

are you feeling served?

THE EMBODIED EXPERIENCE OF HOSPITALITY
IN SERVICE ENVIRONMENTS

Ruth Pijls-Hoekstra

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PROEFSCHRIFT

ter verkrijging van
de graad van doctor aan de Universiteit Twente,
op gezag van de rector magnificus,
Prof.dr. T.T.M. Palstra,
volgens besluit van het College voor Promoties
in het openbaar te verdedigen
vrijdag 20 november 2020 om 14.45 uur

door
Ruth Pijls – Hoekstra
geboren op 4 maart 1973
te Groningen

Dit proefschrift is goedgekeurd door
de promotor prof. dr. A.T.H. Pruyn en
de copromotor dr. M. Galetzka.

Cover design: Merit Buitenhuis & Ruth Pijls-Hoekstra

Printed by: Be-ink

Lay-out: Merit Buitenhuis & Ruth Pijls-Hoekstra

ISBN: 978-90-365-5066-6

DOI: 10.3990/1.9789036550666

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a warm welcome

When I started my PhD research in 2014, little was known about what people experience as hospitality. As a researcher and lecturer at the Hospitality Business School of Saxion University of Applied Sciences I felt that both educational institutions and service organisations would benefit from a better understanding of hospitality from the consumer's perspective.

Moreover, hospitality was purely associated with people. Although I too shared the opinion that people are the key to hospitality, I was convinced that hospitality goes beyond that. As we know that our environment influences how we feel, wouldn't this also apply to hospitality? This idea together with my personal interest in sensory perception led to the subject of this thesis: the role of physical (embodied) sensations in the service environment on the consumer's experience of hospitality.

I hope this thesis will inspire service practitioners and designers to stimulate their guests' senses in such a way that they feel hospitably received. Furthermore, I hope it will inspire fellow researchers to further examine the effects of service features on people's experiences of hospitality. What I hadn't thought of before I embarked on this study, is that the knowledge from this thesis could also be of value to artists. The research has already inspired artist Marcel Blom to design a work of art about hospitality for the city of Nijmegen. His winning design for the artwork "*Gastvrij Nijmegen*" is based on the hospitality factors *inviting*, *care* and *comfort*. In the near future we will be able to enjoy this work of art in Nijmegen.

Let me close by wishing you an enjoyable read.

Ruth Pijls-Hoekstra
Amersfoort, October 2020

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general introduction

Introduction of the topic

Hospitality applies to everyone - we all practice hospitality, both as a host and as a guest. We are hosts in our country, in our homes and at our work. We are guests on earth, in people's homes, at work, in hotels, restaurants, shops, hospitals, and many other places.

Hospitality comes close to our basic psychological need to feel connected to other people. For example, attention, respect, being in touch and taking care of each other are aspects that we as humans need to feel good. As we will learn in this dissertation, all these elements are related to hospitality.

Also essential for our well-being is the enjoyment of sensorial sensations, such as feeling the sun on our skin, enjoying delicious flavours, hearing lovely music, smelling delightful scents and seeing beautiful nature, buildings, art and people.

Our body is the intermediary between the outside world we perceive with our senses and the inner world where these perceptions are transformed into feelings and thoughts. The central theme of this dissertation is how the outside world of a service environment is related to the inner world of the experience of hospitality.

Practical relevance

People like to feel at ease not only in private but also in business environments. In service environments, we appreciate it when we experience pleasant and appropriate sensations that make us feel welcome and comfortable. The service industry is aware of this. The provision of services is nowadays inextricably linked to hospitality. Not the service itself, but the way the service is delivered makes whether customers connect to an organisation (e.g. Berry, Wall, & Carbone, 2006; Brunner-Sperdin, Peters, & Strobl, 2012).

At the end of the twentieth century, Pine and Gilmore (1999) introduced the experience economy, the idea that organisations create memorable experiences for their customers, in this way increasing the value of their proposition. The most famous example is the cup of coffee at the San Marco square, people happily pay 20 euros because of the memorable experience. The increasing attention to hospitality is a consequence of the idea that the experience of a product or service is of added value.

Hospitality has been predominantly associated with the hospitality industry, the industry of hotels, restaurants and travel-related organisations. Since about ten years also other service sectors have become interested in hospitality. Organisations in the fields of healthcare, retail, leisure, entertainment, transportation, finance and sports had started to develop policies on hospitality performance and subsequently had a need for knowledge on the subject in order to professionalise their hospitality performance. As a result, consultancy companies have started to advise organisations in the field of hospitality, predominantly on staff training. With the support of these companies, service organisations have already made improvements in their hospitality performance.

Although attitude and behaviour of staff is essential for a hospitable service experience, a service organisation also indirectly offers hospitality to its guests through the physical environment is provided. After all, a physical environment is particularly important for a first impression of the organisation (Berry et al., 2006), people make intuitive inferences about the unknown on the basis of information that is available to them (e.g. Peter & Olson, 2002). This dissertation will show that the influence of environmental factors is not limited to the first impression; later in the service process, the environment also contributes to how we assess an organisation's hospitality. Thus far, organisations have not made much use of the physical service environment as a tool to communicate hospitality. This is partly because they are not aware of its influence, but also because they lack guidance in how to do that. This is understandable, for two reasons. Firstly, we do not sufficiently understand the meaning of hospitality. At first glance, people have the idea that they know what hospitality is. However, we do not really get beyond the idea that hospitality has to do with welcome, respect, empathy, personal attention and friendliness. But how can we use these associations to create a hospitable service environment? We share intuition about the meaning of hospitality, we can recognise it, but we are not yet able to describe and let alone measure hospitality in a concrete and coherent way. However, this is an essential first step to create hospitable service environments. Secondly, the service industry and designers have insufficient practical knowledge to create hospitable environments. Little is known about what specific features of an environment convey hospitality.

Theoretical relevance

Not only the service industry increasingly pays attention to hospitality, also the scientific literature on this topic is growing. Research on hospitality has mainly been published in applied academic journals focusing on the hospitality industry. This sector understandably requires hands-on advice about the operational practice of hospitality performance. Research therefore has thus far predominantly focussed on immediately applicable knowledge. Since the business sector has dominated the literature on hospitality, this focus may be the reason that the first step of empirical investigation on what hospitality means has unintentionally been left out. However, this first step is essential for the development of a theoretical framework, which is necessary to further explore, define, investigate and apply hospitality (Brotherton, 1999; Lynch et al., 2011; Ottenbacher, Harrington, & Parsa, 2009).

Despite this dominant role of the hospitality industry, hospitality has increasingly been studied by other academic disciplines, such as philosophy, anthropology, architecture, art, geography, linguistics, history, sociology and theology (Lynch et al., 2011). This yields a wealth of viewpoints on the subject, but on the other hand it also impedes one's overview of the field. Although hospitality is studied from many different academic perspectives, surprisingly little hospitality research has been done from the perspective of the consumer. Furthermore, most literature on hospitality is descriptive and conceptual in nature. There are few studies on hospitality based on empirical research (Brotherton & Wood, 2008). This emphasises the need for scientific

investigation of hospitality from the perspective of the consumer in order to increase our understanding of the experience of hospitality.

