Communication refers to discourses in the society. This includes societal trends like currently sustainable development, equality and equity as well as their communication



directly between individuals or via media, literature, arts, marketing and other means of discourses. These discourses can function as the mediator between the subjective and objective processes that shape mobility culture. These again have a normative and a descriptive element. Norms can be extracted from communication by its description how the majority behaves or by the implicit or explicit pressure of (assumed) expectations from an individual.

Politics and planning provide the legal frame of mobility culture and influence the practical implementation of culture in form of the built environment. In the European scope, the direct impact on planning practices is always mediated through national governments, even though mutual agreements and legislation shape national politics.

Engineering and economic approaches that try to explain mobility related behaviour traditionally are based on the assumption of the individual as rational decision maker. Often, it is difficult to understand from the outside why people show a certain behaviour. Newer approaches involve psychological models that take into account, that behaviour follows also emotional aspects. People act in order to fulfil certain goals that they consider important, that follow mostly the maximization of well-being (Prinz, Müsseler, & Rieger, 2017). In motivational psychology, this is understood as the optimization of affect by avoiding negative states. Mobility behaviour in particular can be emotionally controlled, partly impulsive (Steg, 2005). For instance, choosing the bike as a means of transport can be considered as fastest and most practical solution for a trip, but safety considerations and the wish to show-off the expensive car may dominate the decision. Here, motives determine how positively or negatively goals are evaluated and thus also whether and to what extent existing stimuli have incentive character for an action (Becker-Carus & Wendt, 2017).

The three main categories of motives are defined by Dittmar (1992) and later applied to transportation sector (e.g. Mokhtarian, 2005; Steg, 2005).

- **Instrumental motives:** As an extrinsic, rational calculation of utility (e.g. comfort, safety etc.).
- **Symbolic motives:** The social expressive meaning of the choice, that can lead to psychosocial benefits (e.g. status, power).
- **Intrinsic motives:** The emotional component of the choice as an end itself (e.g. joy of driving).

Thereby, motivation is not always unambiguous. Intraindividual conflicts between different motives can lead to instability of behaviour and subsequently cause behavioural change. These motivational differences relate directly to underlying values that are commonly sorted by their motivational goals. The following paragraphs explain the general concept of values and how they structure the core of culture.



2.3 Values as a core concept of Culture

All elements of mobility culture discussed before have one thing in common: They are all guided by basic values. Understanding culture as the shared set of values of a group finds support in most culture definitions. Societal Norms, attitudes and behaviour derive from different structures of values. Cross-cultural research shows that cultures can be distinguished by the relative importance people attribute to the values (Schwartz, 2012). Although myriad of subcultures exist in every culture, we can integrate them in the analysis as nonconformist with the broader culture (Hebdige, 1979). If the priorities or the impact of values change, a society steers towards change. Therefore, the REBALANCE approach takes a glance into the root of practices and produced space understanding underlying values and their implication for practices and context.

2.3.1 WHAT ARE VALUES?

The definitions of values are numerous and vary depending on whether they are developed in a normative way, as valid moral imperatives, or in a descriptive way, based on meanings that individuals attribute to them. Values can be conceptualized on the individual and group level (e.g. societies, cultures, and other social groups). Thus, different disciplines (e.g. psychology, sociology, and ethics) have developed somewhat different definitions of the value term.

Values at the **individual level**, which are often termed personal values (Sagiv et al., 2017) are studied mainly in psychology, although other fields including sociology, management and political science also study them. As a result, there are numerous value definitions. Oyserman (2015) refers to values as “cognitive structures that guide choices by evoking a sense of basic principles of right and wrong (e.g., moral values), a sense of priorities (e.g., personal achievement vs group good), and create a willingness to make meaning and see patterns (e.g., trust vs distrust).” Schwartz (1992, p. 21) defines (personal) values as “broad, trans-situational, desirable goals, varying in importance, that serve as guiding principles in people’s lives” and Bréchon & Gonthier (2017, p. 2) define them rather generally “as the underlying orientations adopted by individuals, the motivating forces behind their choices and actions.”

