



MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„Happy Places, Happy People?

The effect of modest forms of social interaction on the
subjective quality of experience in public spaces“

verfasst von / submitted by

Lena Müller-Naendrup B.A.

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien, 2022 / Vienna 2022

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

UA 066 013

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Masterstudium
Joint Degree Programme MEi:CogSci Cognitive Science
UG2002

Betreut von / Supervisor:

Univ. Prof. Dr. Franz-Markus Peschl

Acknowledgements

There are many people to thank for accompanying me on my journey of this project. First, I would like to thank the MEi:CogSci programme coordinators for running a study programme that allowed me to explore, discover and develop my ideas and interests. A special thanks to Elisabeth Zimmerman, who always helped me with my course requests that eventually paved the way to the topic of my thesis. I would also wish to express a deep gratitude to my supervisor Univ. Prof. Dr. Franz-Markus Peschl, who not only shared his enthusiasm and knowledge with me over the past 3 years of my Cognitive Science studies but also encouraged and supported me in every step of this thesis.

Finally, I would like to thank my family and my friends for supporting and enduring all the peaks and lows of the past months. A big thank you to Laura, who was my writing partner in crime, another one to Oscar, who kindly helped me with the final touch of these pages and lastly to Benni, who jumped right in when everything started.

Table of Content

INTRODUCTION.....	- 7 -
1. THEORETICAL CONTEXTUALISATION OF HAPPY PEOPLE AND HAPPY PLACES - 10 -	
1.1. CONTEXT: HAPPY PEOPLE	- 10 -
1.1.1. <i>On the Nature of Positive Experience</i>	- 10 -
1.1.2. <i>Optimal Experience and the State of Flow</i>	- 11 -
1.1.3. <i>The Social Aspect of Positive Experiences</i>	- 13 -
1.2. CONTEXT: HAPPY PLACES	- 15 -
1.2.1. DEFINING PUBLIC SPACES	- 16 -
1.2.2. <i>Character and Role of Public Spaces</i>	- 17 -
1.2.3. <i>Quality of Public Spaces</i>	- 18 -
1.2.4. <i>Activities in Public Spaces</i>	- 20 -
2. HAPPY PEOPLE, HAPPY PLACES AND THE 4E APPROACHES TO COGNITION - 24 -	
2.1. RECENT DEVELOPMENTS IN COGNITIVE SCIENCE	- 25 -
2.2. RELEVANT KEY CONCEPTS OF THE 4Es: PHYSICAL SITUATEDNESS & SUBJECTIVE EXPERIENCE- 26 -	
2.2.1. <i>The Body as Vehicle for Experience</i>	- 27 -
2.2.2. <i>Structural Coupling: Individual & Environment</i>	- 27 -
2.2.3. <i>Participatory Sense-Making</i>	- 28 -
2.2.4. <i>Affordances</i>	- 30 -
2.2.5. <i>Take-Away Concepts</i>	- 31 -
3. POSITIVE EXPERIENCES & PUBLIC SPACE EXPERIENCE IN LIGHT OF THE 4ES - 33 -	
3.1. FLOW AS PART OF INDIVIDUAL-ENVIRONMENT RELATION	- 33 -
3.2. PUBLIC SPACE EXPERIENCE FROM WITHIN THE INDIVIDUAL-ENVIRONMENT RELATION	- 35 -
3.2.1. <i>Structural Coupling by Laws of Embodiment</i>	- 36 -
3.2.2. <i>Perceptual Attunement and Ecological Niches</i>	- 37 -
3.2.3. <i>Meaningful Experiences</i>	- 38 -
4. SUBJECTIVE EXPERIENCE IN PUBLIC: A CASE STUDY..... - 42 -	
4.1. CASE STUDY RATIONALE.....	- 42 -
4.2. METHODOLOGY	- 45 -
4.2.1. <i>Stationary Activity Mapping</i>	- 46 -
4.2.2. <i>Participant Survey and Semi-Structured Interviews</i>	- 48 -
4.3. RESULTS	- 49 -
4.3.1. <i>Results: Stationary Activity Mapping</i>	- 49 -
4.3.2. <i>Results: Participant Survey and Semi-Structured Interviews</i>	- 55 -
4.4. ANALYSIS OF CASE STUDY RESULTS.....	- 61 -
5. A SYNTHESISED MODEL OF HAPPY PLACES, HAPPY PEOPLE..... - 65 -	
5.1. DYNAMIC INDIVIDUAL-ENVIRONMENT CO-CONSTITUTION	- 66 -
5.2. PARTICIPATORY SENSE-MAKING	- 67 -
5.3. COGNITIVE NICHE CONSTRUCTION	- 69 -
5.4. AFFORDANCES: VALUE-RICH POTENTIALITIES FOR MEANINGFUL INTERACTION	- 71 -
5.5. CONNECTING THE DOTS – FROM HAPPY PLACE TO HAPPY PEOPLE	- 73 -
6. DISCUSSION AND CONCLUSION..... - 76 -	
6.1. HAPPY PLACES & HAPPY PEOPLE IN REAL-WORD CONTEXT	- 76 -

6.1.1.	<i>Public Space and Individual as one Dynamic, Co-Constituted System</i>	- 76 -
6.1.2.	<i>The Need for Open-Minded Public Spaces</i>	- 78 -
6.1.3.	<i>Public Spaces as Part of Cognitive Niches</i>	- 79 -
6.1.4.	<i>The Multilevel Influence of Modest Forms of Social Interaction</i>	- 81 -
6.2.	IMPLICATIONS OF THE HAPPY PLACE & HAPPY PEOPLE MODEL	- 83 -
6.3.	FUTURE OUTLOOK AND LAST THOUGHTS	- 85 -
REFERENCES		- 88 -
APPENDIX		- 94 -
ABSTRACT ENGLISH		- 94 -
ABSTRAKT DEUTSCH		- 95 -

Introduction

Public spaces are essential parts of cities that not just serve as public transport trajectories but also denote the character of urban life. In public spaces, people gather spontaneously, organise cultural, political or social events, pursue physical activities or just simply dwell and move around (Lloyd & Auld, 2003). The potential they carry in shaping the quality of urban life and a city's perceived liveliness is undeniable (Gehl, 2011; Jacobs, 1961; Lefebvre & Nicholson-Smith, 1991; Walzer, 1986). Support for this claim is not only recently advocated by architects and city planners but also enjoys mounting research from various fields including urban sciences, environmental psychology and cognitive science (Robinson & Pallasmaa, 2015). Furthermore, city planners, such as one of the leading urban scientists and architects Jan Gehl, particularly emphasise the active role of public spaces as medium and necessity to shape public life (Gehl, 2011). What characterises the nature of public life boils down to the observable behaviour and pursued activities in the public space or urban environment. As part of research on the nature of public and urban life, it has been demonstrated that people engage in different activities depending on the structure, social context and layout of a public space. While some public spaces tend to encourage unspecific dwelling and relaxing, others provide seemingly appealing opportunities for social gatherings and again others serve as simple functional spaces, as people just use them to quickly pass through (Gehl, 2011; Goffman, 1963; William H., 1980). Thus, different public spaces appear to encourage different pursued activities.

Yet it is difficult to deduce the qualitative experience from such observations only, further research on activities in public space, including interviews and surveys, has disclosed subjectively perceived qualitative differences in respect to the pursued activities. Among the public activities that were indicated as, for instance, most enjoyable, social activities ranked highest (Gehl, 2011; Goffman, 1963; Kytä, Broberg, Haybatollahi, & Schmidt-Thomé, 2015). People and human activity appear to be the greatest attraction to other people. In this context, *modest* forms of social interaction have been found to be among the most frequent social activities in public spaces. People seem to enjoy just being passively surrounded by others and such simplicity of seeing and hearing other people turns out to be more rewarding than many other activities in public spaces (Csikszentmihalyi, 1991; Gehl, 2011; Lloyd & Auld, 2003). Drawing on these observations, the quality of urban life arises to some degree out of social engagements.

Studying the relationship between public spaces and the quality of public life illustrates an interesting perspective on urban science research as well as research on general subjective

positive experience and well-being. As it has been argued that the layout of urban spaces correlates with the overall quality of urban life, it can also be hypothesised that the individual citizen's subjective experience and well-being increases with an overall high quality of urban life (Kytta et al., 2015). Thus, one might argue that public spaces that foster a qualitative high public life by means of the activities they afford, do also positively affect the individual user's quality of experience and general well-being (Kytta et al., 2015; Lloyd & Auld, 2003). Despite that, there appears to be a danger in policy and academic approaches to narrow the focus on negativities and thereby obscure what is positive. As a consequence, as already suggested by some experts, urban intervention projects should aim at scrutinizing what is already valuable in public space, in order to apply such knowledge in future urban design projects (Cattell, Dines, Gesler, & Curtis, 2008; William H., 1980).

A field of research that is very much in line with this argumentation, is the field of positive psychology (Seligman & Csikszentmihalyi, 2000). Originally introduced by the two psychologists Martin Seligman and Mihaly Csikszentmihalyi, positive psychology attempts to detect which cognitive, affective or environmental aspects elicit and facilitate positive experience. This approach is contradictory to classical research on well-being, as it refrains from investigating factors that decrease positive feelings and well-being only and rather focusses on motivating and flourishing factors fostering subjective well-being instead. Therefore, as the built-environment appears to play a critical role in determining our mental, physical, social and emotional well-being, research dismantling the dynamics between individual subjective positive experience with respect to the immediate surrounding environment could unveil relevant information for future urban projects and interventions. Furthermore, such an approach could shift attention to a more positive aspects driven way of analysing and re-structuring public spaces from a very human-centred subjective perspective.

The overall underlying conceptual premise holds a direct hypothesised connection between the physical layout of a space and its effect on the type of public behaviour that occurs in it. The thereby addressed human-environment relation is not recent endeavour of scientific research. Especially among cognitive scientists there exists an ongoing debate on how to dismantle the complex dynamics between an individual and the immediate surrounding (Robinson & Pallasmaa, 2015). Former theories have focussed on explaining such relation in terms of stimulus driven behavioural responses. It was assumed that individuals react on externally perceived stimuli by specifically elicited behaviours, emotions or thoughts. In contradiction to that, new paradigms in cognitive sciences have evolved stressing the equally important and constitutive parts of environment and the moving individual within this complex

relation (Bermúdez, 2014; Wilson, 2002). In this light, the external environment takes up an active role in contributing to the way an individual behaves in it. However, the relation is not unidirectional but rather emerges from a bi-directional interaction between the individual and the immediate environment. While this debate is naturally embedded in the general discussion about the nature of cognitive systems, it also stimulates new ways of considering the power and role of architectural environments. To argue that cognitive systems entail aspects of our physical and sociocultural environments means that the kinds of material spaces we create can alter our minds and capacity for emotion, behaviour and thought (M. L. Johnson, 2015). Within the field of cognitive sciences, there has recently been done a lot of research to further disentangle the exact constitution and relation between the individual and the environment. New paradigms have evolved acknowledging the physical situatedness of the interacting human and dissolving the formerly established strict separation between external world and internal mental processes (Anderson, 2003; Wilson, 2002). However, only little has been applied to the context of architectural and urban experiences. Thus, this thesis aims at further dismantling the complex human-environment relation by investigating the following research question:

How do modest forms of social interaction affect the subjective quality of experience in public spaces?

The attempt is therefore not just to reconceptualise how humans interact with the built-environment theoretically but to also analyse how the subjective quality of experience and hence overall quality of public life can be shaped and affected by the seemingly simple material and social layout of a public space.

Structure of the Thesis

The thesis follows a mainly theoretical and conceptual approach by digesting different theoretical frameworks and analysing them conceptually in the light of the research question. The thesis' structure is divided into several parts. At first, the theoretical context for positive experiences and public spaces is outlined by means of the *Theory of Flow* proposed by Csikszentmihalyi and notions of public spaces as more dynamic and creational areas as supported by Jan Gehl and Michael Walzer among others. The second part entails a more detailed introduction into recent paradigms in cognitive science that shed light on the physical situatedness of an individual, the emergence of subjective experiences and the cognitive constitution of the body, mind and environment as one coupled system. In this context, the recently postulated paradigms in cognitive science known as the 4E approaches (embedded,

extended, enabled and enacted cognition) have been chosen as theoretical ground. A primary focus is thereby put on embodied and enacted. Thirdly, the relevant theoretical concepts introduced to the research topic are applied to positive experience in form of moments of flow and urban experiences in public spaces. Following from that and in addition to the theoretical findings, a small ethnographic case study has been conducted, which is presented in the fourth part of the thesis. Through a mixed-methodology including observational mapping, participant surveys and semi-structured interviews, it is attempted to gather empirical data on how concrete public spaces are experienced and used. Lastly, a first model providing a new perspective on human-environment interactions and the emergence of subjective quality of experience in the context of modest forms of social interactions will be developed and illustrated in the fifth part of the thesis. In the preceding discussion all gathered results are interpreted and discussed in the broader context of public spaces usage and their role in shaping individual as well as overall quality of life and experience.

1. Theoretical Contextualisation of Happy People and Happy Places

1.1. Context: Happy People

1.1.1. On the Nature of Positive Experience

Contemplating about the nature of human experience, especially the essence of positive experience and well-being, constitutes a central endeavour to humanity. While this quest naturally touches upon a broad array of domains, including philosophy, psychology and cognitive science, only recently happiness has become a subject of scientific inquiry of its own (Armenta, Ruberton, & Lyubomirsky, 2015; Haybron, 2008). Following from the recovery of the World War II, psychologists became increasingly interested in monitoring and improving social change. This induced an attentional shift back to the individual and her attitudes, values and expectations as bottom-line driver for societal change. With this regained appreciation of the individual as scientific subject, measures of quality of life were created and subjective well-being emerged as a topic of scientific research (Armenta et al., 2015). One field that has particularly devoted its main focus to disentangling the nature and condition of enjoyment and happiness, is the field of positive psychology. With its offspring around the 1980, positive psychology has majorly been shaped and introduced by the two psychologists Martin Seligman and Mihaly Csikszentmihalyi (Seligman & Csikszentmihalyi, 2000). The field grounds on the premise that besides the reduction of discomfort and pain, humans require the possibilities to

engage, flourish, connect and experience meaningful and positive emotions to achieve wholesome happiness (Petermanns & Pohlmeier, 2014; Seligman & Csikszentmihalyi, 2000).

In this context, concepts such as positive experience, happiness, quality of life and well-being are often used interchangeably. However, before proceeding, closer attention has to be put on what these concepts actually refer to: Overall, *happiness* serves as an umbrella term encompassing the broad notion of “*the degree to which an individual judges the overall quality of his/her life as-a-whole favourable*” (Veenhoven, 2011, p. 399). As this definition remains relatively vague, there are several sub-categories and notions that postulate more specific approaches towards happiness. A first, clear distinction can be drawn between subjective and objective approaches towards happiness and well-being. While the latter understands happiness in terms of objective well-being as the degree to which external, objectively assessable conditions affect the individual’s quality of life, the former, including the positive psychology approach, relies on a subjective notion of happiness. Subjective well-being generally refers to an evaluation of the quality of experience and includes affective as well as cognitive components. Affective components entail the frequency of experienced emotions and cognitive components comprise people’s overall evaluations of multiple life domains including relationships, work and health (Armenta et al., 2015). Hence, within positive psychology the central concern exceeds objective conditions fostering a high quality of life and addresses subjective cognitive and emotional components of happiness (Seligman & Csikszentmihalyi, 2000). Research on subjective well-being generally views happiness as people’s self-reported evaluations of their lives and involves aspects including self-growth, engaging activities, positive relationships, meaningful experience and the ultimate state of human flourishing (Petermanns & Pohlmeier, 2014). In addition to that, within positive psychology subjective well-being is perceived as a dynamic rather than static state of mind, which is largely influenced by the active role of the individual as he or she actively seeks for rewarding and stimulating activities (Desmet & Pohlmeier, 2013; Petermanns & Pohlmeier, 2014; Seligman & Csikszentmihalyi, 2000). Due to this conception, positive psychology is chosen as main theoretical foundations for positive experience in the context of this thesis.

1.1.2. Optimal Experience and the State of Flow

One theoretical model that provides an interesting perspective in the context of the thesis’ topic of human-environment relation and the subjective quality of experience, has been formulated as the *flow model of optimal experience* by Csikszentmihalyi (Csikszentmihalyi, 1991). As the model draws on the physically situatedness of cognition as well as the subjective quality of positive

experience, it may provide insights into why people attribute importance to particular settings or features of their material environments (Malinin, 2016). Thus, the flow model has been chosen as the theoretical framework for analysing and assessing the subjective quality of experience in public spaces.

Mihaly Csikszentmihalyi attempted to empirically measure the constituents of moments, in which individuals express positive experiences, hence, report to be happy. Within the frame of flow, such happy moments are characterised by a complete absorption in what one currently does. Originally, the source of flow theory lies in the study of creative people, as Csikszentmihalyi aimed at unfolding the phenomenon of intrinsically motivated activities, also referred to as *autotelic activities* (Magyaródi & Oláh, 2015; Nakamura & Csikszentmihalyi, 2014). In order to investigate the nature and conditions of enjoyment of such autotelic activities, Csikszentmihalyi conducted interviews with individuals pursuing activities with rather salient intrinsic rewards, including chess players, rock climbers and dancers. Later, however, he also included activities, for which the extrinsic rewards themselves could justify an active activity involvement. For instance, the practice of being a surgeon comes with monetary as well as prestigious extrinsic rewards that could drive an individual to pursue becoming a surgeon. Nevertheless, Csikszentmihalyi discovered general characteristics and proximal conditions of flow experiences that manifested across work, play, intrinsically as well as extrinsically motivated activities settings. Overall, individuals reported moments of flow experience in situations, in which they were confronted with a balance of challenges and opportunities for actions appropriate for their personal skills. Furthermore, their enjoyment also stemmed from the immediate feedback they received about the progress that was being made and to which they could adjust their actions to (Nakamura & Csikszentmihalyi, 2014). Despite that, states of flow seemed to be generally characterised by ceiling levels of concentration, enjoyment and involvement, a delusional perception of time, a merging of action and awareness and a sense of self-control of own actions (Csikszentmihalyi, 1991). Together these characteristics indicate that an individual that enters a state of flow, works at his or her full capacity and establishes a balance between perceived action capacities and perceived action opportunities within the given situation (Csikszentmihalyi, 1991; Nakamura & Csikszentmihalyi, 2014; Seligman & Csikszentmihalyi, 2000).

A primary issue that comes with flow research concerns the question of how to assess and measure states of flow (Csikszentmihalyi, 1991; Ellis & Voelkl, 1994). The original flow model has been established based on wide-ranging, cross-national questionnaires and interviews with participants engaging in particularly rewarding and feedback-rich activities. In addition to

the questionnaires and interviews assessing states of flow, Csikszentmihalyi and his colleagues have integrated the Experience Sampling Method (ESM) into the research design (Ellis & Voelkl, 1994). ESM is a qualitative method that allows to collect qualitative snapshots of subjective momentary experience samples by prompting participants at randomly scheduled times during a day to briefly report on their momentary activity and quality of experience. Via this methodology, researchers sought to assess both; state measures, including cognitive, affective and motivational components, as well as situational measures entailing indices of relative challenge and skills (Nakamura & Csikszentmihalyi, 2014). Generally, flow research studies in the past have either employed an ESM study design, an interview-based approach or a mixed methodology of both. While ESM based studies aim at measuring deep flow during normal daily activities at rather seldom and randomly distributed occasions, interview-based studies mostly worked with strategically selected samples to assess deep flow in a retrospective, but more detailed manner (Nakamura & Csikszentmihalyi, 2014). Usually participants of flow research studies are asked to indicate on scale-like designed questions what they were doing when the pager signalled and how they felt at the moment. On 10-point scales they were asked to report on their perceived levels of challenge, skills, concentration, enjoyment and involvement. Based on averages deduced from these indications, states of flow are defined as any indication above a participant's average of involvement, enjoyment and concentration levels (Csikszentmihalyi, 1991). Even though, research on states of flow has developed and expanded throughout the past decades, each of the above-mentioned methods of measurements comes with limitations. While interviews as well as self-report forms rely on retrospective evaluations of states of mind and are thus prone to memory flaws and biases, the experience sampling methods can be accused of interrupting momentary states of flow (Ellis & Voelkl, 1994). Nevertheless, beside further demonstrating the universal characteristics of states of flow as defined by Csikszentmihalyi, the experience sampling methods has also shed light on the role of other factors, such as the social aspect of well-being, that affect the quality of experience (Csikszentmihalyi, 1991; Kerstetter et al., 2020; Magyaródi & Oláh, 2015). Therefore, the following part discusses the role of social aspects and life in the context of positive experiences and flow.

1.1.3. The Social Aspect of Positive Experiences

The theory of flow by Csikszentmihalyi demonstrates one of the few attempts to integrate subjective positive experience into the social, cultural and physical context, besides the internal cognitive and affective states of mind (Csikszentmihalyi, 1991; Malinin, 2016). As already

mentioned above, studies applying rather first-person approaches and the ESM method have found that especially the social aspect of a situation appears to significantly influence a person's well-being and quality of experience (Csikszentmihalyi, 1991; Kerstetter et al., 2020; Magyaródi & Oláh, 2015). Thus, as this thesis attempts to investigate the subjective quality of experience in relation to an individual physical situatedness in public spaces as well as the exposure to the social context of modest forms of social interaction, this section provides an overview of the social dimension of flow and optimal experiences.

One aspect that has repeatedly been demonstrated to largely affect the quality of life, is the company with and relation to other people. Our relations with other people, the social feedback we receive from being around other people majorly defines how we perceive ourselves (Nakamura & Csikszentmihalyi, 2014). All ESM studies as well as numerous psychological and social sciences surveys have universally demonstrated that every person feels more alive when being surrounded by other people (Larson & Csikszentmihaly, 1978; Larson, Csikszentmihaly, & Graef, 1980). When people were asked to list pleasant activities, especially activities that improve their mood, the most frequently mentioned activity turned out to be “being with other people.”, for instance (Lewinsohn & Graf, 1973). As research on optimal experience expanded, the field's focal point of analysis extended from the individual level to *shared flow* experiences within larger group activities (Nakamura & Csikszentmihalyi, 2014). In this context, it was found that people are more happy, cheerful, alert and involved in current activities, if other people are present. Furthermore, in a cross-sectional survey study on the most common solitary and social flow activities, Magyaródi and Oláh (2015) have suggested that social activities themselves can be considered as a source of flow activities. Participants indicated that during interpersonal activities, the other present person was perceived as a support to maintain concentration and involvement in the activity. Hypotheses for this phenomenon range from social contacts as form of external simulation that supports the individual to keep attention directed and to avoid mind-wandering, to social contact as form of external feedback that provides the chance for recognition and affirmation (Magyaródi & Oláh, 2015; Nakamura & Csikszentmihalyi, 2014). In one way or another, receiving impulses from others seems to imply positive experiences, especially in alternative to being alone (Csikszentmihalyi, 1991; Gehl, 2011; Magyaródi & Oláh, 2015)

From an evolutionary standpoint, it has been argued that we strive for social company, since we are biologically programmed to seek other people and consider them as the most important aspects in life (Csikszentmihalyi, 1991). Beyond that, on a more cognitive level, it is postulated that the absence of other people can be perceived as sensory deprivation, which in

turn can elicit mild disorienting symptoms. Obviously, these claims are circumscribed by individual differences, as people vary in their sensations and need for privacy and togetherness (Kerstetter et al., 2020). One of the most disturbing and stressing states of mind is an unfocused mind. Seemingly purposeless mind wandering can elicit feelings of discomfort, restlessness and emotional dissatisfaction. Instead, when the mind's attention is directed, focused and immersed in one activity, people can reach states of flow experiencing ceiling levels of concentration, involvement and enjoyment within the very activities they are currently engaging in (Csikszentmihalyi, 1991; Nakamura & Csikszentmihalyi, 2014). Without external goals, stimulation or feedback, attention easily begins to wander and thoughts become chaotic. In presence of a devastating lack of structure without any demands of attention, many people tend to reach a state of *psychic entropy*, which makes some feel incredibly restless, irritated and dissatisfied (Smallwood & Schooler, 2015). In a state of psychic entropy thoughts cannot flow and a person is stuck in one state of rumination. Thus, solitude can be experienced negatively, as the company of other people usually serves as external source that keeps attention focused and structured by means of social feedback and stimulation (Csikszentmihalyi, 1991; Smallwood & Schooler, 2015). Evidently, there is a fine line between social situations as concentration facilitators and social situations as distractors. This is as much an issue of subjectivity and personal preferences as of the degree of noise and interaction resulting from the exposure to other people (Csikszentmihalyi, 1991). Despite the unavoidable attention-craving characteristic of the human mind, on the long-term perspective, we should strive to learn to be alone. A person, who does not constantly need an exciting, stimulating external environment to enjoy the moment, has acquired an essential skill for reaching a satisfying and creative life (Csikszentmihalyi, 1991).