Most hospitality research has focused particularly on the attitude and behaviour of service staff. This indeed seems the most important factor in people's experience of hospitality (e.g. Blain & Lashley, 2014; Tasci & Semrad, 2016). However, we propose and will show that next to the social interaction, also environmental features are able to impact the experience of hospitality. After all, from the field of environmental psychology we know that environmental cues influence people's experience of services (e.g. Bitner, 1992; Baker, 1987). However, with regard to the experience of hospitality this has hardly been studied so far.

Embodied cognition

The research presented in this dissertation aims to increase our understanding of the role of environmental cues on the experience of hospitality in service environments. People process information from the environment by using different mechanisms. One such mechanism is holistic processing of the environment (Bitner, 1992; Brunner-Sperdin et al., 2012; Diđoiu & Căruntu, 2014; Heide, Lærdal, & Grønhaug, 2007; Lin, 2004; Kim & Moon, 2009). As Kim and Moon (2009) describe, people blend the diverse features of what they perceive and transfer it into a unitary impression that combines the meaning of individual components and their interrelationships.

However, in addition to this mechanism of holistic processing of the environment, on a detailed level there may also be one-to-one relationships between specific characteristics of the environment and the experience that these elements give. The theory of embodied cognition assumes such one-to-one relationships by presuming that body and mind are connected and mutually influence each other (Lobel, 2014). According to this theory, information that our body perceives through the senses influences how we understand and act in the world. Mental concepts are grounded in our perceptions of the world (Barsalou, 2008).

Research provides evidence for this phenomenon. For example, physically heavy objects are expected to have also 'heavy' content (Jostmann, Lakens, & Schubert, 2009). A heavy book is supposed to have high quality or important content. In addition, the sound of a car door gives the impression of the weight of the material and raises expectations about the overall quality and solidity of the car (Bezat, Kronland-Martinet, Roussarie, & Ystad, 2014; Parizet, Guyader, & Nosulenko, 2008). Closing a door of a BMW sounds heavier than closing a door of a Fiat.

Furthermore, according to Lakoff and Johnson (1980), physical warmth is metaphorically associated with emotional warmth and affection. Williams and Bargh (2008a) found that subjects who held a warm cup of coffee were more likely to perceive someone else as emotionally 'warm' than subjects who held a cup of iced coffee. However, this evidence is not undisputed; a number of replication studies failed to reproduce some of the effects (e.g. Beek et al., 2017; Chabris, Heck, Mandart, Benjamin, & Simons, 2019; Lynott et al., 2014). Currently, authors emphasize

the need for further research investigating when and how embodiment occurs (i.e. Dijkstra, Eerland, Zijlmans, & Post, 2014; Landau, Meier, & Keefer, 2010).

In the present research, the phenomenon of embodied cognition is applied to the field of hospitality. The mechanism of embodied cognition is a logical starting point for exploring how our body acts as an interface between the outside world of the service environment and the inside world of our experience of hospitality. Do certain bodily sensations contribute to the sense of hospitality by triggering its mental metaphors? After all, if we understand the sensory perceptions that activate the mental concept of hospitality, service organisations may create environments that make that consumers experience hospitality.

Focus of the thesis

This dissertation takes an interdisciplinary approach by combining knowledge from the field of hospitality, services marketing, environmental psychology and cognitive psychology to increase our understanding of how the physical service environment influences consumers' experience of hospitality. More specifically, we look at how bodily sensations based on perceptions of stimuli in the outside world trigger mental concepts in our inner world, and in this way shape our experiences. The exploration of the phenomenon of hospitality from the consumer perspective is not limited to the hospitality industry, but broadly approached from and for the entire service sector.

Our research aims 1) to contribute to a better understanding, operationalisation and measurement of what consumers experience as hospitality in service environments, 2) to demonstrate that particular environmental service cues may contribute to the experience of hospitality, and 3) to show to what extent the effects of these service cues on the experience of hospitality can be explained by embodied cognition theory.

The research examines hospitality from the perspective of the people who consume the services. They are further referred to as consumers. The word 'customer' is used when it concerns the person who pays for the service, when citing others and in standard expressions, such as customer-centric or 'the customer experience'. 'Guest' is used to emphasise the host-guest relationship and when citing others.

Thesis overview

The research consists of three parts. Part one addresses its first aim: defining and measuring the concept of hospitality from the consumer perspective. Chapter 1 presents a systematic review of the academic literature on hospitality, taking four theoretical perspectives on hospitality: the historical perspective, the moral perspective, the exchange perspective and the individual perspective. Furthermore, this chapter provides initial suggestions from the literature on what hospitality means to consumers.

Chapter 2 examines what hospitality means according to service practitioners and consumers. Qualitative studies are presented that involve both service experts and service consumers of various types of services. This results in an initial distinction of the experience of hospitality into six dimensions: *welcome, at ease, empathy, acknowledgement, servitude and autonomy*. This serves as input for the development of an instrument for measuring the experience of hospitality in service environments.

Chapter 3 contains the development of this measurement scale by describing two quantitative studies that have been conducted to further develop and validate the instrument. Factor analysis led to a reduction of the six experiential dimensions of hospitality into three main factors: *inviting, care* and *comfort*. The result is the compact 13-item EH-Scale, that is used to measure the experience of hospitality in the experimental studies that are presented in Part 2 of the dissertation.

Part two contains the empirical evidence for the influence of environmental service cues on the experience of hospitality and the role of embodied cognition. Chapter 4 is an introduction to the experimental research and introduces the theory of embodied cognition that forms the basis for the experiments. For each factor of the experience of hospitality, a specific embodied construction was the starting point.

One of the most extensively studied embodied concepts is *warmth*, which is also the most likely mental concept in relation to hospitality, in particular in relation to the *care* factor. Therefore, we start in Chapter 5 with the exploration of the role of the embodied concept *warmth*. A real-life experiment in a theatre foyer indeed suggests an embodied effect of physical warmth on the experienced *care* in the foyer.

Secondly, the embodied concept *comfort* is likely to be linked with the *comfort* factor of the experience of hospitality. Although no embodied literature on comfort exists, it seems plausible that physical comfort leads to mental comfort. Chapter 6 supports this idea by a study in a self-service restaurant of a large furniture chain. Seating comfort triggered mental comfort, thereby influencing the hospitality people experience in the restaurant. Furthermore, this chapter shows that the effect of seating comfort depends on acoustic comfort and on the extent to which people had the desire to sit for a while.