At the **group level**, values are scripts or cultural ideals held in common by members of a group; the group’s ‘social mind’ (Oyserman, 2015). Differences in these values or cultural ideals distinguish different social groups or systems. The most profound influence of values may be through the ways that they influence rules, norms, procedures within a society, and in this way structure the everyday life choices for individuals within a society. Values at the individual and at the group level influence each other.

Personal values are a central content-aspect of the self (-identity), distinct from other aspects, such as traits, motives, goals or attitudes. The following main features of values can be highlighted (cf. Schwartz, 2006):



Those values that people have actually internalized are called value orientations. In contrast, e.g. norms are socially sanctioned values that do not necessarily have to be internalized to shape behaviour. Compared to norms, value orientations have a stronger motivational force because they are behaviourally effective even in the absence of external sanctions.

2.3.2 THE CONTENT AND STRUCTURE OF VALUES

Towards the content and structure of values, different theoretical approaches exist in literature. The two most prominent theories will be introduced, hereby: The theory of basic human values by Shalom Schwartz and the post modernization theory by Ronald Inglehart.

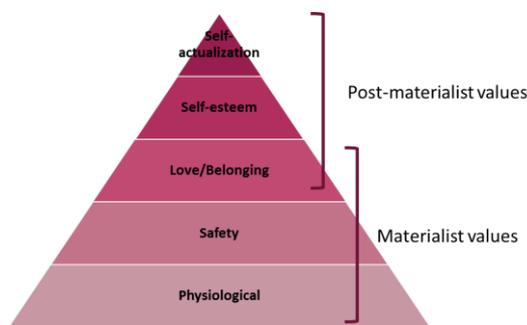


Figure 4. Hierarchy of basic needs by Maslow (1954) combined with Ingleharts Value Priority Concept (1997)

Inspired by Abraham Maslow's (1954) work on the human hierarchy of needs, Inglehart (1997) postulates the Value Priority Concept (Figure 4). The assumption that value orientations are sequentially layered on top of one another. Inglehart assumes, that materialistic values like physiological and safety needs precede post-materialist values like esteem and self-actualization needs. According to this concept, material needs must always be satisfied first before post-material needs can gain importance. They dominate people's thoughts and actions as long as

they perceive their physical survival as unsecured. When conditions arise which make material survival appear secure, post-material needs begin to unfold. Materialistic values then lose their importance and are superseded by post-materialistic ones. According to Inglehart, this means a shift in priorities away from questions of economic growth, the fight against inflation and job security towards questions of environmental protection, the creation of meaning and self-determination. Post-materialistic values manifest themselves in ecological, idealistic and emancipatory orientations.

The approach is used as a theoretical base in international value studies such as the European Value Study (EVS) or the World Value Study (WVS) comparing different cultures on a value base. The WVS represent the most comprehensive collection of data on value orientations of different cultural entities. These are representative population surveys in over eighty countries, some of which are available over a period of twenty-five years. Largely, both studies theoretically follow Inglehart's post-materialism approach and value priority concept. Inglehart's theoretical approach is essentially based on Maslow's hierarchical model, which, however, has only found unsatisfactory empirical support (e.g. Tay & Diener, 2011). Schwartz's theory of basic human values proposes a multidimensional space of values that derives from earlier work by Rokeach (1973), who aimed to develop a value hierarchy based on an universal set of values. Rokeach argued that a distinction should be made between instrumental values reflecting beliefs concerning desirable means (e.g., being honest, or "honesty") and terminal values reflecting preferable end-states of existence (e.g., a world at peace).



Schwartz refined and extended Rokeach’s universal value typology and proposed a value typology comprising 56 values. However, Schwartz’s typology no longer made a distinction between instrumental and terminal values, as he did not find empirical support for this distinction. A short version of the Schwartz value batteries has been included in the fourth wave (2008) of the combined European and World Values Studies.