To conclude, social situations can affect moments of flow on various levels. Other people can serve as source of social feedback, which in itself stimulates positive experience in people. People tend to prefer to be surrounded by others compared to loneliness instead. Besides that, research has also shown that moments of flow can be shared among people and thereby even strengthened and prolonged. And lastly, social company can be considered as key external source providing structure to a focused mind and thereby enabling the basis for moments of complete absorption into activities, which characterise states of optimal experiences.

1.2. Context: Happy Places

The context of *Happy People*, as introduced above, forms one part of thesis's framework. The second pillar concerns the physical spaces we inhabit, especially the physical factors that

facilitate and enable *Happy Places*, where we feel content, safe and subjectively well. In this context, public spaces have been chosen as the physical space of interest, as they are, firstly, often defined in terms of the activities, interactions and life occurring in them (Gehl, 2011; Jacobs, 1961; Walzer, 1986), and secondly, are assumed to yield a powerful role in shaping the quality of public life, hence, subjective experience of the using individual (Cattell et al., 2008; Kytä et al., 2015). Thus, this section introduces public spaces, a context-working definition, qualitative assessments and differences of public spaces and activities observable on cities' streets, plazas and the space in between.

1.2.1. Defining Public Spaces

In the most basic sense, *public spaces* refer to spatial areas accessible and open to all people, regardless of socio-economic background, gender, race, ethnicity or age (Goffman, 1963; UN-Habitat, 2018). They can take many different forms including streets, plazas, parks, sidewalks, market squares among others (UN-Habitat, 2018). While this notion generally defines public spaces sufficiently, they have also been portrayed as key constituents of a city that fill urban gaps with life, hence, shape and affect a city's character (Gehl, 2011; Jacobs, 1961; Lefebvre & Nicholson-Smith, 1991; Walzer, 1986). The connecting and open character of a public space has not only become a point of reference for many discourses within political science, sociology and urban science but also perfectly frames the context of the present thesis. A multitude of scholars refers to public spaces as the area in a city, where people meet, mingle and come together without necessarily knowing each other or as Martin Walzer (1986) phrased it: "space we share with strangers". Thus, public spaces serve as urban areas for social interaction and mixing and thereby lay the ground for public life, including civic cultural, political activities and everyday discourse. Following from that, it has even been argued that the quantity as well as quality of public spaces largely contributes and influences the quality of urban life including mobility and general functioning of a city (Gehl, 2011; Jacobs, 1961; UN-Habitat, 2018).

In this context, how individual citizens function in and use public spaces, is an inherent characteristic of the public spaces themselves. Previous studies have shown that public spaces are widely conceived as the places, which individuals feel like visiting even though they do not know anyone or do anything in particular except to be there (Gehl, 2011). This poses a very interesting observation, as it is usually held that there are norms of expected minimal activities and obvious reasons of being in public that provide a rationale for public behaviour (Goffman, 1963). Michael Walzer (1986) provides a distinction of two types of public spaces that nicely feeds into this observation. According to his observations, there are *single-minded* and *open-minded*

public spaces. While the former is usually designed for and used by people who have a specific activity in mind such as going to work via public transport or buying something at a mall, the latter is designed for a variety of uses including unforeseeable uses. Thus, open-minded spaces are spaces lacking a pre-defined, obvious function and generally encourage people to linger and dwell. Walzer argues that these kinds of public spaces allow the establishment of mutual respect, political and civic solidarity and political as well as cultural discourse. While he evidently considers open-minded spaces as more significant for a city's character and quality of life, he does not negate the necessity of single-minded spaces either. Single-minded spaces are usually designed for convenience and facilitate everyday life. Furthermore, some people actively search for the anonymous intimacy provided by single-minded spaces, as they move through them quickly through the public. Therefore, besides connecting a city's trajectories and people that would normally not encounter each other, public spaces also leave room for dwelling without evident purposes, spontaneous social conflux and the casual flow of everyday life (Gehl, 2011; Jacobs, 1961; UN-Habitat, 2018; Walzer, 1986). Together, these characteristics amount to a city's qualitative character, cultural life and infrastructural fluidity.

1.2.2. Character and Role of Public Spaces

Besides significantly shaping a city's quality and character, public spaces are also considered to be themselves moulded by their users and the afforded activities they indulge in (Gehl, 2011). The social and physical aspect of a public space are inseparable, as any environment evolves from continuous interactions (Cattell et al., 2008; Gehl, 2011; Walzer, 1986). This notion stresses the flexible and fluid character of public spaces. Urban scientists have observed that humans act differently in different sorts of spaces. In part, this is due to what a space structurally provides to us, but also to how other people use or have used the space (Walzer, 1986). A public space's purpose, usage and quality is neither static nor rigid, but rather continuously formed by the people and activities it attracts. As Henri Lefebvre (1991) puts it, a public space is a "social product based on values and the social production of meanings". Such production of values and meaning stems from the social, cultural or physical activities arising in the very space. In the way the structure, organisation and location of public spaces affords a specific purpose of its users, its active users might perceive the space beyond its original purpose, hence, use it differently and thereby shape its character. What results, is a circular, reciprocal dynamic between a public space, its users and the occurring activities, constantly updating and adapting the space's role and function (Gehl, 2011; Lefebvre & Nicholson-Smith, 1991; Walzer, 1986). Public spaces might have been designed with specific purposes in mind, however, their eventual

usage can go beyond the expected purpose, as design, social conflux and cultural context can stimulate or repress other different aspects of attention that in turn elicit alternating behaviour. Thus, when talking about the definition of a public space, it is essential to incorporate its physical structure, design and intended purpose as well as its users within the ruling social and cultural context at present.

To conclude, in the context of the present thesis, a special focus is put on the social, creational and dynamic character of public spaces. A public space is considered as the urban area that grounds a city's social and cultural quality. Ideally, it leaves room for open, undefined activities and encounters that allow spontaneous social conflux and mixing. There are evidently many public spaces with more pre-defined functions and purpose, such as public libraries or shopping malls, which also contribute to a city's overall character. However, the open-minded notion of public spaces addresses the intimate link between a space's spatial quality, the afforded activities and the quality of experience on an individual as well as overall urban level. Thus, it perfectly draws on the main premises of this thesis, which summarises as public spaces as media for social encounters and activities.

1.2.3. Quality of Public Spaces

The qualitative assessment of a public space cuts across several dimensions including its material appearance and structure, its functionality and usage and its social and cultural value (Gehl, 2011; Rad & Ngah, 2014; Sepe, 2017a). The quality of the material appearance of a public space belongs to the architectural and urban planning dimension. Generally, it can be argued that a qualitative high public space, in this regard, comprises an overall accessibility of a space, which is further fashioned by aesthetic, hygienic as well as infrastructural form aspects (Rad & Ngah, 2014). The more accessible, clean and secure a public space is conceived, the higher citizens rate its quality of appearance and layout. Secondly, a public space's quality of its functionality refers to the way how a space is used by the public. Such qualitative assessment occurs from a socio-cultural perspective as well as on the individual's experiential level (Gehl, 2011). And lastly, the social and cultural value generated by a public space concerns to what extent the space provides a platform with the possibility to exchange, express and satisfy needs and desires as well as to mingle with different groups with different needs (Gehl, 2011; Sepe, 2017b). While there are many different indicators for a public space's quality in each distinct dimension, the observable behaviour, subjective perception and experiences of the individual users have been successfully applied as overall qualitative assessment of public spaces in the past (Gehl, 2011; Rad & Ngah, 2014; Sepe, 2017a, 2017b). The dynamic and reciprocal nature

of a public spaces invites us to hypothesise that the physical structure of a place affects the public life it affords, and such public life, in terms of pursued activities, social diversity and general functionality, in turn again shapes the structure of the space (Gehl, 2011; Goffman, 1963; Jacobs, 1961; Walzer, 1986). Thus, it appears particularly relevant to investigate the observable public life occurring in a public space when assessing its quality.

The Danish urban planner and architect Jan Gehl has conducted several urban qualitative assessments based on empirical observations and analyses of cities' physical layouts and the occurring activities and aspects of public life. As part of his studies, he came across examples for both ends of the qualitative dimension, which can be described by two types of cities found across the world. On the one end, there are numerous, typical North American or "modernized" European cities as well as suburban areas that are characterised by multi-story buildings, with long-distances in between and extensive automobile traffic. Such cities are dominated by the presence of cars over people, as the conditions for outdoor activities, including general pedestrian traffic, are very poor. The outdoor, public spaces near and between the buildings are usually large and impersonal and most residents tend to remain indoors or in private outdoor spaces, such as balconies. In contrast to that, there are cities, which' layouts are coined by reasonably low and closely spaced buildings. There, conditions are favourable for foot traffic, outdoor stays and even occasional dwelling. As distances are short, it is possible to see buildings, observe people coming and going and outdoor spaces appear to be inviting to be used. The typical, automobile-free Italian city with its crooked streets, small plazas and vibrant street life, can be considered as a model example for the lively extreme of cities (Gehl, 2011).

Both described types of cities lie on a continuous spectrum that stretches across various kinds of cities and urban infrastructures. However, it has become apparent that outdoor activities are largely dependent on the physical quality of outdoor spaces (Gehl, 1989, 2011; Sepe, 2017b). Past infrastructural projects such as establishments of traffic-free zones in existing urban areas have shown how urban interventions can significantly improve the quality of daily life and social activities in public spaces. The success has usually been measured by an increase in number of pedestrians, a lengthened average time spent outdoors and a broadened observable spectrum of activities in the respective area. An exemplary long-term study conducted in Copenhagen from 1968 to 1986 demonstrated how an improvement of outdoor physical conditions led to a significant improvement of public life and activities. Surveys recorded a tripling number of people sitting and standing outside, while it was found that the number of pedestrian streets and squares in the city centre tripled during the same period (Gehl, Thornton, & Brack, 1977). Thus, a direct connection between the quality of public spaces including very

simple physical alterations and public life quality, as in observable activities can clearly be established (Gehl, 2011; Gehl et al., 1977; Sepe, 2017b; William H., 1980).

Driven by the growing consensus on the importance of urban interventions in attempts to increase the quality of urban life, new attention has been brought to the concept of *Urban Happiness* (Kytä et al., 2015; Sepe, 2017b). Generally, urban happiness refers to the positive perception and experience people have when visiting, living in and moving through a public space, which in turn motivates them to re-visit the space and spend a prolonged period of time in the space (Sepe, 2017a). Hence, a “happy urban space” is a public space that transmits feelings of happiness, curiosity and belonging to its users. Following this trend, urban environments are increasingly analysed and designed regarding their distinctiveness and potential to create memorable sensory experiences that allow for a process of placemaking for the people that use it (Sepe, 2017a). This approach is not just circumscribed and bounded by aesthetics and functional geometry but primarily focuses on functional and symbolic interpretations of the elements that make up a place (Gehl, 2011; Sepe, 2017a). Depending on the users’ subjective perception, understanding and usage of the elements, they delineate the meaning and identity attached to the public space (Sepe, 2017a). Thus, what eventually constitutes an “urban happy space” boils down to the subjective experiences that emerge from the activities and usages of the physical space that allow for individual processes of meaning generation and place attachment (Kytä et al., 2015; Sepe, 2017a, 2017b).

The following section therefore elaborates on the different types of activities overserved and practiced in public spaces.

1.2.4. Activities in Public Spaces

Among many sociologists and urban researcher who devoted their work to analysing urban life, the Danish urban scientists Jan Gehl has majorly contributed to the field by revolving his research and work around the question of how to improve the quality of public life. Together with his wife, the psychologist Ingrid Gehl he has been one of the first researcher, who shed light on the interaction between the public life and public space. Already in the 70s, the two spent 6 months in Italy conducting hundreds of observations on small Italian plazas. Ever since then, he has become one of the leading urban planners and architects in the field of public space and life studies and has developed many methods of public life analyses (Gehl, 2021). As his central philosophy, he advocates a human-centred approach based on structured analyses of public life in public spaces to unveil and understand how we perceive, experience and live in our built-environments. Bringing together psychology, architecture and urban planning, Gehl

not just founded the urban design research and consulting firm Gehl People but also conducted numerous empirical studies on urban life across the globe. For these reasons, Jan Gehl, including his rich theoretical and empirical work has been chosen as essential reference for this thesis. Through his various observations Jan Gehl has been able to discern disparate patterns of public life and behaviour. He particularly identified different outdoor activities observable in public spaces that generally belong to three categories (Gehl, 2011):

Firstly, *necessary activities*, which are activities occurring under all exterior conditions regardless of weather or material features. Necessary activities include going to work or doing grocery shopping. Secondly, there are *optional activities*, which involve activities that are only pursued, if the outdoor conditions are favourable. Depending on the weather, available time or the structure of the public space, people optionally go for walk or enjoy sunbathing, for instance. And lastly, there are *social activities* that by definition depend on the presence of other people in the same public space (Gehl, 2011; Goffman, 1963). Social activities can range from very modest forms of social interactions, i.e. passive hearing and seeing of other people, to brief, coincidental chats and active, intentional social gatherings. Frequency as well as duration of these distinct activities observed in a public space reveal indication about the experiential quality of the given space. A space, where people tend to engage in social and optional activities rather than mere necessary activities, might offer favourable conditions and hence elicit higher quality of user experiences (Gehl, 2011; Gehl & Svarre, 2013). Such correlation between the physical qualities of a public space and the character and quality of activities in the respective space grounds a fundamental premise for urban design improvement to enhance the quality of urban life. Thus, urban planners and architects should be encouraged to create favourable exterior conditions inviting for social and optional activities (Gehl, 1989, 2011).

Furthermore, it has been observed that especially modest forms of social interactions are among the most widespread activities in public spaces. A mounting body of research and literature addresses the general function of social activities and modest forms of social interactions in the context of urban quality of cities and public spaces (Cattell et al., 2008; Gehl, 2011; Kytä et al., 2015; Sepe, 2017a). For instance, as part of several ethnographic studies in public spaces, Gehl and his colleagues have found that people usually chose squares, benches and streets, where it is possible to watch life go by (Gehl, 1969). This phenomenon is especially apparent among children play, as children tend to play more willingly in driveways and parking lots than in separate green areas (Gehl et al., 1977). Thus, the social dimension of public spaces appears to largely effect how people connect and experience their neighbourhoods and local communities as well as how they feel themselves (Cattell et al., 2008). The remaining question

is, whether there are specific features of public spaces that contribute to generating and maintaining important social networks? Or whether it is rather the casual interaction possible in public spaces that has, in itself, a direct and salient effect on the subjective qualitative experience of the space? (Cattell et al., 2008). The Canadian sociologist and social-psychologist Erving Goffman, who conducted many influential ethnographic studies on everyday life and behaviour in public spaces, highly stresses the significance of transient, fleeting and coincidental social encounters experienceable in public spaces (Goffman, 1963). Similar assumptions are held by Cattell et al. (2008), who conducted a qualitative study to examine people's everyday relationships with mundane public spaces in East London borough of Newham. By means of in-depth interviews, participants described that both, brief, momentary and more meaningful encounters in public spaces were contributing to their positive subjective experience of the space. The participants reported to experience public spaces as opportunities to escape from daily routines and passively encountering other people, which provides a sense of relief and stress reduction, thus, positively shapes the participants' subjective well-being (Cattell et al., 2008). Thus, there seems to be something that attracts people to other people and events rather than to private spaces. Modest forms of social interactions, also referred to as low-intensity contacts, therefore appear to coin experiences in public spaces positively.

While this phenomenon has been observed across various cultures and cities, the underlying mechanisms and exact reasons for the positive relationship between modest forms of social interactions and the quality of experience in public spaces have not yet been untied completely. It is reasonable to suppose that coincidental social encounters provide the first step to trigger off a variety of interpersonal relationships, thereby fostering subjective qualities of experience on the long run (Cattell et al., 2008; Goffman, 1963). In addition to that, other studies have explored the relation between the experiential quality of public spaces and their social dimensions by analysing the physical and spatial context. Cattell and Herring (2002) have postulated the role of local, physical features as vibrant street market, open residential squares and sitting-out areas in affording opportunities for casual interaction and the positive effect on the sense of community within the respective neighbourhood. Thus, as a growing body of research on the life in and form of public spaces indicates, social activities, especially modest forms of social interactions, coin the subjective experience of such spaces.

However, as the underlying dynamics between the physical space, the experiencing individual and the observable intrapersonal interactions are not yet discerned entirely, the proceeding section of the thesis delves into the matter by bridging the different constituents of the phenomenon in the context of the 4E approaches to cognition. In addition to that, public

spaces appear to be largely defined by the public life occurring in them. Through previous empirical studies, observable activities and subjective experiences have been found to reliably indicate the quality of the public space. Thus, as the overt public life in a specific public space poses an interesting analysis on the empirical level, the underlying human-environment relation requires some further elaboration on the conceptual level.

2. Happy People, Happy Places and the 4E Approaches to Cognition

Throughout the past decades of research in cognitive science and psychology, it has by now been acknowledged that the physical and material environment is critical to human cognitive processes. Among many others there are a few dominant new paradigms concerning how cognition is physically situated. They have emerged from classical cognitivist, connectionist and behaviourist perspectives. The umbrella term of 4E approach to cognition encompasses four central views considering the human-environment relation: *the embedded thesis*, stating that people are inherently embedded in their material and social environment (Malinin, 2016; Varela, Thompson, & Rosch, 1991), *the extended thesis*, holding that cognition extends on the environment beyond the human mind and that cognitive systems thereby exploit features of their immediate environment (van Dijk, Hummels, & van der Lugt, 2014; Varela et al., 1991), *the embodied thesis*, claiming cognition encompasses the mind as well as the body and the *enactive thesis* proposing that cognition is constituted through an individual's engagement with and interaction in and on the external world (Di Paolo & Thompson, 2014; Malinin, 2016). While the four perspectives differ in certain aspects and views of cognition, they instinctively intersect, as they all emerged in response to former cognitive theories that fail to account for issues such as consciousness or the mind-body dichotomy. Altogether, the 4Es view cognition as inherently situated in and dynamically connected with the immediate environment (Varela et al., 1991). The human body especially enjoys a fundamental role in shaping and modulating human cognitive processes by structurally coupling the cognizing individual with its immediate environment (Wilson, 2002). Thus, as this section attempts to elaborate on the human-environment relation by means of the physical situatedness of cognition and the individual's subjective experience in public spaces, the 4Es, in particular the embodied thesis and the enactive thesis, are outlined in the following. They are assumed to provide a promising tool to bridge and connect the nature of positive experiences and the structure and meaning of public spaces as well as the nature of urban experience. The following section, therefore, firstly elaborates on recent developments in cognitive science, describing the sources and reasons for the development of the new paradigms in cognitive science. And secondly, presents the theories' key concepts in more depth in order to provide a strong theoretical foundation for the analysis of positive subjective experiences in public spaces and the role of modest forms of social interactions.

2.1. Recent Developments in Cognitive Science

The 4E approaches to cognition encompass a rich theoretical account on the cognitive processes involved in everyday perception, experience and their relation to the physical, social and cultural environment (Kiverstein, 2012; Varela et al., 1991). The frameworks have emerged during the mid-end 20th century in response to former, more traditional accounts on human cognition. Earlier cognitive science accounts, including cognitivism among others, have conceived cognition as abstract, mental processes occurring in the brain only (Varela et al., 1991). Such accounts maintain a clear distinction between the human mind, body and world, as human cognition, hence, the mind, was viewed as a rather abstract information processor with no relevant connection to neither the perceptual nor the motor system of the human body (Wilson, 2002). In accordance with this, all cognitive processes were viewed to operate on symbolic expressions and representations about the world in a top-down, formal, computational manner. While these accounts outline a relatively explicit notion of human intelligence, the questions of meaning generation and consciousness have remained unanswered (Wilson, 2002). Intelligent behaviour presupposes an accurate symbolic representation of the world. However, there are no definite answers to where such representations are localised, and how they retrieve their meaning? Furthermore, critics have voiced the problem of consciousness, as there appears to be no connection between physical systems and the contents of subjective experiences within these traditional views of human cognition (Varela et al., 1991; Wilson, 2002). To conclude, the classical accounts in cognitive science hold that human cognition is constituted by the manipulation, storage and creation of mental representations about the world, thereby conserving a distinct separation between internal mental processes and the external physical world including the human body (Bermúdez, 2014; Kiverstein, 2012; Wilson, 2002).

Facing these explanatory gaps within the predominant computational accounts on human cognition, other theoretical stances contributing to the *cognitive turn* have started to slowly emerge at the same time around the 1980s (Anderson, 2003; Bermúdez, 2014). In contrast to classical cognitivist input-output device view of the human mind, alternative views from different cognitive branches have proposed the integration of sensory and motor functions of the body as well as an interactive situatedness in the environment into conception of the mind (Anderson, 2003; Wilson, 2002). Early theories such as William James' motor theory of perception (James, 1981), and Jean Piaget emphasis on sensorimotor abilities as groundwork for cognitive abilities (Shaffer & Kipp, 2010), initiated a fundamental shift to the human body as part of its cognitive system, thereby outlining the first premise of the embodied thesis. Among the theoretical accounts grounding the cognitive turn, there are three that majorly contributed to the theoretical

shift (Anderson, 2003; Wilson, 2002). Firstly, *ecological psychology* by framing perception as extended process beyond the mind and involving an interaction of the whole cognitive agent with its immediate environment (Wilson, 2002). Such new way of perceiving cognition, progressively comprise the extended view of cognition (Anderson, 2003; M. Heras-Escribano, 2019). Secondly, the *connectionism* account introduced the first non-symbolic explanation of cognitive processes, as it describes everyday cognition as transformation of input activation values to output activation values. Thus, in contrast to the computational view, the connectionist system relies on several networks of different nodes, which cause distinct patterns of activation depending on the stimuli (Varela et al., 1991). Thirdly, the *phenomenological tradition* presented another strong inspirational source for the new cognitive paradigms. Phenomenological studies generally attempt to unveil the nature and structure of conscious and lived experiences. As phenomenologists work on the assumption that all conscious cognitive processes are physically embodied, they clearly reject the traditional, cognitivist claim that mental processes are fundamentally different and separate from physical entities. According to this view, cognition is understood as being physically interactive, embedded in physical environments and brought to life in physical bodies (Anderson, 2003; M. Johnson, 2008) Thus, over the course of the past decades, cognitive paradigms shifted from a rather computational, logic grounded, solipsistic and Cartesian-style analysis accounts of human cognition towards a more interactive, situated, dynamic and embodied conception. As a consequence, the different 4E approaches to cognition evolved revolving precisely around the central aim to cutting across this classical brain-body-environment division (Varela et al., 1991; Wilson, 2002).

2.2. Relevant Key Concepts of the 4Es: Physical Situatedness & Subjective Experience

As response to the classical, cognitivist views on cognition different accounts and views have evolved, each addressing and introducing new concepts associated with a more embodied, enacted, embedded and enabled view of cognition. In sum, these perspectives constitute the 4E approach to cognition (Bermúdez, 2014; Varela et al., 1991). Despite the general variety among the approaches, there is an underlying consensus on the central premise that human cognition is deeply rooted in the body's dynamic interaction with the immediate social, physical as well as cultural environment it is situated in (Wilson, 2002). Naturally, this dissolves the separation between the mental and the physical, which has persisted throughout the preceding accounts on cognition. This section aims at introducing key concepts of the 4E approaches that provide

promising views on the physical situatedness of a cognising individual and the emergence of subjectively positive experiences.

2.2.1. The Body as Vehicle for Experience

Drawing on the different assumptions outlined by ecological psychology, phenomenology and connectionism, the 4E approaches compose the fundamental notion of a cognitive systems that stretches beyond the human mind. Such system includes the human body as vehicle for perception (Merleau-Ponty, 1962), lived experiences as immediate and conscious result of perception and the immediate environment as active stimulant that shapes perception and thought through dynamic interaction (van Dijk et al., 2014; Varela et al., 1991; Wilson, 2002). The embodied thesis thereby strongly emphasises and illustrates how the human body structurally constitutes cognitive processes and serves as a medium for experience (Malinin, 2016; Varela et al., 1991). The embodied characteristic of cognition is constituted by its interaction with the sensory and motor systems. Cognitive structures and processes are considered as being dependent upon the kinds of experiences that spring from having a body that moves around and thereby actively changes the immediate perception of situations. In other words, perception and action are fundamentally inseparable in lived cognition. While former representationalist accounts understood perception as information-processing problem in a world with pre-given properties, embodiment departs from conception of an active perceiver that guides his actions in a, hence, no longer pre-given world. Every local situation changes constantly according to the agent's actions and thus causing perception to be the result of the sensorimotor structures of the perceiver (Varela et al., 1991). Therefore, neither the cognitive agent nor the external environment is independent but both initiate and shape each other through dynamic *action-perception cycles* as basis for cognitive processes and perception.