In Chapter 7 the *inviting* factor of the experience of hospitality is central. An innovative Virtual Reality experiment on the role of the embodied concept *ease of access* in the experience of *inviting* is presented. The effects of visual transparency and door opening at the entrance of a hotel or a dental practice are studied. We show that transparency did, but door opening did not affect the experience of hospitality. Further it is explained that although the effects of transparency are roughly the same in the hotel and the dental practise, the mechanisms underlying the effects differ between the two service contexts. In some situations, embodiment seems to play a role, but in others it does not.

Part 3 addresses the theoretical and practical contributions. It contains a general discussion of the findings (Chapter 8) and a final chapter that explores which environmental service cues, next to a transparent entrance, warm drinks and furniture, and comfortable seats may further influence people's experience of *inviting, care* and *comfort* (Chapter 9). This chapter serves as inspiration

for service experts and designers to create hospitable environments. In addition, it offers researchers opportunities for future research into the influence of environmental variables on the experience of hospitality.

At the end of each chapter a brief summary of the chapter is given, together with a brief preview of the next chapter. The thesis overview is graphically presented at the end of this chapter, in Figure 0.1.

Chapters 2 and 3 formed the basis for a published article on the development of the EH-Scale (Pijls, Groen, Galetzka & Pruyn, 2017). Chapter 6 is a modified version of an article (Pijls, Galetzka, Groen & Pruyn, 2019). The Chapters 5 and 7 formed the basis for two separate articles that have been submitted to scientific journals. To ensure that all chapters can be read independently from each other, the introductions of the chapters show some overlap.



Figure 0.1. Thesis overview

part 1

defining and
measuring the
experience of
hospitality

1.
theoretical perspectives on
hospitality

Introduction

A first step in exploring the phenomenon of the experience of hospitality is to look at what has already been written in the literature about the meaning of hospitality. This chapter provides an insight in the scientific literature on the concept of hospitality. To get an overview of the large amount of literature on this topic, a systematic literature review has been carried out. The aim was not to provide a complete review of this diverse and complex area, but rather to provide a global overview in order to place the present research into the broader scope of hospitality literature.

The literature review ends up in a classification of the literature on the meaning of hospitality into four academic perspectives on hospitality: the historical perspective, the moral perspective, the exchange perspective and the individual perspective. On the basis of these four perspectives, the current research into the individual experience of hospitality in service environments is placed within the broader scope of hospitality literature. In addition, the literature has been examined through the lens of the hospitality experience for useful evidence and suggestions about the meaning of the hospitality experience, which served as a starting point for further exploration of the concept in chapter 3 and chapter 4.

Systematic literature review

A systematic literature review was carried out. A literature review is called a *systematic* literature review when it concerns a stand-alone literature review that uses a systematic and rigorous standard, with reproducible process (Okoli & Schabram, 2010).

Method

The literature review was based on systematic literature review procedures described by Okoli and Schabram (2010) and Bore, Rutherford, Glasgow, Taheri and Antony (2017). The review consisted of four phases: defining the scope of the study, setting inclusion criteria, applying exclusion criteria and the analysis of the selected articles.

- *Step 1. The scope of the literature study.* The literature study focused on providing an overall impression and categorisation of the literature on the meaning of the concept of hospitality. Furthermore, the literature study focused on searching for existing definitions and descriptions of the meaning of hospitality.
- *Step 2. Inclusion criteria.* Two types of documents were searched. The main part of the literature review concerned journal articles published between 1985 and 2018. The repositories *Web of Science*, *Scopus*, *Hospitality and Tourism Complete* and *Business Source Elite* were searched for the words 'hospitality' and 'review' in the title, abstract and/or keywords of an article. Secondly, the proceedings of the Annual International CHRIE Conference have been searched, because that is where it is expected that scholars discuss the concept of hospitality. All available conference papers (from 2003 to 2018) were scanned for articles with the word 'hospitality' in the title, abstract and/or keywords. Thirdly, The repository

EBSCO open dissertations (<https://biblioboard.com/opendissertations>), Open Thesis (<http://www.openthesis.org>), Academic Joy <http://www.academicjoy.net/phdcandidate-theses.html> and Open Access Theses and Dissertations (<http://oatd.org>) were searched for doctoral dissertations published between 1985 and 2018 with hospitality as a subject, based on a search with ‘hospitality’ in the title or description.

- *Step 3. Exclusion criteria.* The abstracts of the hits were analysed to filter out the articles that mentioned the word hospitality, but in which the phenomenon of hospitality was not the subject of the article. For example, the word ‘hospitality’ mostly appeared in relation to other words, such as hospitality industry, hospitality business, hospitality sector, hospitality management, hospitality venues, hospitality education and hospitality research. In those cases, hospitality itself was not the topic of research. From the initial 1149 journal articles, only 62 remained after this selection for further analysis. Surprisingly, from the initial 253 I-CHRIE conference papers, no single article delved into the meaning of the hospitality. Furthermore, 33 doctoral dissertations had hospitality as topic.

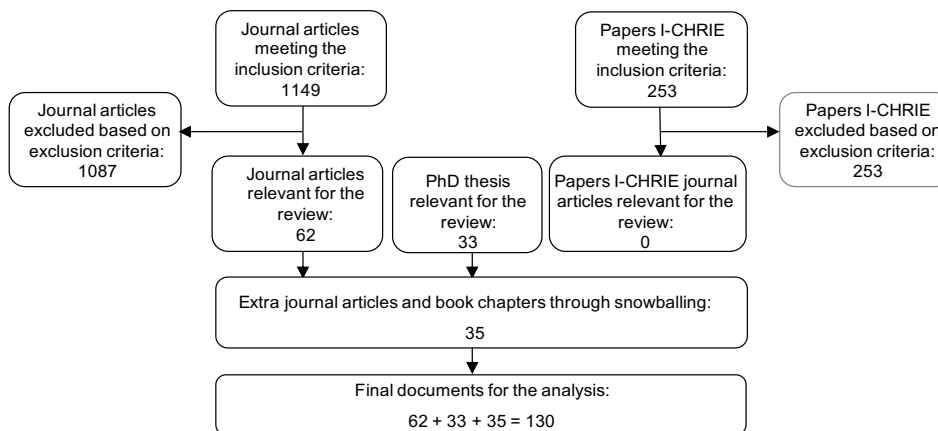


Figure 1.1. Systematic review flow diagram.

- *Step 4. Analysis.* The retrieved articles and doctoral dissertations were then scrutinized for background references on definitions and descriptions of hospitality (snowballing), with special attention to empirical studies. This process was conducted by reading the theoretical background of the documents. This resulted in 35 additional relevant journal articles and book chapters. Finally, content analysis was carried out 1) to create an overview of the literature on the meaning of hospitality by categorising the literature into academic perspectives on hospitality and 2) to get an overview of the descriptions and definitions of hospitality. The selection process of the documents is depicted in Figure 1.1.