There is broad, international empirical evidence for the validity of Schwartz’s model (Davidoff et al, 2008; Fontaine et al, 2008; Schwartz, 2015). The structure of the basic values is the same in different cultures and countries. This consistency indicates that the meaning of the basic values is similar across cultures. However, people may differ in the way they prioritize different values but interestingly, research found basic consensus in the structure of values. In addition Schwarz theory is compatible to the social value orientations approach (see chapter 3.4) as both emphasize the individual vs. altruistic value dimension. In sum, since a fundamental compatibility with Inglehart’s approach can be assumed, which guarantees to some extent a uniform interpretation of the value dimensions, from our point of view Schwartz’s value model is the more resilient and universal.

Schwartz (1992) suggested that values could be organized according to the motivational goals they express. Analysing the needs of individuals and the requirements for societal survival, Schwartz identified ten motivationally distinct types of values: conformity, tradition, universalism, benevolence, power, achievement, hedonism, stimulation, self-direction, and security. The first four value clusters refer to social values; while the other six clusters reflect individualistic values (see Table 3).

10 basic values Definitions of 10 basic values (in parentheses, value items)

<i>Self-Direction</i>	Independent thought and action—choosing, creating, and exploring (freedom, creativity, independent, choosing my own goals, curiosity)
<i>Stimulation</i>	Excitement, novelty, and challenge in life (exciting life, varied life, daring)
<i>Hedonism</i>	Pleasure and sensuous gratification for oneself (pleasure, enjoying life, self-indulgent)
<i>Achievement</i>	Personal success through demonstrating competence according to social standards (ambitious, capable, influential, successful)
<i>Power</i>	Social status and prestige, control or dominance over people and resources (social power, wealth, authority)
<i>Security</i>	Safety, harmony and stability of society, relationships, and self (social order, national security, family security, reciprocation of favours, clean)
<i>Conformity</i>	The restraint of actions, inclinations, and impulses that are likely to upset or harm others and violate social expectations or norms (politeness, self-discipline, respect for elders, obedient)



<i>Tradition</i>	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provides (respect for tradition, modest, humble, accepting my portion in life, devout)
<i>Benevolence</i>	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact (loyal, responsible, honest, helpful, forgiving)
<i>Universalism</i>	Understanding, appreciation, tolerance and protection for the welfare of all people and of nature (equality, unity with nature, wisdom, world of peace, world of beauty, social justice, broadminded, protecting the environment)

Table 3. Value definitions in Schwartz Value Theory (adapted from Sagiv et al.)

The 10 value clusters can be plotted in a two-dimensional space (Figure 5). Values in the same value cluster are prioritized in a similar way, while values belonging to clusters that are wide apart from each other are typically prioritized very differently. The closer the values in this two-dimensional space are located, the more compatible they are, while values that are wide apart are more likely to conflict. When values conflict in a particular situation, people most likely act upon the values they prioritize. Schwartz combines the values into four higher order values that form two basic conflicts.