2.2.2. Structural Coupling: Individual & Environment

Drawing on the embodiment premise that the body presents the primary access to experiencing the immediate environment, the embodied-enactive view of cognition puts forward the concept of *structural coupling* to describe the dynamics by which the individual and environment become structurally intertwined (Colombetti, 2010; Di Paolo & Thompson, 2014; Thompson, 2007). Phrased differently, through a recurrent and dynamic process of *structural coupling*, the agent's body becomes experientially tied to its environment and vice versa (Varela et al., 1991; Ziemke, 2001). Embodied-enactivism postulates that what an individual senses and perceives, depends

directly on the body's movements, which in turn dependent directly on what the individual senses (Colombetti, 2010; Varela et al., 1991). As an individual actively explores her surrounding, the individual continuously interacts with the environment by means of bodily engagements. Such bodily engagements elicit certain sensorimotor patterns of activity, which become explicitly linked to the events, actions or situations perceived within the external world. Over time, by virtue of re-current perception-action circles, the repeatedly elicited sensorimotor patterns form accumulating *sensorimotor contingencies* (Barsalou, 1999; M. Heras-Escribano, 2019; Thompson, 2007). As a consequence, sensorimotor contingencies can be interpreted as the laws and rules that shape the way an individual interacts with the environment and world. Such knowledge in the embodied sense, becomes inseparable from our bodies, language and perceptual, social as well as cultural history, which again contrast with the propositional notion of knowledge in former cognitive accounts. Every encounter with the same structure will elicit the same patterns of activity, although those structures will be updated and changed as consequence of the agent's continuous action-perception cycles. When a cognitive agent is structurally coupled to its environment, objects that appear to the agent are understood through the interactions they afford (Maturana & Varela, 1980; Varela et al., 1991; Ziemke, 2001). Perception and cognition, in this regard, are both enabled and constrained by laws of embodiment (Gibson, 1979; Jelic, Tieri, De Matteis, Babiloni, & Vecchiato, 2016). To conclude, the former structural separation between individual and environment has been resolved, as the two now constitute one structurally coupled system by means of an active, bodily driven, dynamic relationship (Jelic et al., 2016; Thompson, 2007).

2.2.3. Participatory Sense-Making

With the body as grounding and constitutive structure of a cognitive system, the presented new paradigms of cognition argue that the concepts by which we can relate to and make sense of our environment in meaningful ways depend on the nature of the body (De Jaegher & Di Paolo, 2007; van Dijk et al., 2014; Wilson, 2002). We successfully make sense of our external environment, if we correctly identify and respond to structures, events, actions or situations encountered. One of the most fundamental activities involved in such cognitive sense-making processes is the categorisation of concepts (Varela et al., 1991). As already mentioned, the 4E approaches foremost emerged as a rejection of the cognitivist picture to avoid the problem of meaningless concepts and, hence, attempt to provide an alternative stance on how meaning is generated. As in traditional views it remained vague how mental concepts ground their meaning by only referring to representations of the concepts themselves, embodiment, for instance,

proposes that mental concepts are grounded in the body's capacities. Thus, the body evolves from a vehicle for experience to a vehicle for meaning (Jelic et al., 2016; Robinson & Pallasmaa, 2015; Thompson, 2007). Enactivism, instead, adds to this notion by suggesting that meaning emerges from the continuous interaction between individual and environment (Di Paolo & Thompson, 2014; Dove, 2011). More specifically, *sense-making*, in this context, arises from the particular history of sensorimotor contingencies that form the individual's embodied knowledge as well as subjective perspective (M. Heras-Escribano, 2019). As we perceive the external world by means of our body, the same body elicits distinct neural activity patterns associated with the structures we encounter when manoeuvring through the very same external world. These neurophysiological re-enactments, also referred to as *sensorimotor simulations*, transform each experience into a limited set of acquired, meaningful categories (Barsalou, 1999; Varela et al., 1991). The generated categories, in form of *sensorimotor representations*, serve as cognitive structures which we can identify and to which we can respond to when encountering an exemplar of such category. This adds another layer to the embodied understanding of sense-making and perceiving objects, events and situations in a meaningful way. Meaningfulness of lived experience rather derives from what the encountered situation points to in terms of some experience than from what it immediately is. In all, mental concepts, necessary for every-day sense-making, retrieve their meaning from the neurophysiological re-enactments created as well experienced by the sensorimotor capacities of the agent's body.

Furthermore, what precedes this notion of sense-making is the enactive idea of agency (Di Paolo & Thompson, 2014; M. Heras-Escribano, 2019; Varela et al., 1991). Agency refers to the individual's capacity to autonomously generate and sustain his or her own identity. The individual takes an active and self-driven part in shaping his or her perception, experiences and behaviour (De Jaegher & Di Paolo, 2007). Through the continuously initiated bodily interactions with the environment, feedback loops between action and sensation enable a continuity of active environment exploration. For that reason, sense-making is sometimes also referred to as *participatory sense-making* (Di Paolo & Thompson, 2014; M. Heras-Escribano, 2019). Therefore, meaning, value and content perceived in the environment originates from within the system comprised by interactions between an active, self-driven individual and the immediate environment. Skilful and purposeful behaviour are responses to successful sense-making and emerge from the subjective history of interactions and accumulated mastery of sensorimotor contingencies (M. Heras-Escribano, 2019; M. L. Johnson, 2015). Every situation turns into a meaningful experience by means of the embodied knowledge evoked by sensorimotor activities and experienced through the triggered simulations (Dewey, 2005; Robinson & Pallasmaa, 2015;

Varela et al., 1991). When walking through a public park with a bench, for instance, such bench would be perceived and understood through the sensory and motor patterns associated with sitting on a bench, hence, conveying the possibility to sit on for the active perceiver. To conclude, meaning in the enacted and embodied sense is relational and demonstrated by the possibilities of experiences, an object, event or situation affords based on the active bodily exploration of the environment and the participatory sense-making processes.

2.2.4. Affordances

Another central concept that complements the notion of sense-making through the perception of possibilities for experiences afforded by an externally perceived structure, is the concept of *affordances* (Gibson, 1979; Jelic et al., 2016). The notion of *affordances* has originally been introduced by the American psychologist James J. Gibson, who majorly contributed to the field of ecological psychology. Essentially, affordances in their classical notion refer to any possibilities for action the environment offers to a perceiving organism (Gibson, 1979; Rietveld & Kiverstein, 2014). However, recently a much broader account has been introduced, integrating the concept of ecological niches and organism-specific bodily abilities into the notion affordances (Rietveld & Kiverstein, 2014). According to this view, affordances in an environment are dependent on the abilities available in the particular *ecological niche*. An ecological niche, in this context, is composed and transformed by members of the species and through their typical way of acting. This idea nicely connects to the enacted and embodied notions of cognitive agents both initiated and are shaped by their immediate environment (Merleau-Ponty, 1962; Varela et al., 1991). Every cognising individual has their own distinctive way of life, thus, engenders their own distinct history of structural coupling with the environment, which in turn shapes every-day perception and generates meaningful experiences. Therefore, the same affordance as externally perceived structure can be experienced differently depending on the cognising individual (Rietveld & Kiverstein, 2014; Varela et al., 1991).

Furthermore, a meaningful perception and engagement with an affordance not just requires the body's sensorimotor capabilities for detection but also an active exploration of the general possibilities afforded by the environment. The affordances in an environment as perceived possibilities for meaningful interaction, afford something to the individual inasmuch as the individual possesses the capacity to perceive and notice the affordances (Manuel Heras-Escribano & De Pinedo-García, 2018). Therefore, an autonomously acting, cognising individual has to acquire certain perceptual as well as motor skills to successfully detect and interact with aspects of the environment relevant for his or her desired behaviour. Such *perceptual attunement*

is acquired and learned through the continuous, recurrent interactions between individual and environment, each time generating new sensorimotor contingencies. While the bodily engagements mainly characterise the perceptual awareness, the role of social as well as cultural practices also feed into the way an individual learns to perceive and act in the immediate environment (Manuel Heras-Escribano & De Pinedo-García, 2018; Rietveld & Kiverstein, 2014). A skilled cognitive agent correctly perceives affordances and responds to them in a specific, context adequate manner. Humans, for instance, adapt their behaviour in response to the social or cultural context they find themselves in and try to align with the present norms and rules (Goffman, 1963; Rietveld & Kiverstein, 2014). As indicated by this example, affordances can entail physical as well as social, cultural or interpersonal cues (Rietveld & Kiverstein, 2014). As a result, affordances should be conceived as emergent relations between aspects of the immediate environment and the sensorimotor abilities acquired and embodied by the perceiving individual.

2.2.5. Take-Away Concepts

To sum up, comprised by the 4E approaches to cognition it has been postulated that the cognising individual's mind, body and the immediate environment are in constant mutual resonance. On this basis, a cognitive system is described by entailing the human mind, body as well as the immediate environment as equally important constitutive parts. As a consequence, the logical and definite separation between the abstract, inner, mental, cognising mind and the physical, outer, functional body and environment is dissolved. The body is viewed as a grounding structure for all cognitive processes and perception is fundamentally shaped by the body's sensorimotor engagements with the immediate environment. Through re-current, dynamic action-perception cycles, a cognitive agent is structurally coupled with its environment. These couplings are updated and changed with every encounter, hence, contribute to the dynamic, interweaved relation between environment, mind and body. As perception grounds in the body's sensorimotor engagements, the external world is experienced in meaningful ways based on elicited sensorimotor simulations of possible experiences. Thus, sense-making is defined as enactive simulation based on participatory exploration rather than propositional representation. The environment thereby affords meaningful engagements in complementary response to an individual skillful interaction with it. This idea is captured by the concept of affordances, as external cues affording possibilities for experiences that stresses the reciprocal specification and selection between an individual and the immediate social, cultural and physical environment. Thus, concepts including *structural coupling*, *sensorimotor engagements*, *participatory sense-*

making, perceptual attunement and *affordances* have been chosen as a conceptual basis for this investigation. As they provide promising accounts on the physical situatedness and subjective quality of experience of a cognising individual, they will be applied to the more concrete context of studying observable public life in public spaces.

3. Positive Experiences & Public Space Experience in Light of the 4Es

The previous section has delved into theoretical frameworks addressing the physical situatedness of the cognising individual and the relation to his or her subjective experiences. It has been deduced how new paradigms in cognitive sciences, such as the 4E approaches to cognition, postulate the notion of a dynamic relation between the individual and the immediate environment that integrates the mind, body as well as the environment. On this basis, the derived theoretical conceptualisation holds that the individual becomes *structurally coupled* with the environment, as he or she continuously interacts with it by means of *sensorimotor engagements*. These circular dynamics lead to a subjective *perceptual attunement* allowing the individual to engage in *participatory sense-making*, as it perceives *affordances* provided by the environment that offer relevant possibilities of meaningful experiences. While this conceptualisation has already been well-established drawing primarily on the embodied and enacted cognitive frameworks, this section attempts to re-interpret it in the context of the subjective quality of public space experiences. Furthermore, the nature of positive experience has been theoretically conceptualised in terms of Csikszentmihalyi's theory of flow and optimal experiences. As positive experience in public spaces constitute the central inquiries of the thesis, the theoretical underpinning of the theory of flow are also integrated into the embodied and enacted theoretical conceptualisation in the following.

3.1. Flow as Part of Individual-Environment Relation

As described in one of the preceding sections, moments of flow and optimal experiences arise when an individual perceives a current activity as completely absorbing. Such experience results from the subjective perception of both; external opportunities and internal capacities for meaningful action in an equally balanced way (Csikszentmihalyi, 1991). Research on optimal experience and states of flow has thereby not only yielded promising insights into the nature of positive human experience but also brought about a shift of emphasis on the dynamic system composed of an individual and its environment. It has already been argued that flow theory is closely related to the concept of dynamic interactionism, as both views define the persistent and bilateral interaction between an individual and the given situation as essentially forming component of human behaviour. According to dynamic interactionism, the individual and the immediate context compose a dynamic system, in which the subjective experience of an activity is equally shaped by the tasks and opportunities raised by the environment and the individual's

cognitive, affective as well as sensorimotor response to it (Magyaródi & Oláh, 2015). As dynamic interactionism shares its central premise with the 4E approaches to cognition, the flow theory can also be reinterpreted in the context of the delineated embodied and enacted conceptualisation of the individual-environment relation. The way the three constitutive parts of mind, body and environment shape and elicit optimal experiences and flow moments clearly aligns with the notion of one dynamic system of a structurally coupled individual and environment by means of bodily engagements. Furthermore, the subjective perception of opportunities for actions has been postulated as key determinant for meaningful lived human experiences. Opportunities for actions and experiences are afforded by structures of the external environment, though only perceived in combination with the individual's possession of relevant capacities for such actions, which in turn have been developed throughout previous interactions and experiences (Rietveld & Kiverstein, 2014). Thus, the dismantling process of sensorimotor activity patterns, structural coupling with external structures and the consequent embodied knowledge not just grounds general lived human experience but also optimal experiences. Consequently, what manifests as an experience is the result of information that is selectively attended to and the perceived possibilities for actions. The flow model thereby rejects the idea of any objectively defined body of information or any pre-existing intentional structure that drives and motivates an individual. In contrast, it claims that the subjectively perceived challenges and subjectively emerged skills are the key drivers that shape the quality of a person's experience (Csikszentmihalyi, 1991; Nakamura & Csikszentmihalyi, 2014). Essentially, the social and cultural context, immediate situation and physical environment form and influence the subjective experience of the individual through the system's coupled action-response circles.

Conceiving optimal experiences as a result of dynamic and equally contributing interactions between the cognising individual, its body and the present environment poses significant insights as well as ostensible challenges. Following the embodied-enacted view, the nature of positive experiences appears to be manifold and traces back to internal cognitive as well as affective factors as well as external, structural and social aspects. Therefore, flow and optimal experiences should be examined in the context of social dynamics and interpersonal activities as well as embedded in the psychology of the individual. It has been found that the presence of another person can largely influence the maintenance of flow, as social partners might serve as a source of control and feedback (Magyaródi & Oláh, 2015).

In addition to that, another consequence that succeeds, involves the emphasis on the embeddedness of positive experiences in the immediate surrounding environment and thereby bridges the field of cognitive psychology with architecture and urban design. In the light of the

4E approaches and the question of how well-being and positive emotions can be fostered, the physical environment moves beyond its classical, objective considerations as sheltering and clean space and takes up an activating and dynamic function. Physical environments can hence be regarded as platforms that can facilitate and foster the occurrence of meaningful activities and experiences for the individual and play a significant role in moments of flow and optimal experiences (Petermanns & Pohlmeier, 2014). Experiencing an environment positively depends on what the individual is able to do with it and it. This calls for a more people-centred approach in architecture and urban design (Petermanns & Pohlmeier, 2014; Robinson & Pallasmaa, 2015). One exemplary attempt to bring together research on positive experiences, flow and subjective well-being and forms and effects of physical design, is the *Positive Design Framework* that has been formulated by the two Dutch researcher Anna Pohlmeier and Pieter Desmet (Desmet & Pohlmeier, 2013). The framework generally combines three key aspects of positive experiences, namely pleasure, personal significance and virtue, with structural design elements. However, above all it evokes the notion of positive experiences as human flourishing and meaningful activities as being closely tied to the physical environment. It thereby further feeds into the embodied notion of flow that amalgamates the human body, mind and the immediate environment and primes a promising ground for further research and design initiatives (Desmet & Pohlmeier, 2013; Petermanns & Pohlmeier, 2014).

To conclude, examining moments of flow within the framework of the proposed embodied-enacted view of cognition, draws attention to the contextual influences on subjective experiences. Rather than considering positive moods and experiences as emerging from internal cognitive affective processes only, such view highlights the dynamics between the individual and its immediate environment. Thus, the physical situatedness as well as the socio-cultural context do equally contribute to an individual's state of experiences and mood. Previous research in this context has already demonstrated that the social context particularly seems to influence the subjective quality of experiences. However, the exact modes of social interaction and cognitive underpinnings triggering positive experiences still remain relatively vague and are hence subject of further investigation in the following sections.

3.2. Public Space Experience from within the Individual-Environment Relation

The 4E approaches to cognition by definition consider the built as well as natural environment as a constitutive part of our cognitive systems (Varela et al., 1991; Ziemke, 2001). However,

accepting that human cognition includes aspects of our social, cultural and physical environments implies acknowledging the active role of such environments in shaping who we are and who we might become. The enacted and embodied human exists and lives only in the context; in the social and cultural context and in the context of the places he or she inhabits. Thus, the built-environment, among other factors, carries the capacity to contribute to human and ecological well-being and flourishing (Robinson & Pallasmaa, 2015). While this dynamic and reciprocal relationship has already been well-established within theoretical frameworks of the 4E approaches, it appears relevant to re-interpret and apply it in the context of our built-environments.

3.2.1. Structural Coupling by Laws of Embodiment

Earlier, drawing on the embodiment and enactivism thesis, it has been argued that everything we are, feel, perceive and think occurs as a consequence of our embodied transactions and sensorimotor engagements with our physical surroundings (Colombetti, 2010; Robinson & Pallasmaa, 2015; Thompson, 2007; Varela et al., 1991). We become structurally coupled with our environment, as we act in, act on and interact with it by the laws of embodiment (Colombetti, 2010; Jelic et al., 2016). A concert of psychologists, philosophers, neuroscientists as well as architects affirms an embodied-enacted view of cognition as such is even necessary to fully comprehend how humans perceive, experience and interact with the built-environment. Already the earliest manifestations in architecture have acknowledged the corporeal involvements in experiencing spaces and buildings (M. L. Johnson, 2015; Merleau-Ponty, 1962; Robinson & Pallasmaa, 2015). The philosopher Mark L. Johnson, a strong advocate of the embodiment framework, argues that without the embodied view, we fail to understand and explain the power and importance of the built-environment (M. L. Johnson, 2015). Only by acknowledging the enacting role of the perceiving individual driven by his or her embodied engagements, we possess the means to account for meaningful interactions and experiences within the particular, experienced environment we are situated in.

This can be nicely illustrated by the example of how babies learn about the laws of the physical world. We are constrained by the physical, temporal, geographical limits of our bodies as well as the external physical world. Such meaning of containment has to be acquired and is learned in intimate bodily ways of visceral sense and sensory-motor activities (Robinson & Pallasmaa, 2015; Shaffer & Kipp, 2010). Knowledge about the physical constraints and the meaning of containment involves gravity, relational distances, balance and the rules of motion, for instance, is generally referred to as *spatial* or *ecological logic* (Robinson & Pallasmaa, 2015).

Babies acquire such knowledge as they play with physical objects (e.g. boxes, toys, balls,...) and thereby experience through their bodily engagements with the objects the spatial relations of such objects. It is this embodied *ecological logic* that foremost unfolds architectural experiences (M. L. Johnson, 2015). Only through the experiential coupling of sensorimotor engagements with the physical structures of the external environment, we acquire the capacities in form of a skilful mastery to detect the perceptual qualities and interaction possibilities afforded by the built-environment. Thus, the embodied-enacted notion of re-current sensorimotor activations that continuously shape and update our perceptual and motor skills grounds the base for meaningful interactions and experiences with and in the built-environment (Barsalou, 1999; Robinson & Pallasmaa, 2015; Varela et al., 1991).

3.2.2. Perceptual Attunement and Ecological Niches

The embodied transactions not only provide us with the means to explore, process and learn about the immediate environments but also to accumulate past experiences to embodied knowledge about the external world including its laws and norms (Robinson & Pallasmaa, 2015; Varela et al., 1991). Every single past, present and future interaction with the environment, through which we cognitively couple sensorimotor patterns with external stimuli and interactions, thereby forms and contributes to such embodied knowledge (M. L. Johnson, 2015; Rietveld & Kiverstein, 2014). Our past lived experiences become sedimented in our embodied engagements, priming us to respond appropriately to particularities encountered in the immediate environment (Kiverstein, 2012). It is important to note that the built-environment, especially public spaces, in this sense exceed the notion of physical containers and geographical areas and rather embrace all sociocultural practices, social activities and individual interactions and routines afforded by the space. Rietveld, in this context, highlights the social and cultural context-dependency of individuals' cognitive and overt behaviour (Rietveld & Kiverstein, 2014). He argues that human beings develop and acquire a notion of *situated normativity* that guides their skilled interaction with the cultural, social and physical environment they are embedded in. As *situated normativity*, he defines skilled engagements with the environment in a very specific and concrete context, also referred to as *ecological niche*. As human beings share their living contexts with other people, the continuous adjustments and adaption of the learned engagements and patterns of behaviour are mostly dependent on what other members of the same ecological niche do (Rietveld & Kiverstein, 2014). Individuals inhabiting and using the same ecological niche collectively share a particular *form of life*. This *form of life* entails all behavioural patterns, sociocultural practices, norms and rituals that characterises every interaction within the shared

ecological niche (Gibson, 1979; Rietveld & Kiverstein, 2014). Even though the *form of life* is genuinely available to all members of the ecological niche, its content has to be acquired by every individual independently. Thus, social feedback poses a central mechanism in the accumulation processes of embodied knowledge of the available *form of life* that shapes the individual's interaction with the immediate environment (Gibson, 1979; Rietveld & Kiverstein, 2014). Goffman (1963) expands on this assumption by arguing that every social norm and behaviour is acquired through every-day face-to-face interaction in immediate contexts of life. It is the triangular relation between the cognising individual that encounters another social individual in a specific environment through which certain engagements and behaviours are elicited recurrently and manifest as embodied sociocultural and motor knowledge (Gibson, 1979; Rietveld & Kiverstein, 2014; Varela et al., 1991). Eventually, we acquire a highly context-dependent, subjective perceptual attunement that enables us to perceive, process and interact with our immediate environment in adequate meaningful ways. Furthermore, the evolved and matured perceptual attunement is shaped by characteristics of the ecological niche. Only what is available offered by the form of life defining the ecological niche and only what is normatively situated in this very niche, is perceivable to a perceptually fine-tuned, structurally coupled individual (Gibson, 1979; Rietveld & Kiverstein, 2014).

3.2.3. Meaningful Experiences

The meaningfulness of any experience is determined by the successfully matched way, in which an individual firstly, perceives a possibility for experience, secondly, knows how to adequately engage with the afforded possibility, and thirdly, achieves to successfully interact with it by laws of his or her subjective embodied knowledge (Csikszentmihalyi, 1991; Gibson, 1979; Robinson & Pallasmaa, 2015; Varela et al., 1991). It has been outlined how an individual perceives the external world in meaningful and positive terms as he or she engages in a process of *participatory sense-making* (Colombetti, 2010; M. Heras-Escribano, 2019; Thompson, 2007). By means of active exploration and bodily engagements with the immediate surrounding, embodied knowledge about the structures, norms and rules relevant to the given context is gradually acquired (Jelic et al., 2016; Malinin, 2016). Drawing on this knowledge, the individual is consequently able to perceive and detect possibilities for meaningful experience relevant to his or her subjective motivations as well as the available in the ecological niche available in the environment (Gibson, 1979; Rietveld & Kiverstein, 2014). Thus, the individual gradually but actively acquires the knowledge relevant for sense-making and meaningful experiences. Perceiving something as reasonable and sensible corresponds to perceiving something as

meaningful, which in turn grounds the prerequisite for positive experiences (Kiverstein, 2012; Robinson & Pallasmaa, 2015). Only activities that match our skills, desires, needs and expectations pave the way for positive experiences (Seligman & Csikszentmihalyi, 2000). Thus, a meaningful, hence, potentially positive experience is predicted on an awareness of what such experience might entail and which function, desire and need it should serve. As elaborated above, such awareness we discern through the bodily engagements, transactions with and the feedback we receive from our surrounding context (Csikszentmihalyi, 1991; Gibson, 1979; Rietveld & Kiverstein, 2014). Thus, past experiences accumulated as embodied knowledge yield the meaningful experiences of the presence (Robinson & Pallasmaa, 2015; Seligman & Csikszentmihalyi, 2000; Varela et al., 1991).