Descriptive results

The collection of the 130 documents showed that the scientific attention for hospitality has increased considerably. 13 documents were published before 1996, 22 between 1996 to 2006, and 95 between 2007 and 2018. The documents were further analysed on the scientific discipline from which hospitality was studied. The scientific discipline was often mentioned in the article. If this was not the case, the discipline was allocated based on the scientific background of the author(s) and the journal. The literature review showed that hospitality has been studied from many academic disciplines. Table 1.1 shows that most of the articles examined hospitality from the fields of hospitality management, philosophy, theology, sociology and anthropology. Most PhD theses looked at hospitality from a philosophical or theological perspective. The results of the content analysis served as basis for further analysis for this chapter.

Table 1.1. Number of articles and PhD theses per scientific discipline.

Discipline	Journal articles	PhD theses	Total
Philosophy	23	13	36
Hospitality Management	23	3	26
Theology	12	10	22
Sociology & anthropology	14	2	16
History	10	1	11
Medicine	4	0	4
Linguistics	1	3	4
Arts	2	1	3
Sustainability	1	0	1
Technology	1	0	1
General	6	0	6

Academic perspectives on hospitality

The scientific attention for the phenomenon of hospitality has grown enormously for the last decades. Most scientific attention for the meaning of hospitality comes from philosophy and theology. Basically, this literature concerns discourses on how to think and behave towards others. Apart from that stream of literature, the business and managerial sector has thus far dominated the literature on hospitality (Lynch et al., 2011). This makes sense, since in this sector there seems to be a need for practical knowledge on hospitality. But do we know what is meant by hospitality in the hospitality industry and in service environments in general?

There are remarkably few academic articles that tap into the meaning of the concept. To illustrate, only 62 of the 1149 hits of the literature review dealt with the meaning of the concept of hospitality. Moreover, no single paper presented at the ICHRIE conferences was about what hospitality means to consumers, and how they experience it. The hospitality industry needs immediately applicable insights to improve the hospitality business. This may be the reason why the first step of empirically

investigating the meaning of hospitality has unintentionally been skipped. This first step is, however, essential for the development of a theoretical framework. It is necessary to further explore, define, investigate and apply hospitality (Brotherton, 1999; Lynch et al., 2011; Ottenbacher et al., 2009). As Brotherton and Wood (2008, p.40) state: “the absence of extended theorizing about, and empirical investigation of, hospitality means that there is little in the way of a coherent theory or theories of hospitality and therefore pronounced limits on potential for generalization”.

This section presents an overview of literature on hospitality, based on the 130 articles, book chapter and doctoral dissertations that met the criteria of the systematic literature review. The goal is not to provide an extensive review of the literature on the concept of hospitality, but to provide overview of the field. Four academic perspectives from which the concept of hospitality is studied are presented.

Scientific disciplines such as history have already studied the concept of hospitality for a long period of time. In recent years, however, there has been a rise of interest in the subject of hospitality across other disciplines, for example the humanities and the social sciences (Candea & da Col, 2012). Review of the literature revealed that nowadays hospitality is approached from very different perspectives (also shown in Table 1.1), and with very different objectives. Hospitality is subject of research within various disciplines such as anthropology, art, cultural studies, geography, hospitality management and hospitality studies, leisure, literature studies, linguistics, management, marketing, philosophy, history, sociology, theology and tourism (Lynch et al., 2011).

Although it is difficult to divide the literature into mutual exclusive categories, an attempt is made in order to create overview. Four academic domains can be distinguished, each of which examines hospitality from a different perspective. Firstly, from a historical perspective, researchers try to understand hospitality by looking back to the roots of hospitality and the concept of hospitality over time. Secondly, literature in the domains of primarily philosophy and theology contain discussions on ‘ideal hospitality’, looking at hospitality from a moral point of view. Thirdly, dialogues on the meaning of hospitality focus in areas such as cultural anthropology, sociology, politics and linguistics on the social exchange of hospitality between people or groups of people. Finally, from a psychological perspective hospitality is studied on an individual level, focusing on the mental and behavioural characteristics of individuals interacting with each other and with their environment. For each perspective, the main characteristics and the themes that are discussed in relation to hospitality are briefly introduced. The classification of the literature helps to place the present research in the broader perspective of existing hospitality literature.

The historical perspective

As the etymology of the word ‘hospitality’ shows, the origins of the word hospitality go back to ancient Greek and Romans. Analysis of their writings has shown that the ancient Greek regarded hospitality as the need for the protection of strangers (Ahn, 2010). Thereby it was not known if a stranger was hostile or hospitable (O’Gorman, 2007). In the ancient times there was already a distinction between private hospitality, receiving strangers in private homes, and commercial

hospitality. The ancient type of commercial hospitality was provided, for example, by Roman *hospitia* and *stabula* offering rooms for rent in combination with simple food and drink, and *tabernae* and *popinae*, just serving food and drink. Also, research from the discipline of geography (i.e. Bell, 2007, 2017) looks at hospitality from a perspective of historical development, concerning the role of hospitality in urban living, urban regeneration and hospitality venues.

Literature on hospitality from this historical perspective explores how the character of hospitality has changed over time in different places of the world (i.e. Karban, Jusan, Hussein, & Al-Aboud, 2018; King, 1995; O’Gorman, 2000). As an example, Karban et al. (2018) describe the development of hospitality in Mecca, from the original Islamic hospitality to contemporary hospitality. With the development of the commercialisation of hospitality, the question emerged whether the hospitality offered in a commercial environment can be true, genuine hospitality towards guests, or whether it is just a source of revenue (Karbon et al., 2018; O’Gorman, 2007; Telfer, 2000; Thirkettle & Korstanje, 2012). Thirkettle and Korstanje (2012, p.126), for example, state that “unfortunately, the current view of hospitality has nothing to do with its historical roots. Being hospitable now means a way of enhancing business and profits”.

One doctoral thesis investigated hospitality from a historical point of view: O’Gorman (2008) examined the essence of hospitality from texts of classical antiquity.

The moral perspective

Although theologians and philosophers also recognize discourses on hospitality emerging from historical research, such as the discussion about commercial versus non-commercial hospitality, the religious and philosophical perspective to hospitality stresses different issues. For example, Christian theologians describing hospitality emphasize the Divine mandate of being good to others (i.e. Reynolds, 2010; Santich, 2006). As Reynolds (2010, p.175) states “hospitality is a bestowal of welcome that opens towards another as loved by God”. In the early Christian community hospitality was provided to vulnerable populations, such as the poor, the sick, travellers and pilgrims, widows and orphans, slaves and prisoners, in need for economic, social, physical and spiritual help (Ahn, 2010). Moreover, strangers are seen as messengers from God, which signifies the duty to protect them (Santich, 2006; Thirkettle & Korstanje, 2012). In the Christian tradition hospitality is considered as a gift of welcome to others, receiving nothing in return except a reward from God in the afterlife (Pohl, 1999; Reynolds, 2010). In Buddhism, hospitality is a 'pure gift' and therefore no return is expected at all (Munasinghe, Hemmington, Schanzel, Poulston, & Fernando, 2017). Buddhism teaches about good and bad karmic effects that are the result of free will and actions towards the other. Hospitality is therefore an appropriate choice for every individual.