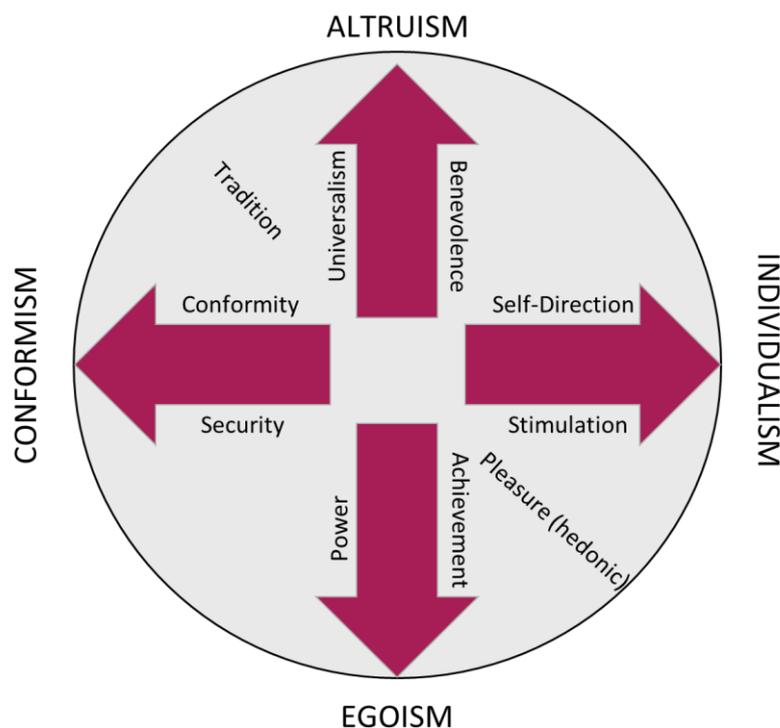


Figure 5. Schwartz's basic value typology (conceptually simplified)



The first conflict contrasts self-enhancement with self-transcendence (simplified: egoism versus altruism). Self-enhancement values emphasize the pursuit of self-interest by seeking to control people and resources (power) or by exhibiting ambition and socially recognized success (achievement). These values conflict with self-transcendence values that emphasize concern for others, demonstrating care for the welfare of those with whom one has frequent contact (benevolence) or displaying acceptance, tolerance, and concern for all people — even members of outgroups (universalism). This distinction is similar to the distinction between proself and prosocial values in the social value orientation framework, which is described below.

The second conflict contrasts openness to change with conservation values (simplified: individualism versus conformism). Openness to change values express the motivations for autonomy of thought and action (self-direction) and for novelty and excitement (stimulation). These values conflict with conservation values that express the motivations to preserve the status quo through maintaining traditional beliefs and customs (tradition), to comply with rules and with expectations of others (conformity), and to seek safety and stability (security). Pleasure represents hedonic values and share elements of both, openness to change and self-enhancement. The opposition between individualism and conformism (or collectivism) has a firm place in comparative cultural psychology (Hofstede 1980; Triandis 1995). The typology is used, for example, to describe the difference between cultures with more “independent” and those with more “interdependent” identity patterns. With predominantly independent identity patterns, people primarily define themselves as autonomous individuals and not as members of a group. This is what cultural psychologists use to establish an individualistic culture. In contrast, with predominantly interdependent identity patterns, people primarily define themselves as members of a group, which is an expression of a collectivist culture.

2.3.3 STABILITY OF VALUES OVER TIME

Values are understood as (rather) stable standards over time. Research on changing values assumes that people internalize the values the strongest that are most likely to help them to organize their experiences in a meaningful way and to cope with given living conditions (Flanagan, 1987). For this reason, values are linked to the existential living conditions and the corresponding experiences of people.

Because of their coupling to the existential living conditions, value orientations are under pressure to change when the context changes fundamentally (e.g. climate change, Covid-19 pandemic, technological proceedings). In order to be able to retain their usefulness, values have to react to such pressure to change. Changing values are therefore a cultural adjustment to changing living conditions. If the living conditions change in a similar way for large sections of the population, a directed change in values through all social classes is the logical consequence (Welzel, 2009).

There is broad consensus that a profound change in values has been observed in European and other post-industrial societies since the mid-1960s. In general, there is agreement on the point of view that the dominant trend in recent decades goes from values of docility and obedience to values of self-determination and equality. Many studies on value change stress the growing importance of freedom of choice and equality. They consistently state a so-called “emancipatory” change in values – only differing in their interpretation as “post-materialistic”, “libertarian” or as directed



towards "self-development". Many aspects of the change in values remain controversial which go beyond the scope of this deliverable and can be found in literature. The central point of the discussion is still the post-materialism thesis that Inglehart (1977) brought into the debate which states that materialistic values precede post-materialistic values but will be replaced by post-materialistic values if economic conditions have improved (and vice versa). Thus, he sees a clear relationship between economic development and an "emancipatory" change of values.