The nature of meaningfulness in the context of built-environments inherently draws on this enactive, circular and embedded notion of participatory sense-making. Built-environments are meant to serve both; our fundamental need for physical habitation as well as our inherent, embodied desire to grow and flourish (Robinson & Pallasmaa, 2015). We strive to feel “at home” as well as we pursue personal growth within our quotidian activities, movements and social interactions (M. L. Johnson, 2015). We experience rooms, buildings and public spaces meaningfully and positively in coherence with what kind of experience they afford us. As we can perceive an environment as sheltering and hospitable, because they trigger familiar sensorimotor activities, we might elicit positive associations with such spaces. The same applies to the second source of meaningful experiences within our built-environments, the embodied desire for personal growth and flourishing. If physical spaces provide us with the opportunities to encounter meaningful social encounters, engage in in challenging activities and connect to the physical, social as well as cultural environment, they might evoke moments of positive experiences and flow (Dewey, 2005; Nakamura & Csikszentmihalyi, 2014; Robinson & Pallasmaa, 2015).

Furthermore, built-environments, including urban spaces as well as single architectural buildings, are located at the intersection of where we learn about and experience meaningfulness as well as where we feed such embodied knowledge back into the built-environment by shaping and constructing it in ways that preferably enhance the experience of meaningfulness (Robinson & Pallasmaa, 2015). Within an iterative circularity, we shape and fabricate environments, that affect and shape us, which in turn shape the way we construct them prospectively. Sense-making, in this sense, also draws on our ability to fabricate structures and to transform materials we find in nature in accordance with our knowledge, desires and needs. We thus, not just belong to a specific ecological niche characterised by a certain form of life but are also able to construct

our own cognitive niche of desirable forms of life, including positive experience eliciting ways of interaction (Gibson, 1979; Malinin, 2016). Following from that, through being in, or inhabiting the built-environments surrounding us, we experience as well as create them in the most intimate, embodied and situated manner (Merleau-Ponty, 1962). Meaning, not only originates through the explorative interaction of the individual with the built-environment but is also constitutively embodied in the physical structure itself (Robinson & Pallasmaa, 2015). Such embodied meaningfulness surfaces in form of the *affordances* already mentioned and in doing so, invites for possibilities of experience, both actual and simulated (Gibson, 1979; Rietveld & Kiverstein, 2014).

Essentially, the objects, structures, events and encounters that populate our world stimulate us with their meaningful experiences as we actively engage with them (M. L. Johnson, 2015; Rietveld & Kiverstein, 2014). What appears to connect positive experiences as meaningful encounters with and in our immediate environments with the way such environments are physically built, are the opportunities of interactions afforded by these built-environments. Thus, a key concept in the embodied re-interpretation of positive experience and urban experience manifests as the concept of *affordances*, which has already been introduced earlier as a central concept of the embodiment framework. Affordances inherently embody an active and bilateral relationship between the cognising individual and his or her immediate environment (Gibson, 1979; Rietveld & Kiverstein, 2014). Essentially, through affordances that constitute the contexts and environment we inhabit and live in, we simultaneously shape not just the environment itself but also the kind of experiences we encounter in it (Varela et al., 1991). The physical structures that constitute our environments are continuously adapted to the roles, actions and functions we enact, as we live, work, eat, place, socialise, sleep and flourish in them. Furthermore, the meaning that originates from the interaction with affordance goes beyond what they point to in terms of physical perception and motor interactions. Such meaningfulness also draws on the social functions, cultural values and practices that are associated with the structures, objects, events and actions that constitute our living contexts and how they define their usage and significance (Robinson & Pallasmaa, 2015). Thus, social contexts, including the daily social encounters, norms, values and relationships we establish, are a fundamental part of the circular, dynamic relationship between built-environments, meaningful experiences and the resulting quality of experience. Besides that, the meaningfulness arising from this circular relation involves a mix of publicly shared meaning and individual, subjective past experiences formed by perceptual awareness, sensorimotor stimulations and an accumulation of embodied knowledge (Robinson & Pallasmaa, 2015; Varela et al., 1991).

To conclude, urban, built-environments serve a two-folded way to meaningfulness. Firstly, they allow us to locate ourselves in them and feel “at home” by generating a sense of what surrounds us and how we relate to it. And secondly, they provide physical, social as well as cultural affordances that are meaningful for our survival as well as our desired flourishing, as we are shelter- and meaning-seeking creatures. Urban environments, such as public spaces, are therefore an integrated part of the circular, bilateral relationship between the cognising individual, his or her body and the subjective quality of experience arising from this interaction. It is especially the embeddedness, embodiedness and enacted dynamic relation between all the components that coins the complexity of human-environment relationships and the resulting quality of experience.

4. Subjective Experience in Public: A Case Study

As illustrated above, the thesis aims at scrutinising the dynamics between the subjective quality of experience in public spaces and modest forms of social interactions by following an inherently interdisciplinary approach drawing on concepts from positive psychology, cognitive science and urban science. By means of a critical conjunction of the theory of flow (Csikszentmihalyi, 1991) and the 4E approaches to cognition (Di Paolo & Thompson, 2014; Malinin, 2016; Varela et al., 1991), a theoretical attempt to explain the underlying dynamics of human experiences, the quality of experience and the physical environment has been formulated in the preceding sections. As the topic deals with individuals' subjective experiences in urban public spaces, a small ethnographic case study was conducted to feed into the theory and hence ground the thesis's findings in real-world contextual data. Thus, this section outlines the methodological steps, derived results and interpretation of the case study's results in light of the thesis's context.

Based on the reviewed literature, previous studies and the different theoretical pillars of the thesis, the following working hypotheses were developed to be tested by means of the case study:

- i. People intentionally chose public spaces for dwelling and being alone.
- ii. Many people engaging in modest forms of social interactions such as observing and hearing other people can be observed in public spaces.
- iii. People experience relatively high levels of enjoyment, concentration and engagement, while being in public spaces.
- iv. Public spaces are considered as possibilities to be surrounded by other people and to thereby receive external stimulation and social feedback.

4.1. Case Study Rationale

The thesis' topic deals with several levels of analysis: Firstly, the phenomenon of increased quality of experience when being surrounded by other people naturally touches upon the level of larger social dimensions and group dynamics. Secondly, as public spaces are chosen as a focus point of analysis, another level encompasses the general context of the urban environment including culture, socio-economic background and the physical layout. And lastly, the individual including a first-person subjective experience presents the last, though most essential level of

analysis to the thesis' endeavour. Rather recently, the role of case studies, especially those with an ethnographical approach, has been reconsidered and discussed as complementary to theoretical research. In the context of urban science studies, ethnographic case studies are utilised to reveal the processes and patterns of how human agency shapes as well as is shaped by larger structures (Leitner, Peck, & Sheppard, 2020). Thus, they are especially applied when several levels of analysis, including macro as well as micro perspectives, constitute elements of the research's inquiry (Leitner et al., 2020). In addition to that, the British sociologist Michael Burawoy (1998) has further advocated the use of case studies as integrative part to theoretical investigation that would not just extend the explanatory scope of the research but would also improve the theory itself (Burawoy, 1998; Gehl & Svarre, 2013). Following this argumentation, the case study is integrated into the thesis' investigation as a complementary part to the theoretical model.

The implementation occurred by means of a mixed-methods approach (Gehl & Svarre, 2013) entailing ethnographic observations, a participant survey and semi-structured, open-ended interviews. Each of these methodological steps will be explained in more detail in a following section. Two centrally located public spaces in Vienna were chosen as investigation sites: The *Wiental Terraces* in the 5th district and the *Alois-Drasche Park*, which is located in the 4th district of Vienna. In general, the two sites were chosen along criteria such as feasible size, demographic and social diversity and accessibility. Despite that, the Wiental terraces were particularly considered, as the space has only recently been opened as part of an urban transformation project in 2015. The project's aim was an enlargement of public spaces in Vienna's densely populated 5th district. Furthermore, the wooden terraces construction with sporadic green plants and seating areas elevates above the metro line 4 and is meant to invite people for casual dwelling and lingering (Tillner & Willinger, 2021; Wien, 2021). Thus, it perfectly matches Walzer's previously mentioned definition of an open-minded space that does not impose any predefined activity or function to the individual (Walzer, 1986).



Photo 1: Wiental Terraces (Source: <https://www.fcp.at/en/projects/details/wiental-terrace>)

The second site, Alois-Drasche Park, encompasses an old Viennese park that is embedded in and surrounded by the historic-secessionist facades of the 4th district. It stretches across a 1,6 hectare green area with a playground, a basketball court, several benches and a free green field pervaded by several foot paths. The park resides in the middle of a residential area with a few schools and offices in close proximity. Thus, it is usually used by a socially and demographically diverse group of people. Even though the playground and basketball court do account for a relatively large area of the park, they were excluded from the observations in advance. As playgrounds and sport courts offer relatively straightforward and pre-defined activities and are usually used intentionally and within social groups, they do not constitute a relevant research ground for the context of this investigation. Despite the fact that the relation between the spatial features, the social value and the quality of experience of playgrounds and public sport courts can yield a highly interesting scientific inquiry itself, it would exceed the scope of this thesis at hand. Thus, at the case study site of the Alois-Drasche Park the data collection focused on the paths with the benches and the free green field.



Photo 2: Alois-Drasche Park (Source: Lena Müller-Naendrup)

4.2. Methodology

Urban studies and public life studies are inherently interdisciplinary fields that naturally ask for a methodology to reflect the variety and complexity of the topic (Leitner et al., 2020). Thus, in order to obtain relevant data to test the stated hypotheses and support the model generated, a mixed-methods approach divided into two parts was applied. At first, ethnographic observations in form of a *stationary activity mapping protocol* provided by the public life toolbox of *Gehl People* (Gehl, 2021) were conducted. *Gehl People* is an urban design and research consultancy. Following the philosophy of the Danish architect and urban researcher Jan Gehl, Gehl people offer expertise in the field of architecture, urban design, landscape architecture, and city planning. By means of a people-focused approach, the company addresses global trends, utilising empirical analysis techniques to unveil how the built-environment can promote well-being (Gehl, 2011).

4.2.1. Stationary Activity Mapping

The first part of the investigation entailed a behaviour mapping by means of the open-sources *stationary activity mapping* protocol provided by Gehl People. Behavioural or stationary activity mapping is typically applied to indicate where people are sitting, standing or moving in a place. It is thought to yield a momentary picture of the life of a place. The rationale of this method holds that only by knowing what is already occurring and present in a public space, it is possible to improve it and hence promote well-being (Gehl, 2021; Gehl & Svarre, 2013).

The mapping occurred over the course of several days and the momentary maps were created at different times of the day. Equipped with a map of the space and a transparent foil, it was noted and mapped *how many* people were present in the space, *what* the people were doing and whether they were there *alone* or in *social company* at the given time. During the process, the researcher did not take any active or interfering role. Maps of the two locations were retrieved from the open-source database of the city of Vienna's local website.

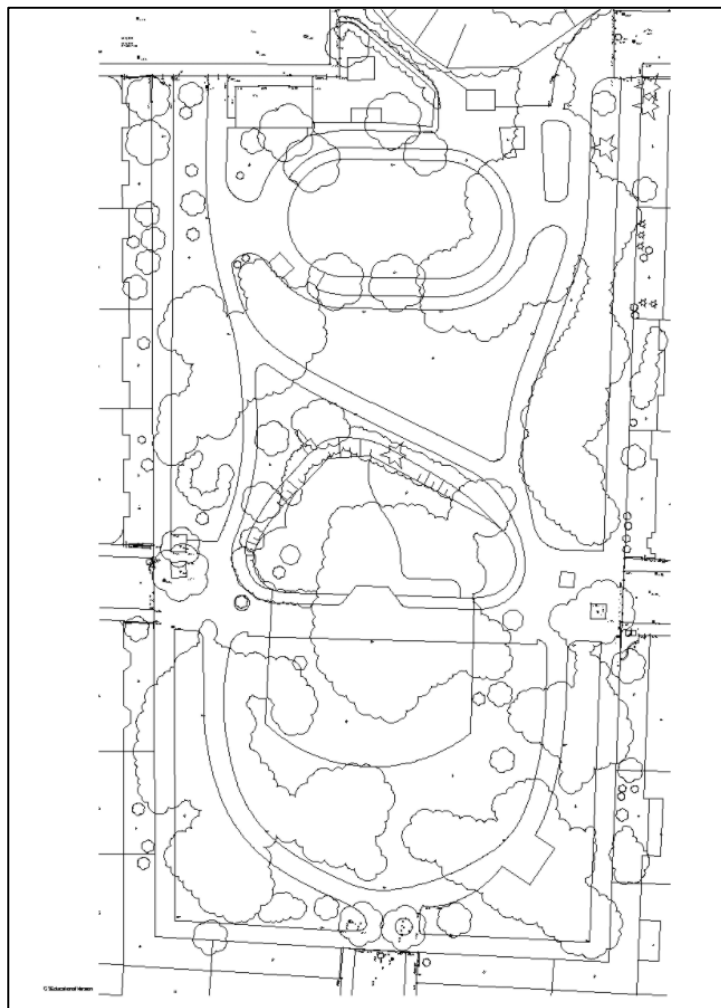


Image 3: Map Alois-Drasche Park

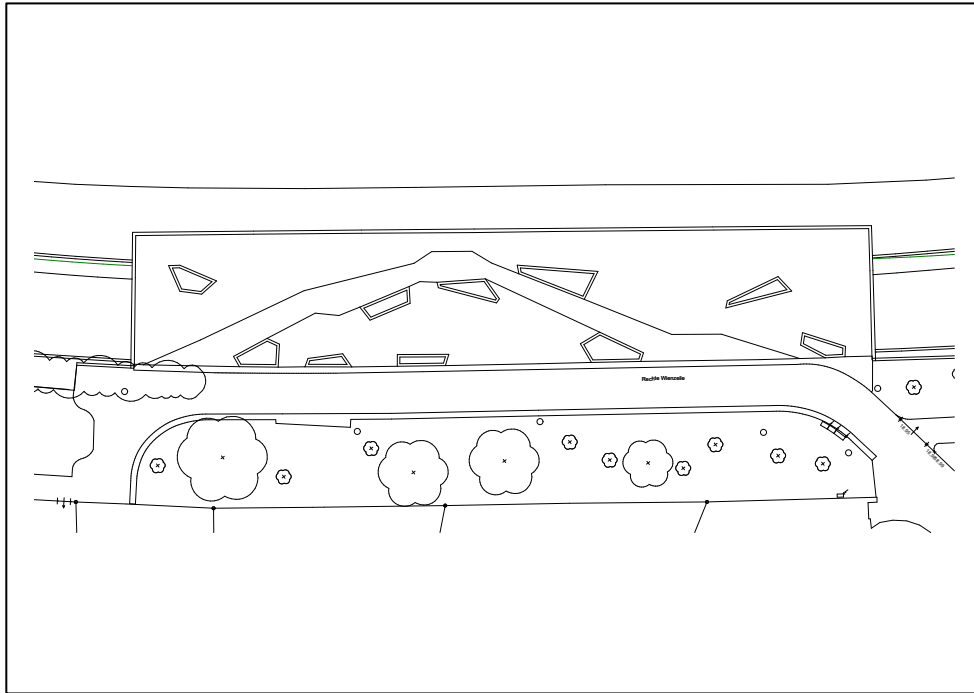


Image 4: Map Wiental Terraces

Both maps displaying the chosen areas were adapted visually to present an adequate layout for the mapping. After printing the maps, a transparent foil was put on top, so that the observed activities could be mapped according to a predefined agenda. The following legend was used to represent the diversity of observed activities:

□ = Any type of social activity (as soon as someone is in company)

X = sitting or lying (no obvious other activity)

○ = reading

△ = being on the phone (e.g. talking, gaming, social media,...)

• = walking a pet

◡ = supervising a child

// = writing or working (e.g. on a notebook or computer)

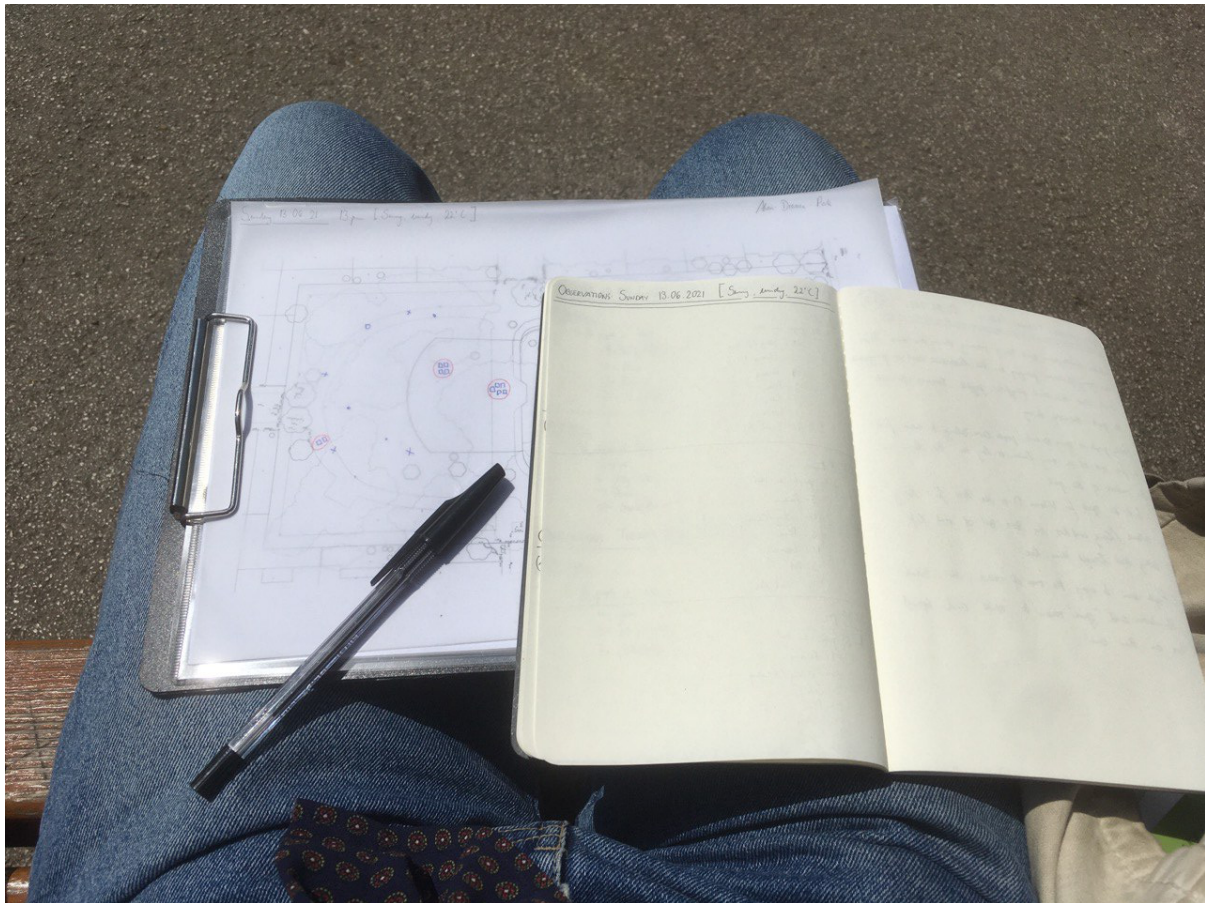


Image 5: Example stationary activity mapping in practice

4.2.2. Participant Survey and Semi-Structured Interviews

In a second step, a participant survey in combination with semi-structured follow-up interviews was conducted at the two locations. The participants were chosen based on a random-sampling and availability of participants selection procedure. The survey aimed at gathering basic demographic information as well as quantifiable data on how the public spaces are subjectively used and experienced by the participants. The surveys were created in English as well as in German and were divided in three different sections. Firstly, the participants were asked to indicate some demographic information including, age, gender, level of education, nationality and current occupation. Secondly, the survey presented the participants with 8 different questions concerning their usual activity and usage of the space and a few questions aiming at collecting some first subjective impressions and opinions of the space. This section was largely based on a participant survey protocol available in the Gehl People open-source tool box for studying public life (Gehl, 2021; Gehl & Svarre, 2013). The last section concerned the particular quality of experience the participants had at the public spaces. As demonstrated by positive psychology research and the theory of flow, optimal, positive experiences are generally

characterised by ceiling levels of concentration, enjoyment and involvement. Past empirical studies in this field have used scale-like designed questions to capture the subjects' momentary quality of experience. Above-average results deduced from such surveys are generally interpreted as indication for states of flow and optimal experiences (Seligman & Csikszentmihalyi, 2000). Therefore, the last section was built on a similar Likert-scale assessment through which the participants were asked to indicate their levels of concentration, enjoyment and involvement they had while being in the space, following a particular activity, before they were approached by the researcher. The survey was done by using a mobile tablet showing the survey via an online platform. The complete survey can be found in the appendix.

Subsequent to the participant survey, semi-structured, open-ended interviews were conducted as well. The interviews aim at revealing the subjective, momentary experience of the participants by means of a qualitative data collection. An interview protocol including some general issues and questions was set up in advance. The following questions were some of the questions formulated precedently that were meant to guide and initiate the interview dialogue:

Guiding Open-Ended Questions

Would you prefer being somewhere else, doing something else at the moment?

Why did you choose to come here?

Are there things/aspects you particularly enjoy at this place?

Are there things/aspects you find particularly disturbing or unpleasant at this place?

However, the interviewer was free to adapt and change the questions according to the emerging conversation and situation. In agreement with the participants, the interviews were recorded in audio.

4.3. Results

4.3.1. Results: Stationary Activity Mapping

In total, 15 observations were made between the 9th May and the 13th June 2021 on six different days across various times of the day. Of the 15 observations, 6 were made at the Wiental terraces and 9 were conducted at the Alois-Drasche Park. Besides the time of the day, the weather conditions were noted as well in order to integrate potential effects of uncontrollable influences, like external conditions such as weather, in to the model. However, all the observations were conducted on days without rain or other unpleasant exterior conditions. Table 1 displays an overview of the observation days, times and weather conditions.

Public Space	Date	Time	Weather
Wiental terrace	Sunday: 09.05.2021	12.30pm	Sunny, cloudy, 21°C
Wiental terrace	Sunday: 09.05.2021	13.00pm	Sunny, cloudy, 21°C
Wiental terrace	Sunday: 09.05.2021	14.00pm	Sunny, cloudy, 21°C
Wiental terrace	Saturday: 15.05.2021	14.20pm	Sunny, cloudy, 22°C
Wiental terrace	Saturday: 15.05.2021	15.00pm	Sunny, cloudy, 21°C
Wiental terrace	Tuesday: 18.05.2021	13.45pm	Sunny, cloudy 22°C
Alois-Drasche Park	Tuesday: 11.05.2021	10.30am	Sunny, 25-28°C
Alois-Drasche Park	Tuesday: 11.05.2021	11.45am	Sunny, 25-28°C
Alois-Drasche Park	Tuesday: 11.05.2021	15.00pm	Sunny, 25-28°C
Alois-Drasche Park	Tuesday: 11.05.2021	16.45pm	Sunny, 25-28°C
Alois-Drasche Park	Wednesday: 02.06.2021	11.30am	Sunny, 22°C
Alois-Drasche Park	Wednesday: 02.06.2021	12.30pm	Sunny, 22°C
Alois-Drasche Park	Wednesday: 02.06.2021	13.30pm	Sunny, 22°C
Alois-Drasche Park	Sunday: 13.06.2021	13.00pm	Sunny, windy, 22°C
Alois-Drasche Park	Sunday: 13.06.2021	14.00pm	Sunny, windy, 22°C

Table 1: Stationary activity mapping observations overview

In total, 735 people were observed and mapped. A distribution of what activities were mapped on each observation day can be seen in table 2. The observed activities were mapped according to the agenda displayed in the method section. It was differentiated between people that spent time alone in the public spaces and people that were in the company of other people. Of the 735 people in total, almost half of them were alone (346 people) and 389 people were with or around other people. The specific activities were only mapped for the people that were alone. The mapping showed that most common activities turned out to be *sitting/chilling* with 19.18% of the total amount of observed participants. The second most common activity was reading (10.48%), followed by being on the *phone* (8,30%). *Working/Writing*, *eating*, *exercising*, *walking pet* and *supervising child* were all represented by less than 5% of the mapped activities. Diagram 1 shows the distribution between people alone and people with social company and a relative distribution of the different mapped activities can be found in diagram 2.