This idea of providing hospitality without expecting something in return is in line with Derrida’s philosophy of hospitality. Derrida argues for two types of hospitality: conditional hospitality and absolute or unconditional hospitality. Conditional hospitality implies that the guest adapts to the laws and norms of the hosting society (Derrida & Dufourmantelle, 2000). Absolute or

unconditional hospitality renounces these rules or laws of being guests and hosts. According to Derrida (1998):

Absolute hospitality implies that you don't ask the other, the newcomer, the guest to give anything back, or even to identify himself or herself. Even if the other deprives you of your mastery or your home, you have to accept this. It is terrible to accept this, but that is the condition of unconditional hospitality: that you give up the mastery of your space, your home, your nation. It is unbearable. If, however, there is pure hospitality, it should be pushed to this extreme (p.71).

Derrida and others argue that while conditional hospitality is feasible, unconditional hospitality is an impossible scenario. Hospitality to the other cannot be a matter of perfect equivalence, reciprocity or interchangeability (Saint-Amour, 2007). As Levinas (1987, p.75) puts it: "The relationship with the other is not an idyllic and harmonious relationship of communion, or a sympathy through which we put ourselves in the other's place; we recognise the other as resembling us, but exterior to us; the relationship with the other is a relationship with a Mystery." Theologians too acknowledge the difficulty of true hospitality. For instance, Largen (2010) states that our egos, our tempers, and our self-righteousness get in the way of our genuine openness to the other.

The philosopher Telfer (2000) deliberates on the existence of absolute or true hospitality. While others state that true genuine hospitality is impossible in a commercial context, Telfer argues that this view is too simplistic. According to her, it depends on the motivation of the providers of hospitality whether true genuine hospitality is possible in a commercial environment.

Consequently, both from a religious and a philosophical point of view discourses focus on how people ideally should think and behave in relation to others, rather than describing how they do in the real world. Derrida's unconditional hospitality would probably be the ultimate type of hospitality, but Derrida at the same time acknowledges that this is a utopia. Philosophers and theologians provide us with views on the utmost form of hospitality, representing a 'dream' of how people treat others in a perfect world. To further explore the meaning of the concept, they apply 'ideal' hospitality to current situations, such as immigrants (Fotou, 2016; Kilps, 2008; Scott, 2014), education (McGovern, 2010; Wright, 2017) and literature (Battel, 2017; Damai, 2012).

To conclude, Ahn (2010) remarks that the gift model of Christian hospitality is no longer used in commercial hospitality. Instead, it is substituted by the exchange or economic model. Looking at hospitality as an exchange between providers and receivers of hospitality is a view that is explained in the next subsection.

Finally, most of the doctoral theses on hospitality belong to this moral perspective by looking at hospitality from a philosophical perspective (Battel, 2017; Birnbaum, 1998; Curro, 2017; Damai, 2012; Fetter; Fotou, 2016; Knox, 2014; Laachir, 2013; Mansor, 2017; Meneses Romero, 2017; Slack, 2016; Sullivan, 2017) or a theological perspective (e.g. Gesner, 2014; Kassa, 2017; Kilps, 2008; McGovern, 2010; Scott, 2014; Stallman, 1999; Wright, 2017).

The exchange perspective

A related but somewhat different take on hospitality is the view of looking at hospitality as an exchange between host and guest, either on the level of groups, such as nations, cultures, subcultures, organisations or on the level of individual interaction. Academics such as political scientists, economists, sociologists, cultural anthropologists, and sociolinguists examine hospitality from this viewpoint. In academic discussions, people receiving hospitality range from consumers in hospitality business settings (King, 1995; Tideman, 1983; Reuland, Choudry, & Fagel, 1985) to political refugees (Linhard, 2007; Schoene, 2017; Settler & Mpofu, 2017), and from minorities in society to your own neighbours. In this field of research hospitality is described by looking from the outside to the relationship between the host and the guest, its reciprocity, what they exchange and the benefits for both parties.

Burgess (1982), for example, examines hospitality through the metaphor of gift exchange. Cultural and symbolic aspects of gift giving, receiving and reciprocity are discussed and related to public and private hospitality. Selwyn (2000, p.19) states that “the basic function of hospitality is to establish a relationship or promote an already established relationship”. Candea and Col (2012) argue that hospitality involves reciprocity, expressed in a tension between spontaneity and calculation, generosity and parasitism, friendship and hostility, improvisation and rule. Likewise, Brotherton and Wood (2000, p.142) put human exchange at the core of their frequently cited definition of hospitality: “Hospitality is a contemporaneous human exchange, which is voluntarily entered into, and designed to enhance the mutual well-being of the parties concerned through the provision of accommodation, and/or food, and/or drink”. In addition, Santos, Perazzolo, Pereira and Baptista (2017) introduce their social psychological view on host-guest relationships. Moreover, sociolinguistic analysis of dialogues in novels and poetry also reveal information on the social relation between providers and receivers of hospitality (i.e. Chiu, 2012; Saint-Amour, 2007).

Referring to benefits of both parties, Santich (2006) states that commercial hospitality would bias the relationship between the host and the guest as the reciprocity is converted in payment for goods and services. Lashley (2000, 2015), who distinguishes private, social and commercial domains of hospitality activities, considers the host-guest relationship as economic exchange as well as a social exchange depending on the domain. Cavagnaro, Duweke and Melissen (2018) promote sustainable hospitality, which goes beyond this distinction by transforming the host-guest relationship into a relationship in which economic and social hospitality are integrated.

Furthermore, a number of doctoral theses investigated hospitality by focussing on the exchange between host and guest. Chiu (2012) examined hospitality in the novels of Sir Walter Scott from a postcolonial perspective, by analysing power relations between various host and guest characters. Magnussen (2014) studied hospitality and citizenship in nineteenth-century German literature, Nishjima (2017) examined hospitality in post-oriental and post-imperial Japan and Want (2016) investigated student veterans’ view on hospitality in the classroom, where teachers are hosts and students are guests, who can mutually influence one another.

The individual perspective

The exchange perspective looks at the host-guest relationship from the outside, a perspective comparable to the omniscient narrative mode used in novels. In contrast, examining hospitality on an individual level focuses on the inside of a person, the individual perceptions and behaviours of people providing and receiving hospitality. A distinction can be made between the individual host who provides hospitality, and the individual guest who receives hospitality. Most literature on the individual perspective looks at hospitality from the perspective of the host, focusing on hospitable behaviour of service staff, often referred to as 'hospitableness'.