Generally, two important aspects of value change can be identified: generational vs. periodical value effects. Generational effects point to the finding that in general, young people are more post-materialistic and the elderly are more materialistic, but this is more a social constant and less evidence of a change in values. Periodical effects refer to the assumption that shifts between materialistic and post-materialistic values result from fluctuations in the economic cycle as argued above. The change of values is therefore fed both, from situational adjustments to cyclical fluctuations in living conditions and from generational adjustments to long-term improved living conditions. Both adjustments seem to follow the same logic: better living conditions in the short term lead to cyclical waves in the direction of more post-materialism and long-term better living conditions lead to generational shifts in the direction of more post-materialism. However, these assumptions are not undisputed. Other authors consider the turning away from economic orientations, which is expressed by the term post-materialism, to be misleading (e.g. Flanagan, 1987).

2.4 Social Value Orientations

A special and narrower application of the value concept is represented by social value orientations, which are often used in social dilemmas. Many of the world's most pressing problems represent social dilemmas, broadly defined as situations in which short-term self-interest is at odds with longer-term collective interests (Van Lange et al., 2013). Given the fact that in particular the trade-offs of conflicting values influence behaviour the dilemmas should have special attention.

Social value orientations are defined as an *enduring personal preference for the sharing of goods between a person and others* (Komorita & Parks, 1994). Many social conflicts can be conceptualized as a problem of dividing individual and social costs and benefits, which represent a social dilemma. In particular, there is a conflict between the short-term interests of the individual and the long-term interests of society. Social dilemmas can be described by two characteristics (cf. Dawes, 1980):

- a) The social payoff to each individual for acting in self-interest (called defecting) is higher than the payoff for acting in the interest of the collective (called cooperating), regardless what the other society members do, yet
- b) All participants are better off overall, when they cooperate, as if everyone makes the selfish choice.

Another important aspect that can be differentiated is whether the dilemma relates to the use of a common resource (use dilemma or social trap) or to the contribution to the creation or maintenance of a good (public goods dilemma or social fence). These differ mainly in the opposing distribution of the positive and negative consequences of certain



behaviours on the individual and society. While the profit is individualized in a usage dilemma, any damage to the good is socialized. For example, the use of a road benefits a driver individually. However, if there are too many vehicles in relation to the capacity of the road, they will all be stuck in a traffic jam. In the contribution dilemma, it is exactly the opposite way. In this situation one has to contribute to a good (e.g. accomplish something, give money) so that it is created or can exist. That means in this case a small negative individual consequence (e.g. tax contribution) leads to a long-term positive consequence for the group (provision of the public good e.g. a street). Overall, the structure of social dilemma situations consist of, among others, a social aspect (personal benefits vs. social costs, see above), a temporal aspect (benefit now vs. costs later) and a spatial aspect (benefits here, costs elsewhere which relates to the NIMBY-problem).

The decisive factors are now the conditions when people are ready to overcome the limits of individual rationality and to contribute to a good (i.e. to cooperate), although, for example, the benefit is not only individual but also collective (cf. Sears & Funk, 1991). Among the factors that influence cooperation in social dilemmas, in addition to the behaviour of other people and communication options, social (value) orientations have emerged as an important personal factor (Van Lange et al., 2013; Van Lange 1999). Social orientations go back to a basic model formulated by Deutsch (1958), which localizes the following basic motives:

- a) **Individualistic motive**, which denotes the intention to pursue one's own interests without considering the gain of others.
- b) **Cooperative motive**, which describes an interest in common gain and thus also in the wellbeing of the other.

A large number of studies show a clear influence of social orientations on decisions in various social dilemmas (e.g. Gärling et al., 2003; Jaensirisak, May & Wardman, 2003; Van Vugt, 1997; Van Vugt, Meertens & Van Lange, 1995,). However, as Steg & de Groot (2012) report, relationships between social value orientations and environmental beliefs, preferences, and intentions have been found generally weak, and sometimes even not significant. For example, social value orientations were not significantly related to preferences for commuting by car versus public transport (Joireman, Van Lange, & Van Vugt, 2004) and environmental behaviour (Joireman et al., 2001).