Activity	Wiental terraces			Alois-Drasche Park		
	09.05.2021	15.05.2021	18.05.2021	11.05.2021	02.06.2021	13.06.2021
sitting/chilling	25	9	9	44	40	14
reading	11	2	3	33	18	10
phone	3	4	10	22	13	9
eating	2	0	0	0	4	0
working/writing	1	0	0	8	4	1
exercising	0	0	0	4	1	2
walking pet	4	0	0	4	9	9
supervising child	2	0	0	10	0	2
social activity	78	21	50	148	53	39
social groups	35	9	20	41	26	15
total	126	36	72	273	142	86

Table 2: Stationary activity mapping results

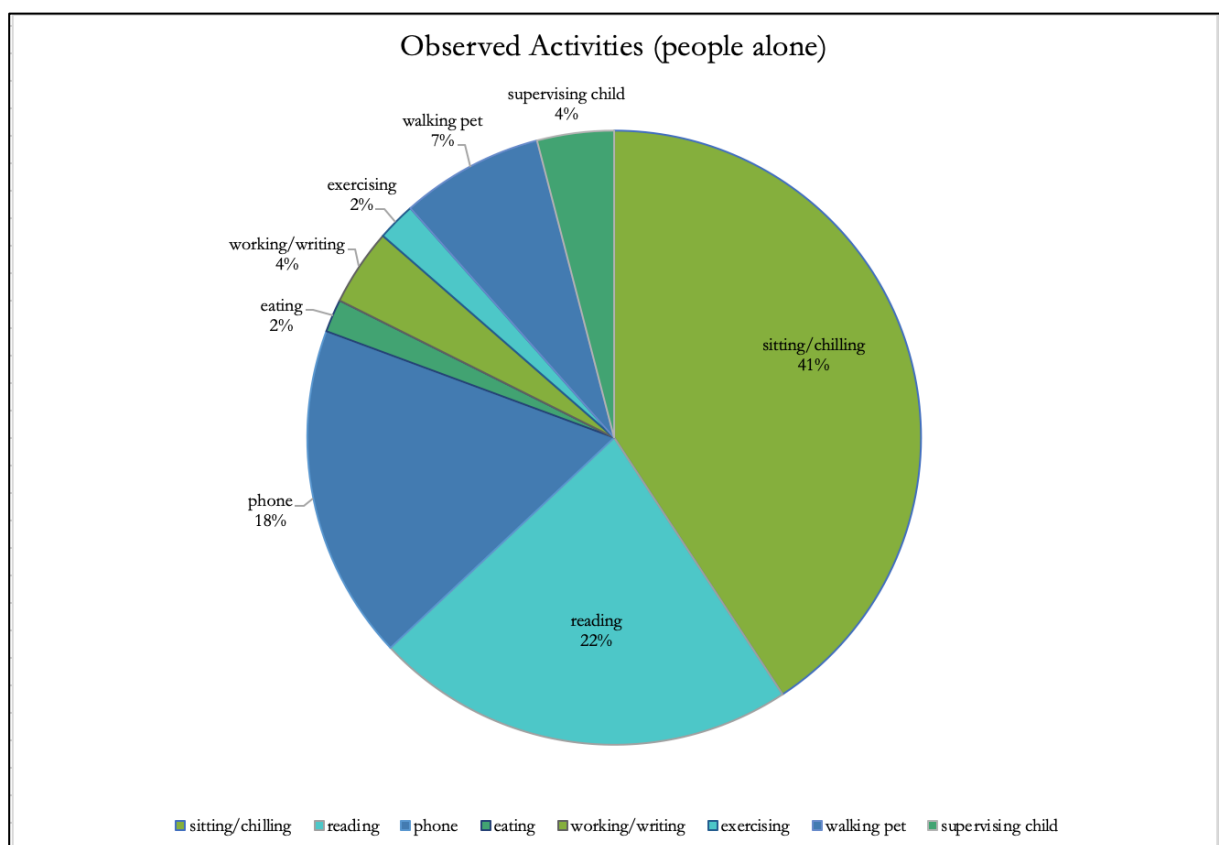


Diagram 1: Mapped activities social activity vs. people alone

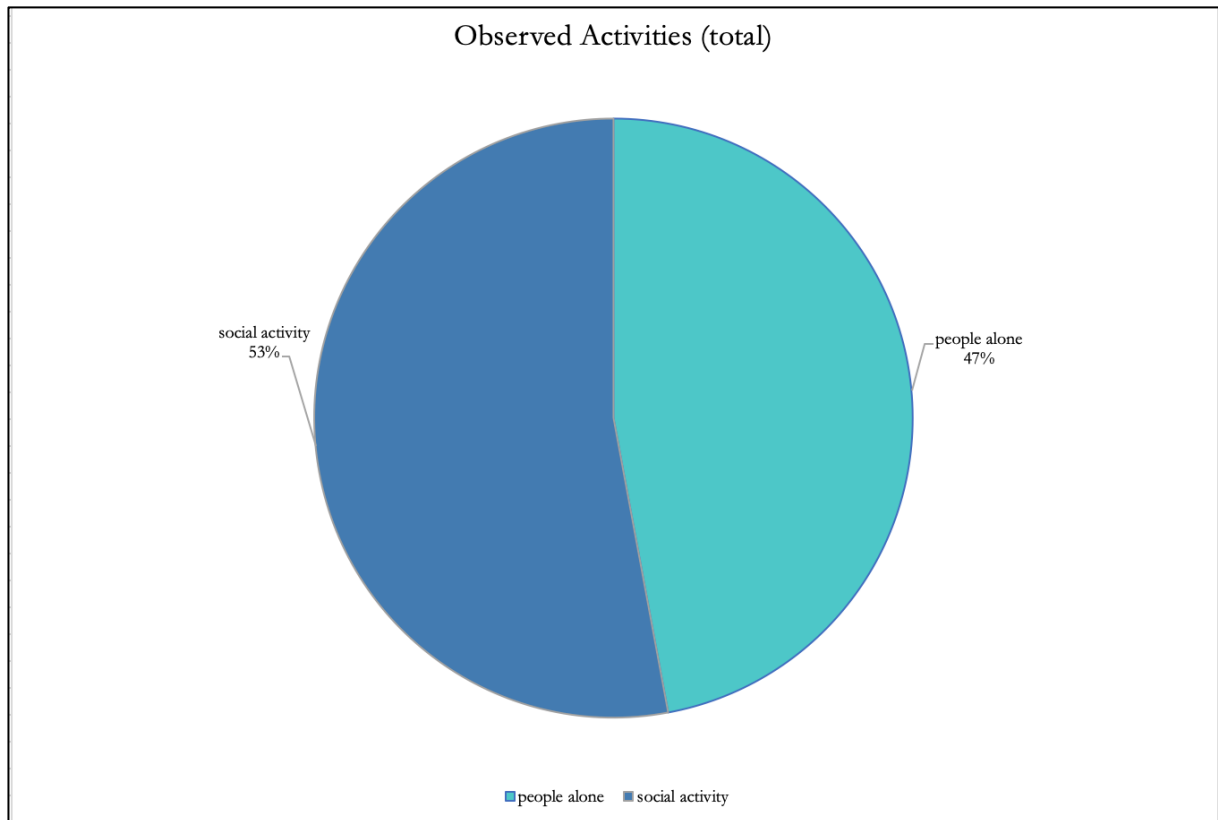


Diagram 2: Mapped Activities People alone

The following two graphic representations display the observed activities of activities in the two public spaces. In order to visually represent the frequencies of the observed activities, the representations are based on a synthesis of all the observations per location. Different icons were chosen to portray the activities. While the location of the icons indicates the spot in the public space, where the respective activity was observed the most, the size of the icon indicates the mapped frequency of the activity. The bigger the icon, the higher the frequency of the activity. The following icons were chosen to represent the different activities:

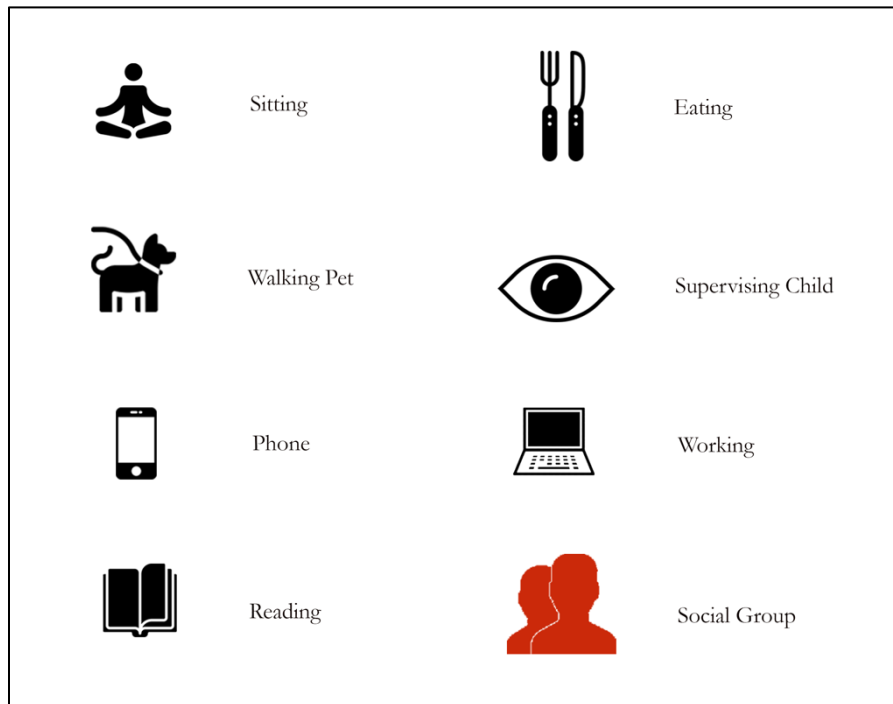


Diagram 3: Activity mapping icon legend

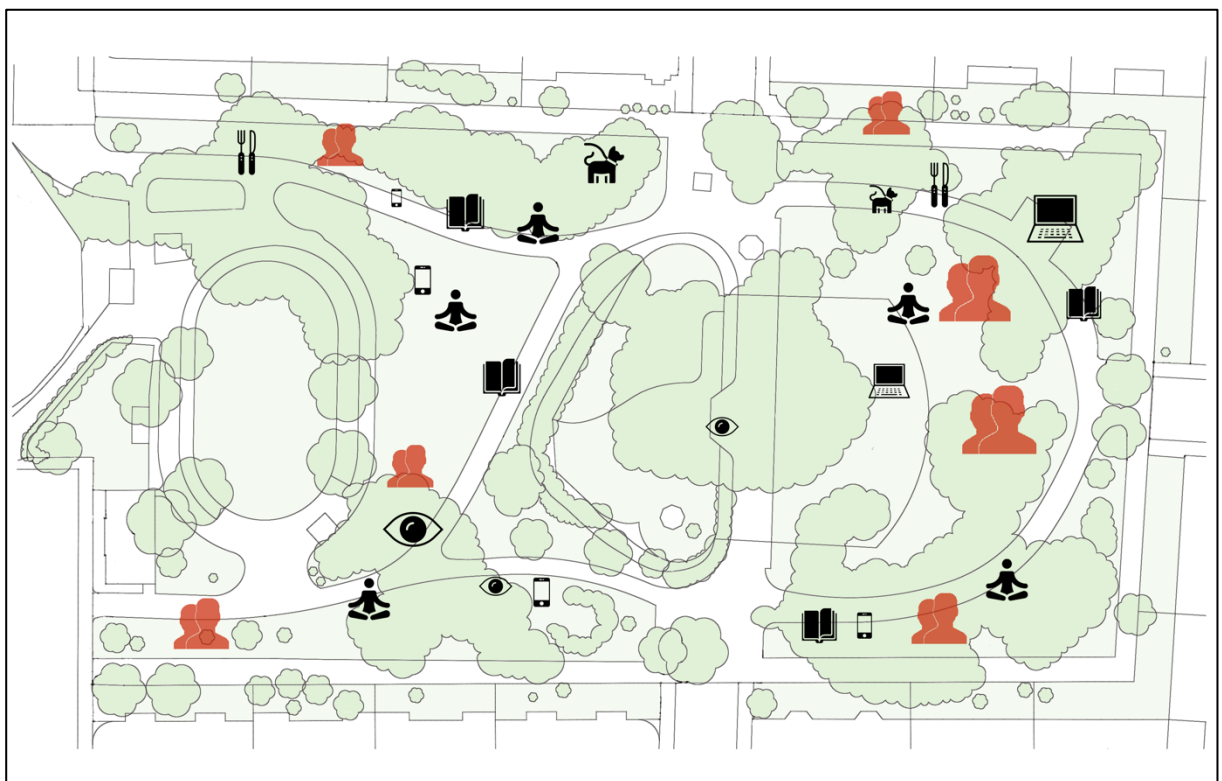


Image 5: Synthesised observed activities Alois-Drasche Park

During the stationary activity mapping conducted in the Alois-Drasche Park, all of the 8 classified activities were observed. Social groups mostly gathered on the two free lawn fields in the centre of the parks. In contrast to that, people that were reading, engaged with their

phones, eating, or working, were found to choose sitting scattered around the paths on the distributed benches facing the fields and centre of the park. People supervising children were mapped close to the two playgrounds and people walking their pets were either observed on the paths or on the green areas behind the paths towards the edges of the park. And lastly, people who were just sitting alone without any observable activity were found on the central lawns as well as on the benches along the paths.

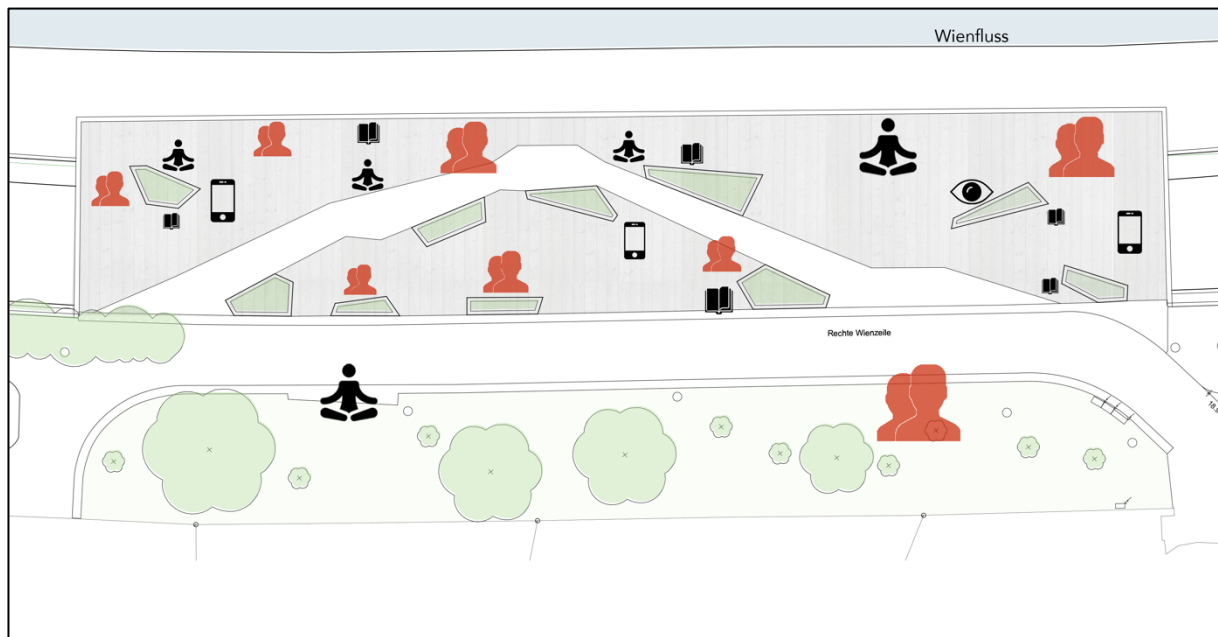


Image 6: Synthesised observed activities Wientalterraces

The stationary activity mapping on the Wientalterraces revealed only 6 out of the 8 classified activities. There were neither people walking their pets nor people working observed in the designated area. Furthermore, social groups were represented relatively strongly. People were found to gather everywhere around the wooden terraces, on the edges, the benches as well as in the centre. In contrast to that, people who came alone were mostly observed on the edges, close to the fence or in closure to some of the green patches. Individuals that were just sitting without being engaged in any particular activity were found to prefer sitting on the edge next to the fence, facing the entire terrace area. People reading or engaging with their phones tended to chose spots close to the green patches, instead.

Overall, the stationary activity mappings in the two different public spaces revealed that a significant amount of people tended to visit public spaces to engage in a variety of observable activities alone. Despite that, people also chose to come to public spaces to meet up with other people. However, the observations revealed that the proportion of social groups compared to

people alone altered over the course of the day. During mornings as well as around noon the proportion of people that were alone was higher compared to social groups. However, this proportion shifted around in the afternoons and early evenings with more and more people gathering in public spaces. Furthermore, it was observed that social groups tended to place themselves distributed across the entire public space with a small preference for central areas, while people engaging in activities alone, especially sitting and reading, mostly sat along the edges of the public spaces, facing the central areas. To conclude, the stationary activity mapping revealed that people come to public spaces alone as well as in company. They thereby pursue a variety of activities ranging from reading and relaxing to physical exercises and social activities.

4.3.2. Results: Participant Survey and Semi-Structured Interviews

Demographics

A sample of 10 participants in total was chosen for the survey and the semi-structured interviews. 3 of the 10 participants were interviewed on the Wientalterraces and 7 participants were interviewed in the Alois-Drasche Park. The average age was 40,5 years, with the youngest participant being 22 years old and the oldest participant being 75 years old. In addition to that, 60% were female and 40% male and all the participants were either German (30%) or Austrian (70%). Furthermore, the sample appears to be relatively well educated, as 40% indicated to have achieved a high school diploma, another 40% indicated to have achieved a bachelor's degree and another 20% has even reached a master's degree or higher. The stated occupations ranged from students, to self-employed, waiters, advocates to pensioners and were thus covering a relatively big diversity of jobs despite the small sample size.

User Activity and First Impressions

As part of the second section of the survey, 2 of the 10 asked public space users reported to visit the public space on a daily basis, 4 out of the 10 participants reported to visit the space weekly and one person reported to only come to public space about once in a month. Almost all the participants said they would visit the public space, because they live close by and only one person said she was there by coincidence. When asked with what intention they came to the public space that day, 8 participants answered they came with the intention to spend time alone and two participants answered they visited the space to meet up with friends. On average the subjects had already been in the public space 16 min by the time they were approached by the interviewer. The participants were also asked to indicate what they were doing before they were approached by the interviewer: 6 people reported they were reading (60%), 3 people (30%)

were engaged with their phone, either listening to podcast or music or reading something and one participant reported to just sit around and enjoy the sun (10%). Lastly, the participants were asked to verbally describe the atmosphere of the public space by choosing 3 different words. The word cloud below is generated on the basis of the gathered collection of words describing both public spaces. The most frequently mentioned words were *pleasant* and *diverse*, followed by *social* and *relaxing*. The size of the words displayed in the word cloud indicates the frequency of the word mentioned by the participants.



Diagram 4: World Cloud based on verbal atmosphere description of public space as part of the participant survey.

Quality of Experience

The final section of the survey attempted to assess the momentary quality of experience of the participants. Thus, the participants were asked to indicate their levels of (a) *concentration*, (b) *enjoyment* and (c) *involvement* before they were approached by the interviewer. Overall, the participants indicated above average levels of concentration, enjoyment and involvement. Usually responses retrieved from likert-scales are vulnerable to the effect of response biases such as the central tendency bias, as participants try to avoid extreme response and tend to choose central value indications (Gray, 2004). However, it is remarkable that for all the three categories, at least one or two participants even chose to indicate their level of either

concentration, enjoyment or involvement by choosing the highest value possible (10). On average people expressed a 6.9 level of *concentration* with the smallest indication of 2 and the highest of 10, a 9.1 level of enjoyment with the smallest indication of 7 and the highest of 10 and a 7.8 level of involvement with the smallest indication of 4 and highest of 10.

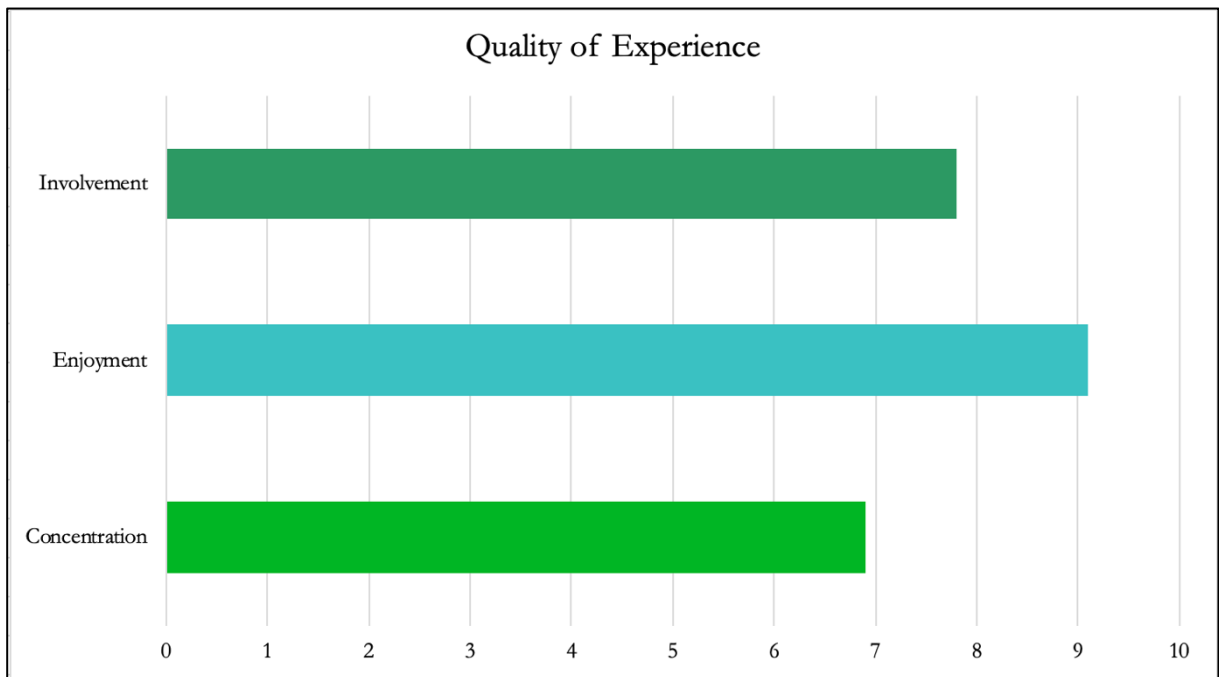


Diagramm 5: Subjective quality of experience assessment by means of indicated levels of (a) *concentration*, (b) *enjoyment* and (c) *involvement* prior to the participant survey and interview.

Semi-structured interviews

The same sample of 10 randomly selected participants was interviewed subsequently to answer the survey. As already described in the methods section, the interviewer initiated the interview with some guiding open-ended questions. The interviews were recorded in audio and partly transcribed afterwards. 2 out of the 10 participants did not feel comfortable being recorded and the interviewer took notes instead. On the basis of the interview scripts and notes, frequently mentioned themes were detected and clustered according to the different topics addressed during the interviews. Table 3 displays an overview of the detected themes concerning the different topics and additionally provides some example quotes from the interviews.

The first topic concerned the motivation and reason for visiting the public space. Two main different themes were detected:

(a) Good Weather Conditions

Almost all interviewees mentioned the possibility of being outside in some green area, enjoying the good weather, as the main motivation to come to the public space. It was frequently mentioned that due to a missing balcony or garden at home, the nearby public space is often chosen as a spontaneous destination for getting some fresh air and sun.

(b) Spontaneous Dwelling

Next to good weather conditions, the participants also often indicated that they enjoyed coming by the space spontaneously whenever they felt like a small break from their daily routines. As the public space was often located in their nearby neighbourhood, the participants claimed to enjoy having the possibility to come there without having to schedule or plan it in advance. Furthermore, it was mentioned that the opportunity to come there with no particular intention is experienced as something especially positive and inviting.

Another topic addressed during the interviews concerned the activities pursued in the public space. In this context, three dominating themes were identified:

(a) Spending Time Alone

The majority of interviewed participants spent time alone in the public space. Among the specific activities, the participants mentioned enjoying the sun, reading a book, having a phone call or just relaxing a little.

(b) Social Activity

Another frequently mentioned activity was to meet up with friends. However, the participants were usually approached when they were still alone and they stated to have decided spontaneously to come to the space a little earlier. Some participants also disclosed that they enjoy observing people and being surrounded by people, while actually being alone.

(c) Physical Activity

Three participants indicated that they often come to the public space to pursue some physical activity. Either to go for a run, make use of the physical activity facilities or meet up with others to play around of table tennis.