A number of studies investigated the meaning of the concept of hospitality from this individual perspective of the host (Ariffin & Maghzi, 2012; Pfeifer, 1983; O'Conner, 2006; Sim, Mak, & Jones, 2006; Tasci & Semrad, 2016). O'Conner (2006), for example, states that hospitality is a genuine human characteristic, which can only be taught to a limited extent. Sim et al. (2006), Ariffin and Maghzi (2012), Blain and Lashley (2014), and Tasci and Semrad (2016) investigated the meaning of hospitable behaviour in the hospitality sector. Sim et al. (2006) distinguished hospitality as the people component of service quality in hotels. Ariffin and Maghzi (2012) distinguish four dimensions concerning hospital behaviour in hotels: personalization, warm welcoming, special relationship and straight from the heart. Blain and Lashley (2014) distinguish three dimensions of hospitableness: the desire to put customer before yourself, to make them happy, and to make them feel special. Recently, Tasci and Semrad (2016) asked people to rate the importance of several characteristics for employees of destinations, hotels and restaurants for being hospitable. This resulted in three factors of hospitableness: heartwarming (welcoming, courteous, respectful and kind), heartassuring (trustworthy, honest, reliable), and heartsoothing (generous, sociable and open). Remarkably, all those studies on providing hospitality focus on the attitude and behaviour of staff. Hardly any research on hospitality, or at least research that uses the word hospitality, focus on the physical environment as a means to convey hospitality.

Moreover, a number of doctoral theses investigated hospitality on an individual level from the viewpoint of the host. Benmore (2010) investigated the emotion management of owners of small hotels, Lundberg (2010) focused on the conditions for frontline employees in providing hospitality and satisfactory service encounters, Sweeney (2008) investigated the relation between the host and the commercial home, identifying the main components of the host home relationship, and Wijesinghe (2007) explored female receptionists' experience in the provision of accommodation in the contemporary hospitality industry.

Considerably less literature that examines the meaning of hospitality from the other side, the consumer's experience of hospitality. In 2017, during the period of this PhD research the Routledge handbook of hospitality studies (edited by Conrad Lashley) was published. Part 2 of this book called 'experiencing hospitality', contains eight chapters. Two of the chapters fit in with the consumer perspective examined in this PhD research. Brownell (2017), for instance, describes the experience of hospitality of travelling women. She mentions that women away from home desire feelings of safety, comfort and being valued. Lugosi (2017) focusses on the consumption of

hospitality and distinguishes various forms of hospitality, depending on the situation. In his view, hospitality may be consumed as a play or to ensure safety and well-being.

The literature on the concept of hospitality, including the literature specifically on the consumer perspective, is usually descriptive in nature. The systematic literature review showed that empirical research into what people experience as hospitality is scarce. Exceptions are the studies carried out by Brotherton (2005) and Brotherton and Wood (2008). They investigated hotel guest perceptions of physical and service aspects of hospitality by interviewing hotel guests. People's associations with service delivery behaviour were amongst others: welcoming, friendly, polite, pleasant and warm. Associations with the physical aspects of hospitality were modern, clean, comfortable and bright. Also Hepple, Kipps, & Thomson (1990), who define hospitality from the exchange perspective, performed an empirical study on hospitality in a hospital environment that provided results that are relevant for the consumer perspective of hospitality. They found that according to hospital patients, friendly staff and smooth procedures were most relevant for experiencing hospitality.

The four academic perspectives show that the study of the phenomenon of hospitality has many angles of approach, all relevant for their specific domain. The present research studies hospitality from the individual perspective of the consumer. Before we delve further into the meaning of hospitality from this perspective, we will look more closely at how hospitality is defined and described in the literature, and what we can learn from what has been written within the four academic perspectives about the meaning of hospitality.

The meaning of hospitality

A starting point for the exploration of the meaning of hospitality is to look at the meaning of the word hospitality, both in dictionary definitions and in terms of etymology.

The meaning of the word 'hospitality'

To begin with, the word hospitality is expressed in dictionary definitions. For example, Oxford Dictionaries¹ describe hospitality as “the friendly and generous reception and entertainment of guests, visitors, or strangers”. Other dictionaries define hospitality as “kindness in welcoming strangers or guests”² or as “generous and friendly treatment of visitors and guests: hospitable treatment”³. Merriam Webster additionally provides a second definition that specifically applies to a business setting: “The activity of providing food, drinks, etc. for people who are the guests or customers of an organisation”. Cambridge Dictionary⁴ provides a similar definition of hospitality: “the food, drink, etc. that an organisation provides in order to keep its guests or business partners happy”. Thus, according to dictionary definitions, hospitality is about welcoming guests and the provision of food and drinks.

¹ <http://www.oxforddictionaries.com/definition/english/hospitality>

² Collins Concise English Dictionary Plus, 1989, p.604.

³ <http://www.merriam-webster.com/dictionary/hospitality>

⁴ <http://dictionary.cambridge.org/dictionary/british/hospitality>

To look beyond the general meaning of hospitality expressed in dictionary definitions it is worth going to the origin of the word 'hospitality' by looking at the etymology of the word 'hospitality'. In short, hospitality comes from the Latin word *hospes*. The origin of the word *hospes* is *hosti-pet-s*. This is a compound of two Latin word families: *hostis* and *pet* or *pot(iri)*. *Hostis* means both stranger and enemy, and both guest and host (Benveniste 1969, 1973; <http://www.latin-dictionary.net>). The original meaning of the word was 'stranger'; in a positive explanation a stranger turns into a guest and in a negative explanation a stranger turns into an enemy (Benveniste, 1973). The different meanings of *hostis* are also reflected in the English words *host* and *hostile*. At the same time the word means both guest and host, which implies equality and reciprocity (Benveniste, 1969).

The second part of the word *hospes*, '*pet*' or '*pot*', refers to the Latin word *potiri* meaning becoming master or having power (Benveniste, 1973; <http://www.latin-dictionary.net>). Thus, hospitality incorporates both reciprocity and equality (*hostis*), and power or domination of the host in the relationship between host and guest (*pet/pot*). As the literature shows, this duality in the meaning of the word hospitality is also expressed in academic discussions on the concept, especially in the literature examining hospitality from the moral perspective and the exchange perspective.

Academic descriptions of hospitality

Now that we know the semantic and etymological meaning of the word hospitality, the next step is to delve deeper into the meaning of the concept of hospitality as discussed in the academic literature on the topic. Descriptions of hospitality vary in their nature and focus. Table 1.2 presents an overview of frequently cited descriptions of hospitality. Most authors describe hospitality from the viewpoint of the host, emphasizing what the host offers to the guest (i.e. Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Derrida, 1989; King, 1995; Nailon, 1985; O'Sullivan, 2004; Pfeifer, 1983; Ritzer, 2007; Tasci & Semrad, 2016; Telfer, 2000). This is in line with the fact that the word hospitality is focussed on the host; someone is hospitable to someone else. There is no word for the guest side of hospitality, expressing its reception. Some authors, mostly looking at hospitality from the exchange perspective, include in their description that hospitality involves an exchange between the guest and the host (i.e. Brotherton & Wood, 2000; Burgess, 1982; Hepple, Kipps, & Thomson 1990; King, 1995; Lashley, 2000; Reuland et al., 1985; Selwyn, 2000; Tideman, 1983). 'Guests' are also referred to as 'receivers of hospitality' (Reuland et al., 1985; Selwyn, 2000), 'strangers' (O'Gorman, 2007), 'outsiders' (O'Sullivan, 2004) or 'others' (Nailon, 1982).