Whereas empirical evidence of the relevance of social value orientation for pro-environmental beliefs, preferences, and actions is mixed a clear effect on the acceptance of policies to mitigate the consequences of social dilemmas has been found. Jaensirisak et al. (2003) examined the influence of individual and social goals on the acceptance of road pricing. They found that people who valued personal advantages above all rejected road pricing more strongly than people who considered social goals important. In addition, they showed that congestion reductions are perceived as personal benefits, while environmental improvements are seen as societal benefits. Schade & Schlag (2003) found that people for whom social goals are important are more likely to accept price measures and expect significantly more personal benefits and fewer costs from them.



3 THE REBALANCE FRAMEWORK – THREE LEVELS OF ANALYSIS

How does REBALANCE use the value approach to rethink mobility culture and is mobility probably already shaped by many more values, than planners may take into account? Planners have to decide where to allocate scarce resources. Assuming that values influence all elements of mobility culture, we are running the risk that, if we overlook e.g. values in appraisal, fundamental imbalances may happen in planning.

In the REBALANCE framework (Figure 6), these levels of analysis have to be approached and filled with meaning to analyse the current narrative of mobility culture. Over the course of WP 3 the framework will be filled with the current narratives on all levels.

To structure the analysis of the „complex whole“ of mobility culture the Framework differentiates three levels of analysis: context, practice and values: Context is the superior level of societal changes that frame trends and developments of societal and individual practices. Contextual dynamics have the power to change social value orientations and consequently behaviour as elaborated in chapter 2.4. Practice refers to the culture forming elements, that the model in chapter 2.2, Figure 1 visualizes. The underlying values of these two levels of analysis were introduced and discussed in chapter 2.3.

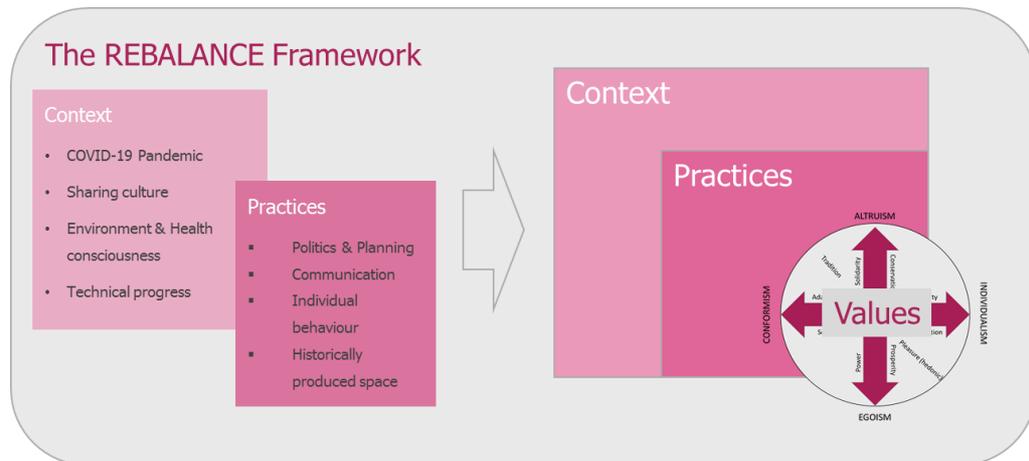


Figure 6. The REBALANCE Framework

Exemplary, it will be analysed below how the different levels of analysis interact with transport mode choice that can be located under individual behaviour practice. For transport mode choice, Schlag & Schade (2007) identified in the three different motive categories (explained in chapter 2.2) dozens of motives that are partly listed in Table 4. This overview illustrates the wide variety of different motives that are to different degrees involved in the formation of behaviour. The mutual orientation of both, values and motives, allow the application of this mobility motive structure to the Basic Value Circle (Figure 5, p. 18). Here, general values and specific mobility goals correspond very well and can be related to each other. Instrumental motives of mode choice like time and safety or the fundamental need to reach a destination mostly reflect egoistic values like achievement and power. Affective motives relate to hedonistic goals such as the



feeling of freedom or even more individualistic stimulation goals like self-activity and sense of control. Symbolic motives rather relate to conformist goals of values such as conformity through fulfilment of social norms and expectations or the power dimension between egoistic and conformist orientations.