The last topic of the interviews dealt with the particular, subjective aspects of enjoyment that marked the individual's experience in the public space. In total, three shared themes were found.

(a) Vibrant, Lively Atmosphere

When being asked what they enjoyed or disliked in the present public space, the participants repeatedly declared to be particularly pleased by the apparent vibrancy of the space. A few participants enjoyed being passively exposed to other people, especially to playing children. The feeling of being alone among others and therefore almost feeling more apart of the liveliness rather than feeling lonely was often supposed as a reason for the positive experience. In addition to that, some participants considered the public space as particularly diverse, where they could interact with people they would normally not meet, which was experienced as something positive. However, the participants also indicated that the vibrancy of the place and presence of other people is only pleasant, as long as it is not too noisy or no one talks directly next to them.

(b) Positive Vibes

Another frequently mentioned theme was the perceived general positive mood and vibe in the park. It was stated that all the noises, activities and situations share positive sentiments and such positivity seems to somehow affect the participants subjectively in their own moods as well.

(c) Green, Natural Aspects of the Environment

And lastly, the participants usually remarked that they explicitly enjoyed being surrounded by green elements such as some lawn, trees or flowers. Especially, in an urban environment such as Vienna's inner city, this facet of the public space seems to certainly induce a positive experience in public space users.

Topic	Detected Theme	Example Quotes
Motivation & Reason for Visit	Good weather conditions	"I live in the neighbourhood and we do not have a balcony. The park is my substitute garden."
		"The park is the next green island close to my place, so whenever the weather is nice I make use of the opportunity and walk over to enjoy the sun for a bit."

	Spontaneous Dwelling	<i>"I had a spontaneous hour break in my schedule, so I decided to come here, relax and enjoy the sun."</i>
		<i>"I usually stop by here spontaneously when I am taking a little walk through the neighbourhood to get some fresh air and take a break."</i>
Pursued Activity	Spending Time Alone	<i>"I particularly like to come here to read something, to write something or even to work a little."</i>
		<i>"I usually come here alone. If I want to see other people, I go somewhere further or arrange something."</i>
		<i>"I almost always come here alone, usually after my lunch break, to read a bit, google something or to just look around."</i>
	Social Activity	<i>"I like that I can meet up with friends, old flatmates or even strangers."</i>
		<i>"I usually meet up with some friends here. Sometimes just one or two, but other times we are a small group."</i>
		<i>"I want to meet up with a friend, but the weather turned out to be so nice, that I took a book with me and decided to read a bit as well."</i>
		<i>"I think it is relaxing to be outside and observe other people. (...) Usually, when I am in a Café I also chose my seat so that I can observe the scenery."</i>
	Physical Activity	<i>"Usually, I come here to do some physical exercise or play table tennis with some friends."</i>
		<i>"I like to visit the park to meditate for a bit."</i>
Aspects of Enjoyment	Vibrant, Lively Atmosphere	<i>"It is a very lively place. There is always something going on here: kids playing, people doing physical exercise. I like that."</i>
		<i>"I somehow think it is pleasant when there is some liveliness around me, even though when I am not a part of it."</i>
		<i>"I enjoy when I am reading, writing or working and there is a breath of liveliness surrounding me. It feels like I am not completely alone, but I do not have to interact. I really like this sometimes."</i>
		<i>"It is really chill when I do not have to arrange a meeting, but I'm still not alone."</i>
	Positive Vibes	<i>"I myself experience more vitality when I am exposed to other people being happy, vital and all joyful."</i>
		<i>"All the noises, I perceive, are positive ones."</i>
		<i>"I like the noises of playing kids. They are somehow pleasant; happy noises, no fighting. Just pleasant side noises."</i>
		<i>"The whole atmosphere, including the noises and positive vibes, has a positive effect on my mood and maybe even on my concentration."</i>
		<i>"I like that there is a lot of space with direct sunlight as well as in the shade."</i>

	Structural and green elements of environment	<i>"The area is not too big, but very green."</i>
		<i>"I particularly like how forested the park appears to be. That is really rare in big cities."</i>

Table 3: Clustered Themes found in semi-structured open-ended interviews. (All original quotes were in German and had to be translated.)

To summarise, the semi-structured open-ended interviews with 10 subjects have revealed several dominant themes as responses to three main topics. Throughout the interviews the participants reflected on (a) *Motivation and Reason for Visit*, (b) *Pursued Activity* and (c) *Aspects of Enjoyment*. The interviews mentioned *good weather conditions* and *spontaneous dwelling* as main reasons for visiting the public spaces. Among the most frequently listed pursued activities, *spending time alone*, *social activities* and *physical activities* were the most prevalent ones. And lastly, when being asked about particular aspects of enjoyment, the participants referred to the overall *vibrant, lively atmosphere*, the perceived *positive vibes* and the pleasant *structural and green elements* of the respective public space.

Overall, the results of the small ethnographic case study have revealed that people generally seem to enjoy spending time in public spaces and do that by pursuing diverse kinds of activities. They either come alone to simply relax or read and simultaneously appreciate the passive stimulation of surrounding noises and social interactions, or they come to pursue other social activities such as meeting up with friends or doing some physical exercise. Reasons and motivations to visit the public space varied individually, but often entailed aspects such as pleasant external weather conditions or spontaneous dwelling. Eventually, even though the indicated levels of enjoyment, concentration and involvement were surprisingly high, the interviewed participants struggled to phrase verbally, which aspects of their surroundings they appreciated the most and why. Among those aspects mentioned, especially a generally perceived positive, vibrant and lively atmosphere and particularly pleasant aspects of the material environment stood out. The results are analysed in the proceeding section.

4.4. Analysis of Case Study Results

The case study conducted at two public spaces in inner city Vienna aimed at collecting some empirical and ethnographic data to support the theoretical ground of the thesis at hand. The gathered quantitative observations, survey data and qualitative subjective reflections upon the public space usage and experiences have revealed 3 main interesting insights supporting the

prior postulated theoretical framework: Firstly, the public spaces at issue were commonly described as open-minded and multifunctional. Secondly, the overserved and interviewed subjects mainly engaged in optional and social activities while being in the public spaces. And thirdly, the generally perceived positive and social atmosphere of the public spaces made the subjective experiences all the better.

(1) Open-minded character of public spaces

Firstly, the way the participants described the character and structure of the public space reminds of the notion of *open-minded* public spaces as proposed by Walzer (1986). The stationary activity mapping showed that almost half of the observed subjects spent time alone in the public space, engaging in activities such as reading or sitting. This was even further supported by the interviewees' responses, as they indicated they especially like to come to the public space for spontaneous dwelling or relaxing. Such responses and observations invite to infer that the respective public spaces do not seem to prescribe specific activities or functionalities, such that the individuals feel invited to just stop by to linger and take a break. Furthermore, the interviews as well as the survey have also shown that this kind of unscheduled dwelling in public spaces is often accompanied with positive moods and experiences. These findings are in line with the link between an open character of public spaces and the quality of experience of urban life as claimed by Michael Walzer and Jan Gehl (Gehl, 2011; Walzer, 1986).

(2) Optional and Social Activities

Secondly, the observations as well as interviews have demonstrated that people almost exclusively pursued what Gehl defines as *optional* and *social activities*. In this context, Gehl argues that the types of observable activities in public spaces can indicate the quality of such space (Gehl, 2011). Among the most frequently pursued activities, the participants mentioned being alone, reading, enjoying the sun and engaging in social activities. According to his framework, people only engage in such activities when external conditions of a space are favourable (Gehl, 2011). Especially the interviewees' responses reflect this argument. The participants frequently mentioned the good weather conditions and the physical structure, including open spaces, possibilities for sitting and green, natural elements, of the public spaces as being pleasant and inviting for a visit. Furthermore, the participants often reflected that especially the engagement in modest forms of social activities and interaction appears to elicit positive experiences. Somehow the possibility of being passively part of a vibrant, lively environment evokes a pleasant atmosphere for the individual. Some participants even explicitly stated that they liked

to sit in a way they have an overview of the scenery. These findings are again in line with previous research (Cattell & Herring, 2002; Gehl, 1969; Gehl et al., 1977) and present a promising insight to the research question. Even though the participants struggled with explaining verbally the reasons for the pleasant experience of the passive stimulation, it is apparent that the social and affective feedback they perceive from the general atmosphere of a vibrant park and modest social interactions positively affect the subjective quality of experience in the given public spaces.

(3) Perceived Positive and Social Atmosphere

The general perceived positive and social atmosphere of the public spaces at issue presents another interesting aspect of the case studies in light of the research question. When being asked to reflect upon the general perceived atmosphere of the public space and the particular aspects of enjoyment, the subjects commonly described the atmosphere as pleasant, relaxing and social. Furthermore, this generally perceived positivity, in turn seems to affect the participants' subjective mood and quality of experience. As part of the survey, the participants were asked to indicate their levels of enjoyment, concentration and engagement. Such measures are employed as indicators of measuring the quality of experience, as proposed by Csikszentmihalyi theory of flow (Csikszentmihalyi, 1991). Even though the case studies do not allow to draw any causal connection between the positively perceived general atmosphere of the public space and the individual's subjective quality of experience, it emphasises the relevance to further explore the relation between the experiencing individual and his or her environment.

To summarise, despite the generally limited explanatory value of the case study due to the study's narrow scope, the case study successfully demonstrated how people intentionally chose the public spaces for pleasant and positively experienced activities. These activities can be categorised as optional and social activities, which have been argued to be tightly connected to a space's quality. Nevertheless, the public spaces were not perceived as being defined by a certain prescribed functionality and usage, rather the participants enjoyed the open character, inviting them for spontaneous, unscheduled and purposeless dwelling and relaxing. A multitude of different aspects including the presence of other people, pleasant material elements and the weather conditions appeared to contribute to the generally high quality of experience of the subjects. Previously outlined theories as proposed by Csikszentmihalyi (1991), Gehl (2011) and Cattell et al. (2008) invite to hypothesise about the dynamic relations between the subjective experience of the individual, the public space, including its material, social and cultural character

and the individual's interactions with it and pursued actions in it. In order to further unveil these dynamics, the following section develops a drafted model that joins the theoretical as well as empirical insights obtained so far.

5. A Synthesised Model of Happy Places, Happy People

The thesis at hand has delved into the topic of subjective quality of experience in public spaces by digesting key concepts of the recent 4E approaches to cognition and re-interpreting them in the context of the research question as well as by presenting the results of a small ethnographic case study. To integrate all the gathered perspectives and insights, this section proposes a first model that aims at elucidating *How modest forms of social interaction affect the subjective quality of experience in public spaces*. The model explicitly attempts to illustrate the interdependencies between the general human-environment relation, the subjective experience emerging from this interaction and the subjective quality of experience in public spaces with particular focus on the effect of modest forms of social interaction.

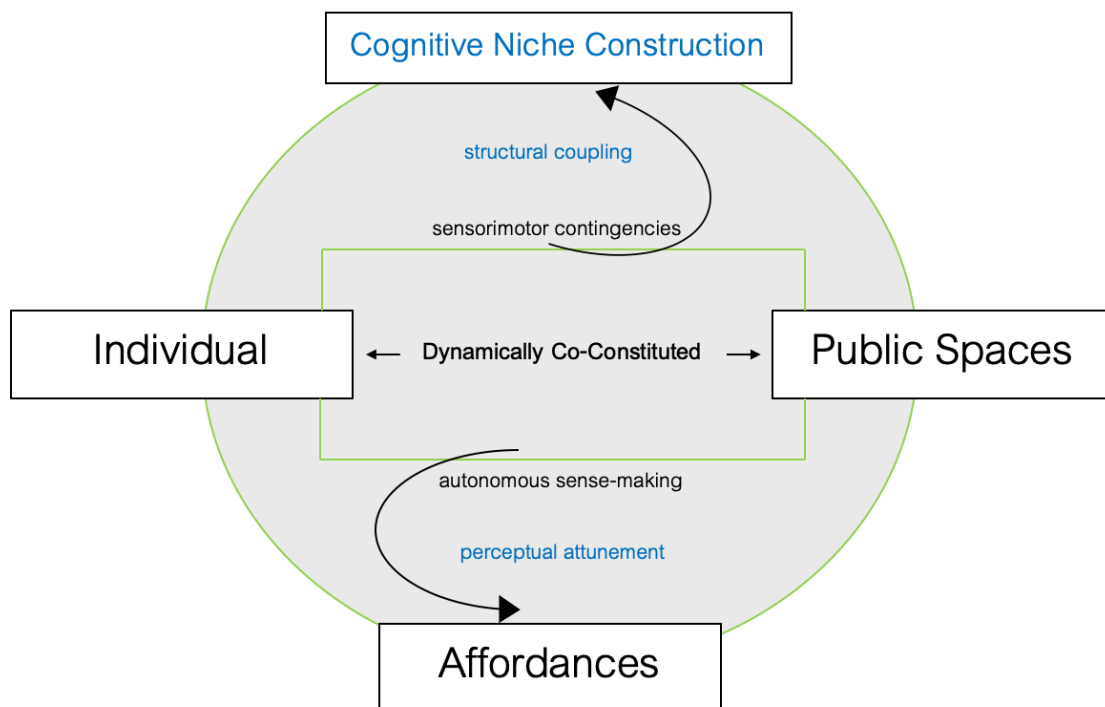


Diagram 6: Conceptual Model

The model mainly draws on the embodied-enacted view of cognition as being constituted by bodily engagements and autonomous and continual interactions between the individual and environment. It illustrates the individual-environment interaction as a continuous, *dynamical*, *structural coupling* (Di Paolo & Thompson, 2014) process, through which the individual acquires embodied knowledge and reaches a *perceptual attunement* (Varela et al., 1991). The individual as well as the space, thereby, acquires meaning and value, as the individual

engages in *participatory sense-making* (De Jaegher & Di Paolo, 2007) processes, which give rise to a qualitative, subjective experience. Furthermore, the qualitative experiences are elicited, afforded and facilitated through the *construction of a cognitive niche* according to an individual's, bodily, social, motivational and cultural embodied knowledge and perceptual mastery. Composed by different *affordances*, the cognitive niche eventually facilitates optimal experiences (Csikszentmihalyi, 1991) in the context of modest forms of social interaction.

All of the model's key concepts are highly overlapping and interdependent. However, the subsequent sections explain each of the concepts individually. At first, the dynamic co-constitution between the individual and environment is described, as the acknowledgement of such a concept builds the foundation of the model. Secondly, the key process of participatory sense-making is outlined, as this process draws on the value and meaning generation within the co-constituted system. Building on the first two concepts, the construction of cognitive niches is introduced as the mechanism for shaping participatory sense-making within the co-constituted system. And lastly, affordances are presented as an essential concept of the model as they connect not just the individual and environment but also constitute the cognitive niche and prime the participatory sense-making process. The exact dynamics and interdependencies are illustrated in the upcoming sections.

5.1. Dynamic Individual-Environment Co-Constitution

Public spaces have been chosen as the contextual ground for the analysis. The discussed theory as well as the conducted case study have focused on the relationship between the cognizing individual and the public spaces he or she experiences. It has thereby been distilled that this relationship is characterised by a rather dynamic and active nature. The idea of public spaces as mere physical containers or clearly depicted geographical areas is rejected as well as the notion of passively consuming and processing public space using individuals (Cattell et al., 2008). Instead, the fluid and creational character of public spaces, as firstly introduced by Martin Walzer (1986), and their relation to their users has been distilled as apt definition in the context of the thesis. However, while it was argued earlier that a public space's usage, purpose and quality is continuously formed by the people and activities it attracts (Walzer, 1986), this notion has been developed further. In order to thoroughly discern the effects of the material environment on the subjective quality of experience of an individual user, this view has been enlarged to additional layers of analysis, by introducing the notion of an autonomous and active individual to the environment-individual relationship. In this context, the enactive notion of co-coupling of an individual and its environment proposes a promising approach, as it emphasises

the importance of the environment in the constitution of agency (M. Heras-Escribano, 2019; Jelic et al., 2016; Thompson, 2007).

The enactive view denotes the human-environment relationship as a *two-way dependency* between the human, including the human body as well as mind, and the built-environment that evolves as a result continuous *viable, structural co-coupling* (Di Paolo & Thompson, 2014; Thompson, 2007; Varela et al., 1991). Architectural spaces such as public spaces should be seen as expressions of their users' embodiment. Simultaneously, the way architecture is embodied affects the human mind, well-being, and behaviour (Jelic et al., 2016). Initially postulated by Maurice Merleau-Ponty and outlined in earlier chapters, the body functions as the main "vehicle for experience" (Merleau-Ponty, 1962). Every individual-environment interaction occurs on the basis of sensorimotor contingencies, which refer to established relations between produced actions and specific precedingly elicited bodily sensations. Whenever an individual interacts with something encountered in its environment, a certain sensorimotor response pattern is elicited that leads to a sensory feedback and motor behaviour. Over time, each sensory feedback received for every particular action allows for a continuous coupling with the environment (M. Heras-Escribano, 2019). The accumulated embodied knowledge emerging from these contingencies enables the individual to skilfully and purposively interact with its environment. Additionally, this embodied mastery of the sensorimotor regularities fine tunes the perceptual abilities and preferences of the individual and, hence, changes the mode of interaction with the same immediate environment. What originates from this co-coupled dynamic interaction is a constitutive agency of the individual actively exploring and shaping the environment through his or her interactions with it (M. Heras-Escribano, 2019; Thompson, 2007).

In the context of public spaces and its users, the model describes how material structures and features sketching a public space such as a bench or a path are experienced through a moving and interacting user. As he or she sits on the bench, or walks on the paths, the sensorimotor patterns underlying the performed behaviour mark the user's subjective experience and in turn characterise the public space by means of a sittable bench and walkable path. How exactly features and structures of the external environment gain their qualitative value is outlined by the process of participatory sense-making.

5.2. Participatory Sense-Making

When moving through and inhabiting the built-environments surrounding us, it is about the qualitative dimensions and characters of everything we perceive that determines the value and relevance of our experience. Only through the perceived experiential qualities, we are able to

make sense of the external world and classify it by meaning and content. Thus, the qualitative difference between a sittable bench and a walkable path as encountered in a public space has to be somehow generated in terms of different qualitative information or values.

The model at hand proposes that the quality of the public space user's subjective experience is defined by an autonomous meaning generation process, through which the individual transforms its environment into a place with meaning, value and content (Colombetti, 2010; M. Heras-Escribano, 2019; Jelic et al., 2016; Thompson, 2007). The model sheds light on the idea that every qualitative experience is engendered by the individual's interactions with the world. As already argued the individual enjoys an autonomous agency that allows him or her to generate and sustain its transactional relations with its immediate environment. What results is a structurally coupled *sense-making* relation between the individual's mind, body and environment (Malinin, 2016).

The model thereby employs key perspectives from the embodied and enacted view, holding that no meaning and values can be derived from the external world as processed input stimuli. Instead, the embodied perspective claims that sense-making is deeply grounded in the sensorimotor capacities of the moving cognising agent as well as its interactions with the immediate environment (Dove, 2011; Malinin, 2016; Varela et al., 1991). What surrounds us is perceived in a form of sensorimotor simulations that eventually represent meaning carrying cognitive categories that aid the individual to understand its environment. Through the notion of sense-making, the model expands on the bodily driven conceptualisation of meaning generation by extending it to the dynamic interactions between the body, mind and environment. The way a cognising agent engages with the external world by means of its body as well as its particular history of interactions constitutes the ground for every meaningful experience (M. Heras-Escribano, 2019). It is the organism as a whole that serves as the vehicle for meaning (Malinin, 2016). Consequently, while in embodied and situated approaches the individual's body's role is defined as presenting an indispensable interface for perceptual experience and the acquisition of knowledge, the model introduces a more enactive role (Di Paolo & Thompson, 2014). The body, in this context, should be regarded in terms of its organisational and self-regulatory dimensions as well and presents a fundamentally integrated part of the whole cognising organism in relation to its mind, body and environment (Colombetti, 2010). Only the self-regulated interactions with the environment, transform the external world into a place of meaning, value and content. It is important to note that meaning, hence, always originates within the cognizing system rather than being imposed from an

external, meaning-representing world (Malinin, 2016). How these findings can be interpreted and what they imply will be discussed in a later section.

5.3. Cognitive Niche Construction

A public space user, as an autonomous cognising individual, takes up an active role in transforming its surrounding built-environment into a place of meaning. By exploiting, interacting with, moving between settings the individual continuously constructs a *cognitive niche* that enhances possibilities for meaningful and, hence, optimal experiences (Malinin, 2016). A cognitive niche not just refers to an apt environment affording meaningful possibilities for interaction but also entails the accumulated, embodied cultural, social and sensorimotor knowledge that guides an individual's perception and action (Rietveld & Kiverstein, 2014; Robinson & Pallasmaa, 2015). In general, the concept of niche construction stems from evolutionary biology and ecology and describes that organisms alter their environmental conditions to increase their chances of survival (Malinin, 2016). However, the concept also resides among cognitive science theories. As already described in earlier sections, Rietveld and Kiverstein (2014) mention the similar concept of *ecological niches* in the context of Gibson's theory of affordances. In their view, an ecological niche is composed of and shaped by individuals inhabiting and using the niche. An ecological or cognitive niche is, thus, constructed and continuously transformed by the particular way of interaction between its users and the structures and features it provides. A cognitive niche therefore also nicely matches with the idea of co-coupling and co-constitution between agent and environment. The continuous subjective structural coupling results in a fine-tuned perceptual awareness that forms the individual perceptual priorities. Material structures and features in an immediate environment can be experienced differently depending on the cognising individual and its particular history of sensorimotor contingencies (M. Heras-Escribano, 2019; Rietveld & Kiverstein, 2014; Varela et al., 1991). Cognitive niches, in that sense, are specified by the particular way in which individuals interact with them and behave in them, rather than a specific physical space (Manuel Heras-Escribano & De Pinedo-García, 2018). Hence, in line with the dynamical and creational definition of public spaces, public spaces can be considered as ground for subjectively constructed cognitive niches, that facilitate and elicit meaningful and positive, experiential encounters for their users. Through continuously established spatial configurations and transactional relations, they provide sense-giving qualities to their users (Malinin, 2016).

Applied to the context of public space experiences, cognitive niche construction describes the way an individual uses a public space. The process, thereby, refers to a strongly

subjective way of interacting with and perceiving the designated public area. For instance, as demonstrated by the case studies, while some users usually intend to visit a park to spend some time alone, read a book or just take a break, others use it to meet up with friends or play some table tennis. The different pursued activities have been chosen based on previous experiences, subjective preferences and the structure of the available space at hand. The process of transforming a public space into a space of meaning, content and value as part of the niche construction, can be argued to refer to a successfully perceived match between the external opportunities afforded by the environment and the internal subjective capacities enabled by the bodily experiences of an individual. As constituted by the theory of flow, a balanced match between skills and desired activities provides the base for optimal, meaningful and engaging experiences (Csikszentmihalyi, 1991; Malinin, 2016; Varela et al., 1991). This is also again in line with the co-coupling notion of public spaces and an individual, as again the dynamic and reciprocal interaction between the user and the public spaces constitute each other's sense-giving qualities (Cattell et al., 2008; M. Heras-Escribano, 2019; Malinin, 2016; Thompson, 2007).

It is important to note that constructed cognitive niches do not only consist of material and physical structures. Instead, they also comprise social and cultural contexts. The proposed model strongly grounds in a dynamical, reciprocal system between the individual and the public space. However, the conceived reciprocity between the individual and his or her environment does not necessarily follow a symmetric bi-directionality. The relation from environment to individual appears to be rather casual, while the relation from individual to environment is informed by cultural, social norms and convention and, thus, seems to be normative (Manuel Heras-Escribano & De Pinedo-García, 2018). A perceptually skilled cognising individual adjusts his or her perceptually driven actions and behaviour not just to the embodied knowledge of sensorimotor contingencies but also to the learned social and cultural norms (Goffman, 1963; Rietveld & Kiverstein, 2014). Knowledge about social and cultural norms originates from interaction with other members of the cognitive niche as well as the received social feedback (Goffman, 1963; Rietveld & Kiverstein, 2014). Thus, even though each individual subjectively constructs his or her own cognitive niche, the construction process is shaped and influenced by the sensual, affective, cultural and social feedback perceived in the immediate environment.