The descriptions vary in the organisational cues they incorporate in the description. They vary from just mentioning service behaviour or offering meals as means to be hospitable, to also incorporating the physical environment as an expression of hospitality. Six of the 21 descriptions are rather abstract descriptions of hospitality that do not mention cues expressing hospitality at all (Derrida, 1989; Hemmington, 2007; Hepple, Kipps, & Thomson, 1990; Nailon, 1981; Ritzer, 2007). Two descriptions express the traditional view on hospitality, that is the provision of products, such as food, beverage and a bed (Pfeifer, 1983; Tideman, 1983). In five descriptions hospitality is characterised as just human behaviour (Ariffin & Maghzi, 2012; King, 1995; Lashley, 2000),

sometimes referring to it as ‘hospitableness’ (Blain & Lashley, 2014; Tasci & Semrad, 2016). Three descriptions involve both products and service behaviour in providing hospitality (Brotherton & Wood, 2000; Telfer, 2000; Selwyn, 2000). And four descriptions also acknowledge the physical environment as element in providing hospitality, apart from just mentioning accommodation or a bed (Brotherton, 2005; Burgess, 1982; Cassee & Reuland, 1983; O’Sullivan, 2004; Reuland et al., 1985). Column 3 in Table 1.2 shows for each description the type of service cues that are mentioned.

Besides the service cues by which hospitality is offered, the descriptions differ in the words that are used to describe hospitality provided by hosts (providing hospitality) and hospitality experienced by guests (receiving hospitality). Column 4 of Table 1.2 shows that hospitable behaviour of hosts is associated with for instance warm, friendly, welcoming, courteous, flawless, open and generous behaviour, genuine needs to please, care for guests, entertaining and showing beneficence and altruism. Concerning the reception of hospitality authors imply that guests experience hospitality when they feel understood and experience feelings of welcome, care, safety and security, comfort, well-being, pleasure, entertainment and surprise (column 5 of Table 1.2). These words from both the perspective of the host and the perspective of the guest are helpful in understanding of what guests may experience as hospitality.

In sum, the frequently cited descriptions of hospitality vary in the aspects of hospitality that are emphasized. All descriptions are meaningful and relevant and the exact content and focus depend on the perspective of study. As also acknowledged by others (Filimonau & Brown, 2018; Hemmington, 2007; Brotherton & Wood, 2008; Lugosi, 2008), it should therefore not be an ambition to strive for one true definition of hospitality. Instead, it may be more relevant to make clear from what perspective hospitality is studied, and to define what type of definition of hospitality matches this perspective and is suitable for obtaining further scientific evidence on the subject.

For the consumers’ experience of hospitality, which is central to this dissertation, the words of the columns 4 and 5 of Table 1.2 are a first step in the exploration of what consumers experience as hospitality. Furthermore, the descriptions show that although hardly any empirical research has been done on the influence of the physical environment on the experience of hospitality, the literature shows that there were already authors in the 1980s who assumed that the physical environment is involved in hospitality.

The experience of hospitality

The descriptions of hospitality from frequently cited authors that were analysed above provide experience-related words that are helpful in the exploration of what people experience as hospitality. In addition, the literature regarding the four academic perspectives also provided words

*Table 1.2. Descriptions of hospitality (chronological order). Descriptions with an empirical basis are marked with a * in the first column.*

Author(s)	Description of hospitality
Burgess (1982, p.50)	“The primary interacting element is that of the social relationship fostered by the warm, friendly, welcoming, courteous, open, generous behaviour of the host, creating the hospitable social environment. This supports and promotes the positive feeling of security and comfort created by the physical structure, design, decor and location of the facility. Finally, the provision of accommodation facilities to sleep, eat, relax and wash, together with the supply of food, beverage, service and entertainment.”
Cassee & Reuland (1983, p.144)	“A harmonious mixture of food, beverage, and/or shelter, a physical environment, and behaviour and attitude of people. This produces a feeling of being at home, an ‘at-ease feeling’ in people who do not belong to the group of people who ‘produce’ hospitality but stay under their roof. “
Pfeifer (1983, p.191)	“Offering food, beverage and lodging, or, in other words, of offering the basic needs for the person away from home.”
Tideman (1983, p.1)	“The method of production by which the needs of the proposed guest are satisfied to the utmost and that means a supply of goods and services in a quantity and quality desired by the guest and at a price that is acceptable to him so that he feels the product is worth the price.”
Reuland, Choudry, & Fagel (1985, p.142)	“A process involving a provider (offering hospitality) and receiver (consuming hospitality). This process involves the transfer of three elements: product (meal or bed), behaviour of employees, and environment of the restaurant.”
Hepple, Kipps, & Thomson (1990, p.308)	“Four characteristics of hospitality:(1) It is conferred by a host on a guest who is away from home.(2) It is interactive, involving the coming together of a provider and receiver.(3) It is comprised of a blend of tangible and intangible factors.(4) The host provides for the guest’s security, psychological and physiological comfort.”
King (1995, p.229)	“Hospitality in a commercial or organisational setting is a specific kind of relationship between individuals -a host and a guest. In this relationship, the host understands what would give pleasure to the guest and enhances his or her comfort and well-being, and delivers it generously and flawlessly in face-to-face interactions, with deference, tactfulness and the process of social ritual. The objective is to enhance guest satisfaction and develop repeat business.”
Derrida (1998, p.71)	“Absolute hospitality implies that you don’t ask the other, the newcomer, the guest to give anything back, or even to identify himself or herself. Even if the other deprives you of your mastery or your home, you have to accept this. It is terrible to accept this, but that is the condition of unconditional hospitality: that you give up the mastery of your space, your home, your nation. It is unbearable. If, however, there is pure hospitality, it should be pushed to this extreme.”