Instrumental motives	Symbolic motives	Affective motives
Transport	Communication of status, prestige superiority, power	Freedom of choice
Reachability and accessibility	Fulfilment of social norms/expectations	Feeling of independence
Availability at any time	Social participation, contact	Sense of control, ability to plan and orientation
Time saving	Freedom of choice over privacy and contact	Self-activity (activation value),
low travel costs	Equality of opportunity in social comparison, no sense of disadvantage (equity)	Self-expression and self-esteem
Reliability	Communication of ecological, health, social benefits	
Comfort / convenience		
Security		
Safety		
Environmental, health, social benefits (or no harm)		

Table 4. Exemplary overview of motives for mode choices (extracted from Schlag & Schade , 2007)

Performing an exemplary merge of the motives with the Basic Value Circle (Figure 7) it becomes visible that, ironically, goals like solidarity in the altruistic dimension, that are mostly related to sustainable behaviour, are not taken into account, yet. Studies show indeed differences in mode choice depending on value conflict between egoistic and altruistic values;

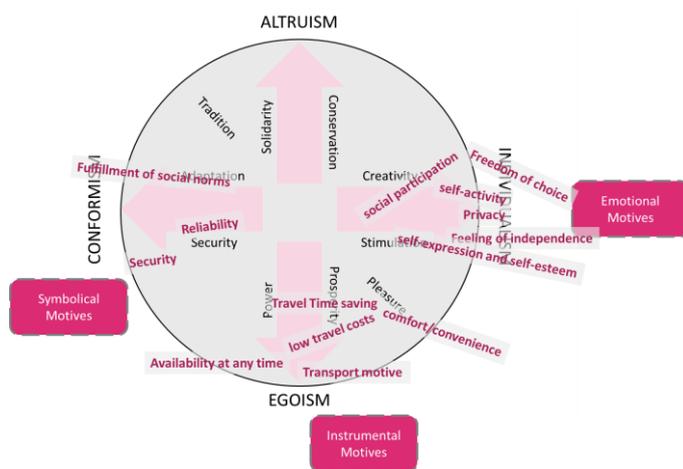


Figure 7. Exemplary merge between motive categories and the Basic Value Circle. Own work

People with a strong egoistic value orientation were less aware of the problems related to car use than those with an altruistic value orientation and those who value the environment feel more obliged to reduce the car use (de Groot et al. 2008). Similarly, many problems in mobility sector cause social dilemmas that can only be solved through cooperative behaviour (such as distribution of public space, external costs in transport and many more).



In sum the following general research questions (examples) for subsequent analysis emerge:

- Which values are under current practices prioritized (the narrative)?
- Where and which are value conflicts which may hinder or support the implementation of sustainable transport policies?
- Are there differences in values between different (e.g. social, spatial, socio-economic) groups or practices with relation to mobility behaviour?
- Where occur (internal) changes of values (e.g. the role of cars for the youth) and how do they impact on the exercise of practices (e.g. car ownership)?
- How are context conditions linked to values? Which contextual conditions serve which values or which values are challenged by current developments (e.g. pandemic)?

Further analysis of the impacts of contextual and practice changes on the current mobility culture and the underlying values will be made in the run of Work Package 3.

4 CONCLUSION

REBALANCE combines both, a descriptive culture analysis with a normative view, which is embodied in the scope of the project – the sustainability aspects of mobility culture as a claim. The descriptive levels of analysis are therefore, values, practices and the context, all under the umbrella of an (un-)sustainable orientation.

Values influence behaviour mostly, when there is a value conflict. In these settings, habituated behaviour is disrupted and it is very likely, that values are activated and become salient what leads to a behavioural decision in favour of the most prioritized value. These disruptions can be induced by societal developments as well as by individual life events. REBALANCE sheds a light on societal changes on a European level and dives into the underlying implications for values and value orientations. The framework illustrated in this report, structures the elements that form culture in order to keep track of the complex whole during the project.

The following tasks in WP3 will fill the framework with mobility-related values on all different levels of analysis within a European scope in order to illustrate the current narrative of mobility in European Union.



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