To summarise, a cognitive niche refers to physical, cultural and social spaces that an individual perceives as meaningful ground for interaction. Based on her subjective past history of interactions, received social and cultural feedback and internal sense-making processes, the individual continuously interacts with the space so that it generates more meaningful and positive experiences. A successfully constructed cognitive niche, thus, provides a good match

between sensual and bodily perceptual and motor skills and externally perceived opportunities for engagements and actions. A simple example can be found on every city's streets and squares. On a sunny early spring day one might observe people moving along with the sun, changing seating spots or even moving mobile furniture according to where the sun rays reach the street. People change their environment and adapt their actions in order to enjoy as much of the sun's warmth as possible, hence increasing their positive experiences. Therefore, in the context of the topic at hand, the process of cognitive niche construction refers to the way, an individual subjectively chooses to spend time in, act in and interact with a public space according to his or her desired intentions, embodied abilities as well as in adherence to the learned cultural and social norms and values.

5.4. Affordances: Value-Rich Potentialities for Meaningful Interaction

In the light of the proposed model, the constructed cognitive niches comprise a set of *affordances* in terms of value-rich potentialities for meaningful interactions that elicit optimal subjective experiences (Manuel Heras-Escribano & De Pinedo-García, 2018; Malinin, 2016; Rietveld & Kiverstein, 2014). As outlined above, the perception of meaningful interaction possibilities within the environment, displays one of the key determinants for the quality of subjective experience in public spaces. Affordances, in this context, provide an interesting concept for analysing the dynamics between the individual and the immediate environment. Affordances, as originally introduced by Gibson (1979), refer to environmental properties that are always relative to the perceiving individual. While Rietveld and Kiverstein (2014) characterise this as ecological and spatial logic, the embodied approach grounds this perceptual dependency in the sensorimotor based perceptual attunement of a skilled individual (Barsalou, 1999; Varela et al., 1991). Drawing on these insights, the model in line with the enactive view, holds that it is the individual as an autonomous organisational entity that through its exploratory activities perceives different potentialities for interaction afforded by its environment (Manuel Heras-Escribano & De Pinedo-García, 2018; Thompson, 2007). Structures and features in our environments carry motor senses and particular meanings in the way they elicit appropriate actions (Thompson, 2007). The emerging co-coupled dependency between an individual and the public space posits that affordances in a given environment afford inasmuch as the using individual's perceptual, motor and intentional mastery complements the affordances, and vice versa (Manuel Heras-Escribano & De Pinedo-García, 2018). In a way, this dependency and dynamic is an inherent part of the cognitive niche construction as well as it emerges as part of

it. Phrased differently, the individual-environment relation through the lenses of affordances evolves in form of sustained dynamic loops:

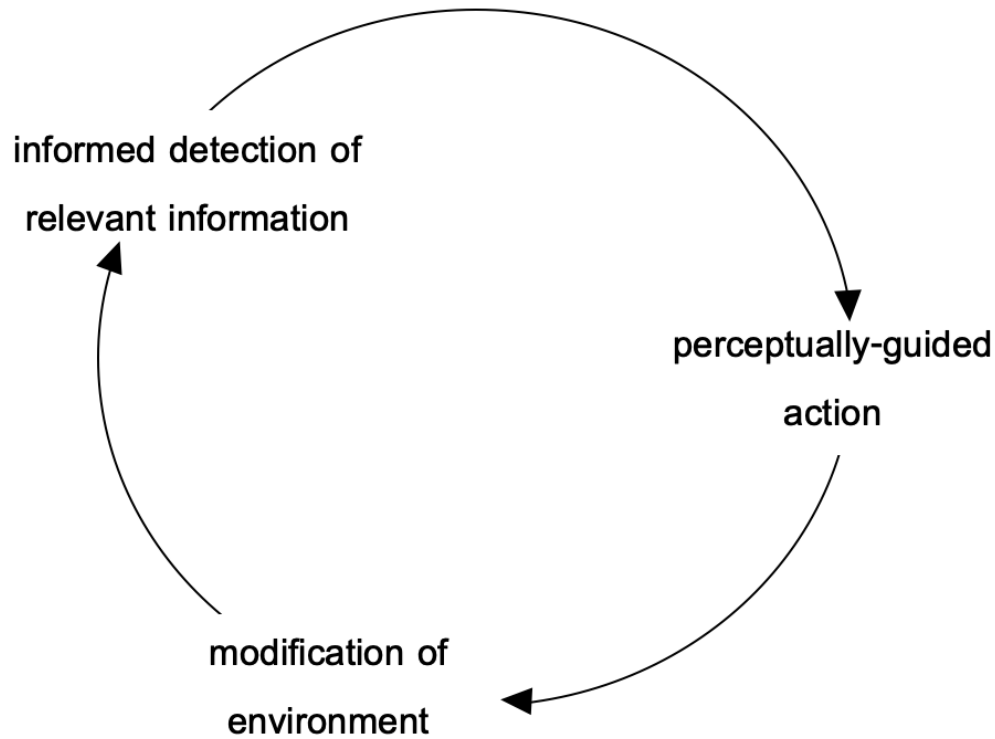


Diagram 7: Dynamic affordances loop

As the individual explores its environment, he or she scans the environment from its subjective, egocentric perspective searching for information relevant for his or her actions. Once relevant measures are perceived, the individual engages with the environment performing a perceptually-guided action. Through this initiated individual-environment interaction, the very environment is modified in its sensual structure itself as well as in the subjectively perceived qualities through the lenses of the beholder (Manuel Heras-Escribano & De Pinedo-García, 2018). In turn, the environment, which now affords slightly different information is again detected by an exploring individual that consequently engages in another perceptually-guided action, accomplishing the continual flow of the dynamic loop (Manuel Heras-Escribano & De Pinedo-García, 2018). Thus, what follows is that affordances are environmental properties that are always relative to the perceiving individual (Gibson, 1979). This notion is again in line with the *sense-making* concept as illustrated above (Colombetti, 2010; M. Heras-Escribano, 2019; Malinin, 2016). Meaning of the surrounding environment is neither intrinsically generated by the environment, nor does it stem only from the perception of the cognising individual. By

contrast, meaning and value emerges from the individual-environment circuit between sensory and motor mastery, perceptually guided actions and experienced sense-giving qualities. Phrased differently, our external environments surrounding us inform us about what we can see and do, while simultaneously, our internally embodied, accumulated perceptual abilities and capacities for skilful interaction demarcate the meaningful and positive experiences available (Jelic et al., 2016).

Affordances should therefore be understood as *value-rich potentialities for positive experience* through interaction that are afforded by the public space by means of the constructed cognitive niche. Each individual visiting a public space has his or her own subjective, perceptual lenses through which he or she perceives the environment according to his or her needs, desires and experiential capabilities. While one individual might perceive the wide lawn in the middle of a public park as a possibility to get some rest and enjoy the sun, another might perceive it as an opportunity to pursue some physical exercise. Hence, affordances, in this context can range within the whole spectrum of abilities in human socio-cultural practices (Jelic et al., 2016).

Therefore, affordances play an essential role to the quality of subjective experience emerging from the individual-environment interaction, as they constitute the value-rich aspects of the encountered environment that invites meaningful actions. They are thereby not just informed by an individual's sensorimotor knowledge and motivational factors but also constitute the constructed cognitive niche, hence, immediate environment. For that reason, the model suggests that an individual's experience of a public space is intrinsically formed by the possibilities for action afforded by the environment and perceived through a subjectively driven preparatory and anticipatory process of perception.

5.5. Connecting the Dots – From Happy Place to Happy People

The postulated model sheds new light on the interdependencies between (1) human-environment relation, (2) subjective experiences emerging from this relation and (3) the distinct quality of subjective experience by placing it in the context of subjective experiences in public spaces. Concepts, borrowed from the 4E approach to cognition, such as structural coupling, sensorimotor contingencies, perceptual attunement, autonomous sense-making and affordances have been integrated to the model to outline a new theoretical approach to explain the experiential dimension of the human-environment relation. The resulting model builds upon four key premises:

- (a) The individual and the public space are structurally and *dynamically co-coupled* and comprise one constitutive system
- (b) Public spaces are transformed into meaningful, content-rich and valuable places by means of *autonomous sense-making processes* that emerge continuously from the individual's interactions with and in the space.
- (c) Within the dynamics of the continuous explorative perception-action cycles, the individual *constructs a cognitive niche* that provides the space and possibilities for meaningful, hence, positive experiences. Such niches encompass all accumulated, embodied cultural, social and sensorimotor knowledge as well as subjective motivational factors and desires.
- (d) *Affordances*, as a theoretical concept, delineate the central aspects of the environment that carry value-rich potentialities for interactions and demarcate the external world into meaning through the subjective lenses of the individual.

Based on these premises, one could postulate that the quality of subjective experiences emerges from and increases with a successful and balanced match between the individual's internalised embodied abilities, perceptual knowledge and motivational factors and the externally afforded structures and moments for meaningful interaction. The more elaborated the constructed cognitive niche becomes, the higher the chances for the individual to engage in some positive experiences eliciting action. An elaborated cognitive niche, in that sense, would comprise as many affordances as possible that display the opportunity to transform the public space in an environment of meaning, value and content. In turn, the perception of these affordances, depends on the fine tuning of the perceptual abilities in combination with the subjective aspects of desire and motivation, which mature continuously. Therefore, public spaces that allow for diverse, continuous and initially unspecified actions and moments of interaction, might evolve to an external environment that can provide a range of meaningful and positive possibilities of experiences for the individual. In addition to that, as public spaces are not used by isolated individuals, the cultural and social interactions occurring in such spaces, are inasmuch part of the single individuals cognitive niche constructions as they also provide sources for social and normative feedback loops, creating overlapping cognitive niches.

The example of the sun craving people moving along with the sun's rays to enjoy as much of its pleasant warmth as possible, is an apt, simple example to illustrate these dynamics. The more flexible the public space is in terms of mobile furniture, free areas and direct sunlight,

the more it invites its users to adapt their activities or positions and or even change its setting. Being able to visit the public space more often, the individual user will continuously learn on which times of the day the square is struck with the most sunlight. Furthermore, through movements and activities of other users, the individual will also perceive and learn, which areas of the space might be designated to children playing soccer, for instance, or to what extent a change of the space's set up is tolerated. Such social knowledge might rather be acquired implicitly without any outspoken rules, just by being surrounded by other active users.

6. Discussion and Conclusion

Throughout the thesis the relation between public spaces, their users and the subjective quality of emergence has been discussed and analysed in the context of different theoretical frameworks and a small explorative, ethnographic case study. In order to shed new light on the human-environment debate and answer the research question *How do modest forms of social interaction affect the subjective quality of experience in public spaces?*, a first model integrating new theoretical stances on physically situated cognition and the subjective quality of experiences has been proposed. In general, this investigation has led to the generation of four main, summarising results:

- (1) A public space and its user compose one dynamic, co-constituted system.
- (2) Open-minded public spaces with unspecified functions and usages are perceived and experienced more positively.
- (3) Individuals transform public spaces into places of meaning and value by constructing cognitive niches that afford possibilities for positive experiences.
- (4) Modest forms of social interactions affect the subjective quality of experiences on multiple levels.

The results will be interpreted and discussed in the overall context of the thesis in the subsequent section.

6.1. Happy Places & Happy People in Real-World Context

6.1.1. Public Space and Individual as one Dynamic, Co-Constituted System

The cognising, public space using individual and the public space as immediate external environment have been the two main constitutive parts of the analysis. Embedded in the theoretical perspective of the 4E approach to cognition, the notion of a passively consuming and input-output processing individual has been rejected early on (Thompson, 2007; Varela et al., 1991; Wilson, 2002). Instead, the view of the cognising individual that entails the mind, body as well as its immediate environment has been employed and, hence, applied to the context of urban experiences and the subjective quality of such experiences. The proposed model has expanded on this notion by postulating that a public space and the individual present comprise one dynamically, co-constituted system (Colombetti, 2010; Jelic et al., 2016; Malinin, 2016;

Thompson, 2007). As the dynamical constitution process occurs by means of structural coupling through the individual's interactions as a bodily agent with and in the environment, the individual's body is as much part of the system as the qualitative structures of the environment and the individual's perceptual processes. The external, material, cultural and social environment as a public space, is perceived and qualitatively experienced on the basis of the sensorimotor couplings and patterns initiated by the exploring individual.

This claim entails interesting insights. It firstly, emphasises the role of subjectivity in public space experience and general human-environment relations, and secondly, complements the debate on the particular quality of experiences outlined by the theory of flow. Subjectivity, in terms of subjective experiences, should be considered as a fundamental part of any human-environment relation. The dynamical system of individual and environment entirely evolves building upon continuously elicited sensorimotor patterns of the acting, interacting and perceiving individual (Barsalou, 1999; Varela et al., 1991). Consequently, the resulting structural coupling that defines not just the qualitative experience of the individual but also the qualitative structures and elements of the environment, is built upon a subjective past of sensorimotor contingencies, accumulating as embodied knowledge (Varela et al., 1991). Thus, it is the subjective experience informed by embodied knowledge that guides an individual's behaviour in public spaces and sketches his or her concrete experiences in the same environment. Furthermore, the individual's subjectivity should also be implemented when describing a public space or any other external environment. The dynamically co-constituted claim proposes that only through the laws of embodiment, the external environment acquires its experiential dimension and meaningful points of references (M. Heras-Escribano, 2019; Malinin, 2016).

Secondly, the emphasis on subjective experiences also evidently connects to the topic of the quality of experience in public spaces. In the context of this thesis, the theory of flow has been selected as a theoretical approach towards dismantling what constitutes the subjective quality of experience (Csikszentmihalyi, 1991). As argued earlier, people reach states of optimal experience and flow when they find themselves in an equally balanced mindset of internal motivations, their bodily as well as cognitive capacities and the externally perceived possibilities to act and interact in challenging though accomplishable ways (Nakamura & Csikszentmihalyi, 2014). The system comprising the cognising individual and the public space thereby illustrates as much of the dynamically co-constituted system as the flow-experiencing-individual and its immediate environment and scope of action. Only through a balanced match between what the individual perceives informed by his or her embodied knowledge and what the environment

affords in terms of possibilities for actions, meaningful, hence, positive experience can be elicited.

Thus, drawing on this established view of a dynamically co-constituted system between the cognising individual and an immediate environment, it could be argued that a public space should only be analysed in connection with the individuals that use it as well as the individual user should only be examined in light of the very public space it acts in and interacts with.

6.1.2. The Need for Open-Minded Public Spaces

Complementing the premise of the dynamical co-constituted system, it has also been deduced that through continuous, circular exchanges and interaction between individual and environment, a public space is transformed into a place of meaning and value (Malinin, 2016; Thompson, 2007). The concept of *participatory sense-making* has thereby been introduced as a key determinant of meaningful subjective experiences. The individual as an embodied agent, embedded in the environment, actively explores the space in re-current circles of engagements (Di Paolo & Thompson, 2014). What emerges from these circular interactions is not just a fine tuning of the individual's perceptual apparatus but also the development of a subjective *cognitive niche* (Malinin, 2016; Rietveld & Kiverstein, 2014). The constructed cognitive niche comprises past and potential possibilities of meaningful, hence, positive experiences that are perceivable by the individual. In this context, it has been argued that the more possibilities for interactions, there are in an environment, the more bodily engagements will occur, and hence, the better, value-richer and more complex the constructed cognitive niche will turn out.

Drawing on this theoretical premise, it can be argued that an environment that affords many, diverse and unspecified possibilities for interaction is experienced more positively. A public space that does not have any prescribed functionality, such as a designated consumption area, invites its user for an active exploration and diversified usage. Based on the theoretical findings, the thereby initiated circular loops of detection and perceptually-guided actions, enable the user to create a subjective niche for positive experience. With each interaction, the individual generates another value-rich possibility of engagement, on which he or she can again act upon during the next encounter (Manuel Heras-Escribano & De Pinedo-García, 2018). The individual thereby simultaneously shapes and refines the internal bodily abilities and perceptual attunement, while at the same time the environment becomes more furnished with perceivable possibilities for interactions (Malinin, 2016; Rietveld & Kiverstein, 2014). In accordance with this process, the chance for entering a state of flow and optimal experiences increases as well, as the balance between internal abilities and external possibilities aligns steadily by the continues

loop exploration, detection, action and modification (Csikszentmihalyi, 1991; Manuel Heras-Escribano & De Pinedo-García, 2018). Thus, a public space without a specific, predefined function allows the user to actively explore the opportunities for engagements, which in turn initiates the process of cognitive niche constructions, necessary for enhancing possibilities for positive experiences.

This is in line with the proposed model as well as it is supported by results derived from the case study. Participants reported that they particularly appreciated the possibility to come to a public space without any specific intentions in mind. Unscheduled and seemingly purposeless dwelling was frequently indicated as reason for visiting a public space as well as positive experience. Furthermore, data gathered from the participant survey revealed that the approached public space users generally indicated relatively high levels of concentration, engagement and enjoyment while being immersed in their current activities. This led to conclude that individuals are able to enter an experiential state comparable to states of flow and optimal experience in public spaces. Seemingly, they do this by means of perceived possibilities for meaningful engagements emerging from subjective, personal preferences and perception rather than successful interaction with predefined usages available in public spaces. A concept that accounts for the subjectivity in perceiving possibilities for meaningful, positive experiences has been introduced as *affordance* and its role will be explained in the following.

6.1.3. Public Spaces as Part of Cognitive Niches

It has been argued that meaning and value of objects, events, interactions or situations stems from the possibilities of experiences they point at rather than from some specified mental representation they refer to (Robinson & Pallasmaa, 2015; Varela et al., 1991). Furthermore, it has been outlined how an individual refines his or her sensorimotor abilities of perception by recurrent bodily engagements with its environment, which in turn again update internal abilities and expectations in accordance with the explored environment (Barsalou, 1999; Thompson, 2007; Wilson, 2002). The whole circular process leads to the construction of a subjective *cognitive niche* that comprises possibilities for meaningful interactions eliciting positive experiences (Malinin, 2016; Rietveld & Kiverstein, 2014). The accumulated possibilities for interaction, in this context, are referred to as *affordances*. A cognitive niche, hence, encompasses affordances that are relevant to the individual's behaviour and interactions to engage in positive and meaningful experiences (Rietveld & Kiverstein, 2014). Thus, public spaces and their experiential quality are defined by the affordances they provide to the individual, subjective user. The concept of affordances thereby illustrates an essential aspect of the model and the human-

environment relation, as it incorporates all dimensions of public space experiences: The bodily dimension, as affordances evolve from the accumulated perceptual and motor knowledge (Thompson, 2007; Varela et al., 1991). The social and cultural dimension, as affordances are culturally and normatively situated and the physical and structural dimension, as they account for how concrete features of the material environment can affect an individual's behaviour (Gibson, 1979; Goffman, 1963; Rietveld & Kiverstein, 2014).

Essential within this notion is that all affordances available in an environment are directly related to the perception of the individual and shaped by the variety of social practices in this environment. The cognitive niche, hence, comprises the abilities as well as norms necessary and conditional for the detection of affordances (Rietveld & Kiverstein, 2014). In this way, affordances account for an individual's subjectivity as well as for his or her embeddedness in a cultural and social environment, which is particularly relevant and true for human environments such as public spaces. This again links back to the co-constitution of the individual and the public space. On the one hand, public space involving its material layout as well as the sociocultural practices and social normativity specify certain rules and interactions for the individual. On the other hand, the individual perceives the public space and situates his or her self in the offered sociocultural practices and social normativity by means of the detected and acted upon affordances (Rietveld & Kiverstein, 2014). It is another circular loop of perception and action through which the individual learns how to perceive and engage its environment in a way that it adheres to the present social normativity as well as it pleases his or her subjective experience (Goffman, 1963; Rietveld & Kiverstein, 2014). Therefore, it can be postulated that affordances are informed by the co-specificity between the individual's abilities for successful detection of relevant possibilities for meaningful interaction and the public space's available practices and features matching the individual's desired form of experience. What emerges is a cognitive niche, constructed for positive experiences in public spaces, entailing various potentialities of actions, situations and practices allowing for such optimal experience.

Similar results were reflected by the conducted case studies. First of all, among the observed activities in public spaces as well as reported during the interviews and the survey, many different, diverse activities occurring in the public spaces were found. As the general atmosphere and the individuals' subjective indication of enjoyment, engagement and concentration implied, the chosen public spaces were generally experienced positively. As there did not appear to be one predominant pursued activity present in the public spaces, it can be concluded that the individual public space users engaged in activities according to their

subjective needs and abilities as well as the perceived possibilities afforded by the environment. Furthermore, participants of the interviews even stated that they particularly enjoy spontaneous and unscheduled dwelling in the public spaces. Having the possibility to come to an openly accessible space without any predefined intention or usage in mind, appeared to be especially attractive. Besides that, the observed and mentioned activities do all categories as *optional activities*, whose presence can be interpreted as an indication for a public space of high quality (Gehl, 2011). Thus, it can be concluded that the individual public space users interacted with the respective spaces by means of various engagements, interactions or activities which afforded them the highest subjective quality of experience.

6.1.4. The Multilevel Influence of Modest Forms of Social Interaction

Finally, based on the established dynamical co-constitution of individual and public space, the notion that individuals construct their subjective cognitive niches in interaction with the environment to enhance positive experiences and the introduced concept of affordance as essentially, constitutive part of the cognitive niches, the role of modest forms of social interaction in public spaces has been disclosed. The reviewed literature, the conducted case study as well as the generated model suggest a multifaceted involvement of modest forms of social interaction on various levels.

Firstly, public spaces are inherently public spaces that are predominantly defined by the activities occurring in them (Gehl, 2011; Jacobs, 1961; Walzer, 1986). As demonstrated through the results of the conducted case study, which are also in line with insights from earlier empirical studies and theories such as suggested by Jan Gehl, modest forms of social interaction are among the most frequently pursued social activities observable in public spaces. People appear to particularly enjoy the passivity of being surrounded by other people, such as being exposed to social noises or simply observing other people (Gehl, 2011; Gehl et al., 1977; Goffman, 1963). Therefore, it has been argued that any type of social encounter, such a modest form of social interaction provides a source of social, affective and normative feedback that nourishes the structural coupling of individual and environment (Csikszentmihalyi, 1991; Jelic et al., 2016; Malinin, 2016).

As elaborated earlier, the individual continuously explores and engages with his or her environment and thereby evolves and refines his or her sensorimotor abilities. Based on such accumulations of embodied abilities, the individual constructs a cognitive niche, consisting of various affordances, that allow engagements with meaningful and positive experiences in the present environment (Thompson, 2007; Varela et al., 1991). However, especially in the human

world, individuals need to develop their perceptual and motor skills as well as their social and normative knowledge in order to successfully engage with their environment. Sociocultural practices, including modest forms of social interactions in that sense serve as feedback necessary for maturing a sense of social normativity. As Goffman (1963) has argued, public spaces are the perfect ground for observing how groups of people behave according to some unspoken normative rules. Thus, modest forms of social interaction are part of the recurring, dynamic process of coupling between the individual and the environment. In other words, observing, hearing or generally perceiving how other people use a public space contributes as much to the sense-making process of the individual engaging with what surrounds it, as all the sensorimotor engagements involved.

Secondly, modest forms of social activities can be considered as invited behaviour afforded by the public space. The public space thereby presents an affordance itself, as it offers the individual the possibility to engage in modest forms of social activities. Such interaction is experienced positively, so that the individual might actively scan a public space the next time, to again engage in a positive and meaningful experience. Modest forms of social interaction as a result become part of the subjectively constructed cognitive niche in the form of invited behaviour by the public space. Again, the individual requires the sensorimotor as well as normative skills to detect the possibility for socially adequate engagement in a public space (Gibson, 1979; Goffman, 1963; Rietveld & Kiverstein, 2014). Public spaces, hence possess the dual characteristic of being both; the product of as well as the producer of social interactions (Lloyd & Auld, 2003).

Considering public spaces themselves as affordances offering meaningful ways for positive experience eliciting interaction in the form of modest forms of social interaction sheds light on two more, interesting aspects. Firstly, it further emphasises the subjectivity of experience in a public space. Since individuals form their desirable cognitive niches based on personal skills and preferences, the same public space can offer many different ways of interactions to different individuals. Nevertheless, a public space is also simultaneously a space for social mingling and exchange, hence, while its definition as affordances highlights the subjectivity, it also draws on the continuous social interaction necessary for acquiring the relevant skillful mastery for manoeuvring through it. In other words, while an individual is always dynamically coupled with the environment itself as a material space, there is also a continuously dynamic-coupled perceiving-and-acting between people in the same space (Gibson, 1979; Rietveld & Kiverstein, 2014).

To conclude, modest forms of social interaction affect the subjective quality of experience in public space on various levels. Firstly, they serve as continuous social and cultural feedback embedded in the dynamic coupling circles between individual and environment. Resulting from that, the individual not just experiences a positive atmosphere within the environment accelerating the personal mood but also develops a sense of social normativity and skilled mastery to successfully engage in adequate interactions within the public space. Secondly, literature as well as the case study results have demonstrated that positive experiences are elicited through modest forms of social interactions. People tend to appreciate being passively surrounded by other people and might even experience moments of flow. In that context, a public space itself can be considered as an affordance.

6.2. Implications of the Happy Place & Happy People Model

The thesis' results shed new light on the nature and role of public spaces in connection to subjective human experiences and the quality of such individual experience. Conceptually, it has been concluded that a public space is dynamically coupled with the perceiving and interacting individual user. The human body is as much of an integrated part of the co-constituted system as the material, social and cultural context. Subjective, meaningful experience emerges from the continuous, explorative interaction of the individual in public space. Hence, a space that offers a broad and diverse range of possible interactions and situations can generally elicit higher qualities of subjective experiences. Experiential diversity, in that sense, shapes the individual's perceptual, social and motor skills necessary for detecting relevant opportunities for actions and behaviours offered by the environment and according to his or her subjective needs, desires, skills and motivations. A skilled individual constructs a cognitive niche within the public space that offers meaningful ways for positive experience eliciting interactions. The public space can thereby be considered as an affordance itself as well as it entails plenty of different affordances in line with the cognitive niche. These findings can serve as new guidelines for design principles for future public spaces. However, due to the limited scope of the thesis and the conceptual focus it is not further elaborated on such possible principles at this point.

While these findings primarily draw on a new theoretical attempt to conceptualise and model the general human-environment relation and the emergence of subjective quality of experience, they also feed into the general debate on the role of public spaces in overall quality of life evaluations and individual citizen's subjective well-being. The perceived role and function of public spaces in shaping the public life of a city has undergone several changes throughout

the past decades (Schmidt & Németh, 2010). Such changes can generally be told to stem from shifts in policy priorities concerning urban interventions and city planning or to stem from current trends in public space designs. The results derived from this thesis claim that public spaces carry an unquestionable potential in affecting the life and activities occurring in them, hence, the quality of experience, as they are an integrated part of every subjective cognitive experience. Furthermore, the findings propose that public spaces should be openly designed and structured so that they offer the widest possible range of interactions and situations, allowing a diversity of individuals to use it. Only then, public spaces can foster urban happiness and increase the subjective quality of life.

Unfortunately, current trends in city planning and policy decision entail rather opposite notions of public spaces usage and design to the suggested framework of the thesis. Past decades have brought about a focus on growth promotions, commercialisation and privatisation of public spaces (Lloyd & Auld, 2003; Schmidt & Németh, 2010). Overarching goals of enhancing city image and economic prosperity have fuelled the construction of functionally pre-determined, controlled, sanitised and consumption-based urban spaces (Lloyd & Auld, 2003). Following from that, contemporary public spaces become increasingly controlled, secured, privately managed and mostly attract consumption-oriented users. They thereby not just decrease social as well as activity diversity and turn into homogenised spaces but also foster the individual public space user as silent observer and passive consumer (Lloyd & Auld, 2003).

According to the thesis' results as well as in line with other experts, such highly regulated and sanitised public spaces can prove to be barrier for people to find pleasure in public space interaction (Cattell et al., 2008; Gehl, 2011; Jacobs, 1961; Lefebvre & Nicholson-Smith, 1991; Lloyd & Auld, 2003). As the case study embedded in this thesis as well as previous empirical studies have demonstrated, casual pleasures and positive experiences can be derived from non-commercial activities such as meeting people, building networks, dwelling around and feeling connected through shared experiences. It is especially the ability of a public space to have a social value that determines its quality of experience and such social value evolves from the maintenance and continuous interaction of people (Gehl, 2011; Goffman, 1963; Lloyd & Auld, 2003). In these terms, social value is best generated in openly designed spaces and settings that attract individuals as well as diverse groups (Lloyd & Auld, 2003). Public spaces, in which people can interact, actively as well as in modest forms, enhance the subjective quality of experience as they are always stimulating and rich in human experience. Thus, a qualitative good public space should offer a diversity of activities and attract a diversity of people, as this appears to be what

draws people out in public, gives them pleasure and turns material spaces into spaces with social, cultural and subjective value and meaning.

Besides the proposition that public spaces encouraging quality of life should stimulate and afford a diversity of experiential interactions, the thesis also emphasised the importance of subjectivity in qualitative public space evaluations. Classical empirical approaches in urban science and city planning research are often data driven and rely on observed behavioural data only. While the contribution of such methodologies is not to be belittled, the individual's subjective experience should be considered as a valuable and important source of information as well. The thesis' generated theoretical model has outlined how the cognising individual's subjectivity of interactions, embodied knowledge and experience is fundamentally embedded in the constitution of a public space as well as its experiential dimension. People may interact with objectively defined public spaces, but what they perceive are subjectively defined public spaces, which provide them the ground for drawing meaning and generating positive experiences (Malinin, 2016; Robinson & Pallasmaa, 2015). Thus, any theoretical, empirical or applied attempts to evaluate the quality of a public space should reflect the dynamic relation between an individual's subjective perception, contextual influences and observable actions and accomplishments (Lloyd & Auld, 2003).

One of the key findings of the thesis holds and advocates the view that public spaces carry significant potential in affecting public life, quality of public life and the quality of subjective experiences. Through the theoretical concept of affordances this claim has found ground in the conceptual underpinning of human-environment relations. However, in a more applied and context relative sense, it can be further interpreted in terms of spatial planning considerations. Public spaces have been defined as dynamic and creational social spaces that possess the characteristic of simultaneously shaping the social life and interactions occurring in them as well as being shaped by the very same dynamics. As the thesis has clearly elaborated, the social and physical world do mutually determine each other. Thus, any spatial design or planning projects consideration are always part of social interactions and relation (Lloyd & Auld, 2003).

6.3. Future Outlook and Last Thoughts

The thesis provides a new view on the relation between the human and environment and the nature of subjective experiences emerging from it. Based on an extensive literature research, it integrates theoretical concepts into a conceptual model drawing on positive psychology, urban science and the embodied-enacted view of cognition. The model thereby brings forth a

promising theoretically-strong, interdisciplinary perspective on the role and character of public spaces in shaping the subjective as well as overall quality of experience and public life. The generated model is a first theoretical attempt to explain the human-environment dynamics and leans on theoretical concepts deduced from the literature research and integration only. Even though the case study fed into the model and provided a first empirical confirmation of the hypothesised dynamics, there is much scope to gather more empirical evidence. Thus, future research projects should focus on generating further empirical support for the model. Subsequent studies on the quality of public spaces could illuminate the nature of subjective experience of individuals as well as groups in relation to their interaction with the space, for instance. In this context, investigations would particularly benefit from more in-depth first-person accounts on subjective experiences and moments in public spaces. An accumulation of gathered subjective, biographical accounts on positive experience in different public spaces could eventually be used to identify common modes of optimal and positive experience in urban settings. Building on such insights and identification, classified positive experience eliciting aspects of urban settings and public spaces could be mapped and serve as orienting guidelines for upcoming urban restructuring and intervention projects. Public spaces would, hence, be designed fostering and facilitating high qualities of experience enlarging on already existing, known positive aspects of the environment rather than subtracting those that impede positive experience.

Even though the thesis draws on a large and complex body of theoretical work, it eventually advocates for a simple focus on subjective experiences. Pleasure and a high quality of experience can be found in simple material aspects bringing forth a wide-range of unspecified enjoyable activities. Rather than seeing public spaces as an objective medium for economic value maximisation and homogenised entertainment, they should be considered as flexible, inviting platforms that connect people among each other as well as with their urban environment. They are as much of an active part of an individual's quality of life as of the overall urban quality of life. However, the responsibility for a qualitatively high experience not just lies in the material layout affording diverse possibilities for actions and experience but also in the active exploration and curiosity-driven, engaged individual. Therefore, conceiving and designing public spaces as open spaces accessible for a diverse range of people via various interactions amplifies their potential in increasing the quality of urban life as well as reintegrating the individual as an active member of public life.

References

- Anderson, M. L. (2003). Embodied Cognition: A field guide. *Artificial Intelligence*, 149, 91-130.
doi:10.1016/S0004-3702(03)00054-7
- Armenta, C. N., Ruberton, P. M., & Lyubomirsky, S. (2015). Psychology of Subjective Well-Being. In *International Encyclopedia of the Social & Behavioural Sciences* (2nd ed., Vol. 23, pp. 648-653). Oxford: Elsevier.
- Barsalou, L. (1999). Perceptions of Perceptual Symbols. *Behavioral and Brain Sciences* 22(4).
doi:10.1017/S0140525X99532147
- Bermúdez, J. L. (2014). *Cognitive Science - An Introduction to the Science of the Mind* (2 ed.): Cambridge University Press.
- Burawoy, M. (1998). The extended case method. *Sociological Theory*, 16(1), 4-33.
- Cattell, V., Dines, N., Gesler, W., & Curtis, S. (2008). Mingling, observing, and lingering: Everyday public spaces and their implications for well-being and social relations. *Health & Place*, 14, 544-561. doi:doi:10.1016/j.healthplace.2007.10.007
- Cattell, V., & Herring, R. (2002). Social capital and well being: generations in an East London neighbourhood. *Journal of Mental Health Promotion*, 1(3), 8-19.
- Colombetti, G. (2010). Enaction, Sense-Making, and Emotion. In J. Stewart, O. Gapenne, & E. Di Paolo (Eds.), *Enaction: Toward a New Paradigm for Cognitive Science*. Cambridge, Massachusetts: The MIT Press.
- Csikszentmihalyi, M. (1991). *Flow - The Psychology of Optimal Experience*. New York: Harperperennial.
- De Jaegher, H., & Di Paolo, E. (2007). Participatory sense-making: An enactive approach to social cognition. *Phenomenology and the Cognitive Science*, 6, 485-507. doi:10.1007/s11097-007-9076-9
- Desmet, P., & Pohlmeier, A. E. (2013). Positive Design: An Introduction to Design for Subjective Well-Being. *International Journal of Design*, 7(3), 5-19.

- Dewey, J. (2005). *Art as Experience*: Penguin.
- Di Paolo, E., & Thompson, E. (2014). The Enactive Approach. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 68-78): Routledge/Taylor & Francis group.
- Dove. (2011). On the need for embodied and dis-embodied cognition. *Frontiers in Psychology*, 1. doi:10.3389/fpsyg.2010.00242
- Ellis, G. D., & Voelkl, J. E. (1994). Measurement and Analysis Issues with Explanation of Variance in Daily Experience Using the Flow Model. *Journal of Leisure Research*, 26(4), 337-356. doi:https://doi.org/10.1080/00222216.1994.11969966
- Gehl, J. (1969). *Attraktioner på Strøget*. Retrieved from Copenhagen:
- Gehl, J. (1989). A Changing Street Life in a Changing Society. *Places*, 6(1). Retrieved from <https://escholarship.org/uc/item/46r328ks>
- Gehl, J. (2011). *Life Between Buildings - Using Public Spaces*. Washington: Island Press.
- Gehl, J. (2021). Gehl People. Retrieved from <https://gehlpeople.com>
- Gehl, J., & Svarre, B. (2013). *How to Study Public Life*. Washington: Island Press.
- Gehl, J., Thornton, S., & Brack, F. (1977). *The interface between public and private territories in residential areas: a study by students of Architecture at Melbourne University*. Melbourne University.
- Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Psychology Press.
- Goffman, E. (1963). *Behaviour in Public Spaces*. New York: The Free Press.
- Gray, D. E. (2004). *Doing Research in the Real World*. London: SAGE.
- Haybron, D. M. (2008). Philosophy and the science of subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 17-43). New York, NY: Guilford Press.
- Heras-Escribano, M. (2019). Pragmatism, enactivism, and ecological psychology: towards a unified approach to post-cognitivism *Synthese*, 196, 1-27. doi:doi.org/10.1007/s11229-019-02111-1

- Heras-Escribano, M., & De Pinedo-García, M. (2018). Affordances and Landscapes: Overcoming the Nature-Culture Dichotomy through Niche Construction Theory. *Frontiers in Psychology*, 8(2294). doi:10.3389/fpsyg.2017.02294
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Vintage Books.
- James, W. (1981). *The Principles of Psychology*. Cambridge: Harvard University Press.
- Jelic, A., Tieri, G., De Matteis, F., Babiloni, F., & Vecchiato, G. (2016). The Enactive Approach to Architectural Experience: A Neurophysiological Perspective on Embodiment, Motivation, and Affordances. *Frontiers in Psychology*, 7. doi: 10.3389/fpsyg.2016.00481
- Johnson, M. (2008). What makes a body? *Journal of Speculative Philosophy*, 22(3). doi:10.1353/jsp.0.0046
- Johnson, M. L. (2015). The Embodied Meaning of Architecture. In S. Robinson & J. Pallasmaa (Eds.), *Mind in Architecture - Neuroscience, Embodiment and the Future of Design* (pp. 33-50). Cambridge, Massachusetts: The MIT Press.
- Kerstetter, D., Shen, X., Yi, X., Pan, B., Zhang, G., Li, R., & Gao, J. (2020). Sources of Happiness: A Mixed Methods Phenomenological Study of Factors Affecting Residents' Subjective Wellbeing in Shenzhen, China. *Psychology Reports*, 0(0), 1-33. doi:10.1177/0033294120971742
- Kiverstein, J. (2012). The Meaning of Embodiment. *Topics In Cognitive Science*, 4, 740-758. doi: 10.1111/j.1756-8765.2012.01219.x
- Kyttä, M., Broberg, A. K., Haybatollahi, S. M., & Schmidt-Thomé, K. (2015). Urban Happiness: context-sensitivity study of the Social sustainability of urban settings. *Environmental and Planning B Planning and Design*, 47(1), 1-24. doi:10.1177/0265813515600121
- Larson, R., & Csikszentmihaly, M. (1978). Experiential correlates of time alone in adolescence. *Journal of Personality*, 46(4), 677-693. doi: https://doi.org/10.1111/j.1467-6494.1978.tb00191.x

- Larson, R., Csikszentmihaly, M., & Graef, R. (1980). Mood variability and the psychosocial adjustment of adolescents. *Journal of Youth and Adolescence*, 9, 469-490. doi:<https://doi.org/10.1007/BF02089885>
- Lefebvre, H., & Nicholson-Smith, D. (1991). *The production of space* (Vol. 142). Oxford: Blackwell.
- Leitner, H., Peck, J., & Sheppard, E. (2020). *Urban Studies Inside/Out - Theory, Method, Practice* (R. Rojek Ed.). London: Sage.
- Lewinsohn, P. M., & Graf, M. (1973). Pleasant activities and depression. *Journal of Consulting and Clinical Psychology*, 41(2), 261-268. doi:<https://doi.org/10.1037/h0035142>
- Lloyd, K., & Auld, C. (2003). Leisure, public space and quality of life in the urban environment. *Urban Policy and Research*, 21(4), 339-356. doi:10.1080/0811114032000147395
- Magyaródi, T., & Oláh, A. (2015). A Cross-Sectional Survey Study About the Most Common Social and Solitary Flow Activities to Extend the Concept of Optimal Experience. *Europe's Journal of Psychology*, 11(4), 632-650. doi:10.5964/ejop.v11i4.866
- Malinin, L. H. (2016). Creative Practices Embodied, Embedded, and Enacted in Architectural Settings: Toward an Ecological Model of Creativity. *Frontiers in Psychology*, 6. doi:10.3389/fpsyg.2015.01978
- Maturana, H. R., & Varela, F. J. (1980). Problems in the Neurophysiology of Cognition. In *Autopoiesis and Cognition* (Vol. 42, pp. 41-47). Dordrecht: Springer.
- Merleau-Ponty, M. (1962). *Phenomenology of Perception* (Vol. 1): Routledge & Kegan Paul.
- Nakamura, J., & Csikszentmihalyi, M. (2014). The Concept of Flow. In *Flow and the Foundations of Positive Psychology*. Dordrecht: Springer.
- Petermanns, A., & Pohlmeier, A. E. (2014). *Design for subjective well-being in interior architecture*. Paper presented at the Annual Architectural Research Symposium Finland.
- Rad, V. B., & Ngah, I. B. (2014). Assessment of Quality of Public Urban Spaces. *Sci. Int(Lahore)*, 26(1), 335-338.

- Rietveld, E., & Kiverstein, J. (2014). A Rich Landscape of Affordances. *Ecological Psychology*, 26(4), 325-352. doi:<https://doi.org/10.1080/10407413.2014.958035>
- Robinson, S., & Pallasmaa, J. (2015). *Mind in architecture. Neuroscience, embodiment, and the future of design*. Cambridge: MIT Press.
- Schmidt, S., & Németh, J. (2010). Space, Place and the City: Emerging Research on Public Space Design and Planning. *Journal of Urban Design*, 15(4), 453-457. doi:10.1080/13574809.2010.502331
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive Psychology: An Introduction. *American Psychologist*, 55(1), 5-14.
- Sepe, M. (2017a). Placemaking, livability and public spaces. Achieving sustainability through happy places. *The Journal of Public Space*, 2(4), 63-76. doi:10.5204/jps.v2i4.141
- Sepe, M. (2017b). The Role of Public Space to Achieve Urban Happiness. *The International Journal of Sustainable Development and Planning*, 12(4), 724-733. doi:10.2495/SDP-V12-N4-724-733
- Shaffer, D. R., & Kipp, K. (2010). Cognitive Development: Piaget's Theory and Vygotsky's Sociocultural Viewpoint. In *Developmental Psychology: Childhood & Adolescence* (8th ed., Vol. 2): Wadsworth.
- Smallwood, J., & Schooler, J. W. (2015). The Science of Mind Wandering: Empirically Navigating the Stream of Consciousness. *The Annual Review of Psychology*, 66, 487-518. doi:10.1146/annurev-psych-010814-015331
- Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.
- Tillner, S., & Willinger, A. (2021). Tillner & Willinger. Retrieved from <https://www.tw-arch.at/index.php>

- UN-Habitat. (2018). SDG Indicator 11.7.1 Training Module: Public Space. In. Retrieved from https://unhabitat.org/sites/default/files/2020/07/indicator_11.7.1_training_module_public_space.pdf
- van Dijk, J., Hummels, C., & van der Lugt, R. (2014). *Beyond Distributed Representation: Embodied Cognition Design supporting socio-sensorimotor couplings*. Paper presented at the Proceedings of the 8th International Conference on Tangible, Embedded and embodied Interaction, Munich, Germany.
- Varela, F. J., Thompson, E., & Rosch, E. (1991). *The Embodied Mind - Cognitive Science and Human Experience*. London: The MIT Press.
- Veenhoven, R. (2011). Greater Happiness for a greater Number - Is that possible? If so, how? In *Designing Positive Psychology: Taking Stock and Moving Forward* (pp. 396-409). New York: Oxford University Press.
- Walzer, M. (1986). Pleasures & Costs of Urbanity. *Public Space - A Discussion on the Shape of our Cities Fall*, 470-475.
- Wien, S. (2021). Wien GV. Retrieved from <https://www.wien.gv.at/stadtplan/>
- William H., W. (1980). *The Social Life of Small Urban Spaces*. Project for Public Spaces.
- Wilson, M. (2002). Six views of embodied cognition. *Psychonomic Bulletin & Review*, 9(4), 625-636. doi:10.3758/bf03196322
- Ziemke, T. (2001). The Construction of ‚Reality‘ in the Robot: Constructivist Perspectives on Situated Artificial Intelligence and Adaptive Robotics. *Foundations of Science*, 6, 163-233. doi:<https://doi.org/10.1023/A:1011394317088>

Appendix

Abstract English

Public spaces significantly shape the quality of urban life. Through the interactions we engage in, the people we meet and activities we pursue in the spaces we inhabit, our daily quality of experience changes strongly. By combining ideas from urban science, the enactive-embodied approach to cognition and the field of positive psychology, the individual's subjective quality of experience is investigated in the context of modest forms of social interaction in public spaces.

On a conceptual level, the dynamic relation between the experiencing public space user and the public space is grounded in the embodied- enacted view of cognition. The cognising individual and her immediate environment are constituted as one dynamically and structurally coupled system. Through the continuous explorations and interactions based on the individual's embodiment and emerging perceptual attunement, the quality and value of the individual's experience unfolds with and within the public space. A proposed conceptual model illustrating the interdependencies of the human-environment relation further emphasises the active role of the individual in shaping and engaging in opportunities for meaningful experiences in public spaces. More precisely, qualitatively high experiences are facilitated through the construction of a cognitive niche according to the individual's bodily, social, motivational and cultural embodied knowledge.

In addition to the thorough theoretical work, subjective experiences in public spaces are investigated in real-world context as part of one small ethnographical case study in two Viennese public spaces. Through observational stationary activity mapping, a participant survey and semi-structured, open-ended interviews, it is demonstrated that people generally enjoy visiting public spaces alone, pursue a wide range of activities and especially appreciate lively, social atmospheres and the possibility of being passively surrounded by other people in public spaces. Overall, the findings postulate that public spaces should be considered as affordances that carry the potential to positively influence the quality of urban life. In this context, modest forms of social interaction affect the subjective quality of experience on multiple levels and are best afforded in open-minded public spaces with no pre-defined usages. Building on these insights, future research could elaborate on guiding design principles for future public spaces as well as further explore more in-depth first-person accounts on public space experiences to eventually identify common aspects of positive experience in urban settings.

Abstrakt Deutsch

Öffentliche Räume prägen maßgeblich die Qualität des städtischen Lebens. Sowohl die Menschen, mit denen wir interagieren, sowie die Aktivitäten, denen wir nachgehen in den Räumen, die wir bewohnen, verändert unsere tägliche Erlebnisqualität stark. Durch kombinierte Ideen der Stadtforschung, des enaktiven-verkörpernten Ansatz der Kognition und der positiven Psychologie untersucht diese Arbeit die subjektive Erlebnisqualität des Einzelnen im Zusammenhang von passiven Formen der sozialen Interaktion im öffentlichen Raum.

Konzeptuell wurde die Beziehung zwischen dem öffentlichen Raum und seinem Nutzer:in aufbauend auf dem enaktiven-verkörpernten Ansatz der Kognitionswissenschaften analysiert. Das kognitive Individuum und seine unmittelbare Umgebung werden dabei als ein dynamisch und strukturell gekoppeltes System konstituiert. Durch die kontinuierlichen Erkundungen und Interaktionen, die auf der Verkörperung des Individuums und der entstehenden Wahrnehmung beruhen, entfaltet sich eine subjektive Qualität der Erfahrung mit und innerhalb des jeweiligen öffentlichen Raums. Ein erarbeitetes Modell, das die Wirkungszusammenhänge der komplexen Mensch-Umwelt-Beziehung veranschaulicht, unterstreicht die aktive Rolle des Individuums bei der Gestaltung und Nutzung der Möglichkeiten für bedeutungsvolle Erfahrungen im öffentlichen Raum. Genauer gesagt, werden qualitative Erfahrungen durch die Konstruktion einer kognitiven Nische entsprechend dem körperlichen, sozialen und kulturellen verkörperten Wissen des Einzelnen ermöglicht.

Zusätzlich zu der theoretischen Analyse, wurden die subjektiven Erfahrungen in öffentlichen Räumen im Rahmen einer kleinen ethnographischen Fallstudie in zwei Wiener öffentlichen Räumen untersucht. Mittels einer Aktivitätskartierung, einer Teilnehmer:innen Befragung und einzelner Interviews konnte gezeigt werden, dass sich Menschen generell gerne alleine im öffentlichen Raum aufhalten, dabei einer Vielzahl von Aktivitäten nachgehen und vor allem eine lebendige, soziale Atmosphäre und die Möglichkeit, von anderen Menschen im öffentlichen Raum passiv umgeben zu sein, schätzen. Basierend auf den Ergebnissen wird vorgeschlagen öffentliche Räume als Affordanzen zu betrachten, die das Potenzial haben, die Qualität des städtischen Lebens positiv zu beeinflussen. In diesem Zusammenhang beeinflussen passive Formen der sozialen Interaktion die subjektive Erlebnisqualität auf mehreren Ebenen und werden am besten in öffentlichen Räumen ohne vordefinierte Nutzungen ermöglicht. Darauf aufbauend könnten zukünftige Forschungsarbeiten Gestaltungsgrundsätze für öffentliche Räume erarbeiten und tiefer gehende Erfahrungsberichte von Personen aus dem öffentlichen Raum untersuchen, um schließlich gemeinsame Aspekte positiver Erfahrungen in städtischen Umgebungen zu ermitteln.