Organisational cues	Hospitality provision	Hospitality reception
product, behaviour, environment	warm, friendly, welcoming, courteous, open, generous	security, comfort, entertainment
product, behaviour, environment	-	at home, at ease
product	-	basic needs
product	-	needs
product, behaviour, environment	-	-
-	-	security, psychological & physiological comfort
behaviour	generous, flawless, deference, tactful	pleasure, comfort, wellbeing, satisfaction
-	-	-

Brotherton & Wood (2000, p.142)	"Hospitality is a contemporaneous human exchange, which is voluntarily entered into, and designed to enhance the mutual well-being of the parties concerned through the provision of accommodation, and/or food, and/or drink."
Lashley (2000, p. 4 & p.15)	"Hospitality primarily involves mutuality and exchange, and thereby feelings of altruism and beneficence." "Hospitality requires the guest to feel that the host is being hospitable through feelings of generosity, a desire to please and a genuine regard for the guest as an individual."
Telfer (2000, p.39 & p.45)	"Giving of food, drink and sometimes accommodation to people who are not regular members of a household" "If a commercial host looks after his guests well out of a genuine concern for their happiness and charges them reasonably, rather than extortionately, for what he does, his activities can be called hospitable."
Selwyn (2000, p.19)	"The basic function of hospitality is to establish a relationship or promote an already established relationship. Acts of hospitality achieve this in the course of exchanges of goods and services, both material and symbolic, between those who give hospitality (hosts) and those who receive it (guests)."
O' Sullivan (2004, p.24)	"Hospitality in early modern England and medieval Ireland identify hospitality as acts of providing food, lodging, and guidance, while also creating a welcoming space (temporary or long-term) for those who arrived as outsiders whether to a household or larger community."
*Brotherton (2005, p.150)	"The notion of hospitality is being viewed as something closely associated with being made to feel 'welcome' by 'warm' and 'friendly' staff within an environment that is 'comfortable, pleasant and relaxing'."
Hemmington (2007, p.16)	"Five key dimensions of hospitality as a commercial experience are: the host-guest relationship, generosity, theatre and performance, lots of little surprises and safety and security. Hospitality businesses must focus on the guest experience and stage memorable experiences that stimulate all five senses."
Ritzer (2007, p.129)	"The key responsibility of the host is to ensure the safety and well-being of the guest while he or she is in the host's home."
*Ariffin & Maghzi (2012, p.192)	"Commercial hospitality in the context of hotel services, is defined as acts of entertaining the guests to create memorable and friendly staying experiences by meeting their physiological and emotional needs selflessly."
*Blain & Lashley (2014, p.8)	"Hospitableness is 'an individual's concern to offer genuine hospitality which is essentially altruistic'."
*Tasci & Semrad (2016, p.32)	"Taking care of needs by serving by hospitableness (heartwarming, heartassuring, heartsoothing)."

product, behaviour	well-being	well-being
behaviour	altruism, beneficence, generosity, pleasing	-
product, behaviour	genuineness to please	-
product, behaviour	-	-
product, behaviour, environment	-	welcoming, guidance
behaviour, environment	-	welcome, warm, friendly, comfortable, pleasant, relaxing
-	-	generosity, safety, security, surprise, entertainment
		safety, wellbeing
behaviour	entertainment, friendliness	physiological and emotional needs
behaviour	genuineness, altruism	-
behaviour	heartwarming, heartassuring, heartsoothing	needs

that refer to consumers' experience of hospitality. Literature belonging to the historical perspective show that Greek and Roman writings already contained experience-related words associated with hospitality, such as providing a warm welcome, a comfortable place to sit, charming company and entertainment (O' Gorman, 2007). Later on, these kinds of associations were also made in the western world. In medieval Ireland, for example, hospitality was seen as guidance for creating a welcoming space (O'Sullivan, 2004) and in the sixteenth century, the Italian diplomacy associated hospitality with princely gentlemen and honour (Fletcher, 2009).

According to literature assigned to the moral perspective, hospitality has to do with being kind, tolerant (Ahn, 2010), love the other as yourself, attention, comfort and read the signs of the customer (Matzko, 1996). Furthermore, welcome, safety, vulnerability, spirituality, courtesy, charity and virtue (Reynolds, 2010), as well as reducing risk and uncertainty (Thirkettle & Corstanje, 2012) are associated with hospitality. The literature which takes the exchange perspective also provides words referring to what consumers experience as hospitality, for example safety, welfare, helping, entertaining, protecting, serving, friendliness, benevolence, compassion, happiness (Ritzer, 2000), pleasure (Selwyn, 2000) and affection (Candea and da Col, 2012). Finally, the literature on the individual perspective also contains words that indicate what the experience of hospitality would be: warmth, friendliness, feeling welcome, feeling special or important, attention, respect, care, helpfulness, pleasantness, generosity, desire to please, friendliness, understanding needs, comfort, safety, feelings of empowerment and freedom, attractive surrounding, and little elements of surprise (e.g. Ariffin & Maghzi, 2012; Brotherton & Wood, 2008; Hepple et al., 1990; Sim et al., 2006; Tasci & Semrad, 2016).

Table 1.3. List of words associated with the experience of hospitality.

Attention ^{3,4,12}	Friendly ^{3,4,6,8,16,17,19}	Safety ^{7,15,16,20}
Care ^{1,4,19}	Generous ^{3,4,6,7,9,10,19}	Security ^{6,7,8,13,16,17}
Comfort ^{1,2,4,6,8,12,13,14,17}	Helpful ^{1,2,16,19}	Understanding needs ^{1,9,12,17,21}
Courteous ^{6,15,17,19}	Open ^{6,19}	Warmth ^{1,3,4,6,14}
Desire to please ^{1,2,10,20}	Pleasure/happy ^{2,3,4,9,16,18,19}	Welcoming ^{1,3,4,6,14,15,17,19}
Entertainment ^{6,7,14,16}	Polite ^{3,4,17,19}	
Feel important/special ^{1,2,17}	Respectful ^{1,19}	

¹Ariffin & Maghzi (2012), ²Blain & Lashley (2014), ³Brotherton (2005), ⁴Brotherton & Wood (2008), ⁵Brownell (2017), ⁶Burgess (1982), ⁷Hemmington (2007), ⁸Hepple, Kipps, & Thompson (1990), ⁹King (1995), ¹⁰Lashley (2000), ¹¹Lugosi, 2017, ¹²Matzko (1996), ¹³Nailon (1982), ¹⁴O'Gorman (2000), ¹⁵Reynolds (2010), ¹⁶Ritzer (2007), ¹⁷Sim, Mak, & Jones (2006), ¹⁸Selwin (2000), ¹⁹Tasci & Semrad (2016), ²⁰Telfer (2000), ²¹Tideman (1983)

Table 1.3 provides an overview of the words that are associated in the literature with what people experience as hospitality. Only words that are mentioned more than once are included in the overview. As can be seen, there are many words that academics relate to hospitality, which is a good starting point for further exploration of the meaning of the experience of hospitality. However, the words that are mentioned differ from author to author. Furthermore, most associations are based on authors' opinions instead of on empirical research among people who experience hospitality.

We do not know whether all words are equally relevant in describing the experience of hospitality. Some words may be more important than others. A solid and coherent description of the experience of hospitality does not exist yet.

Conclusion and discussion

The present chapter introduces the scientific literature on hospitality and explains how the present research is related to hospitality research in general. Hospitality as a subject is studied by many academic disciplines. The multi-disciplinary approach to hospitality research implies different types of research and different types of research topics. The literature can be categorised into four academic perspectives: (1) the *historical perspective*, descriptive in nature by looking back to the origins of hospitality, (2) the *moral perspective* examining what hospitality should ideally be, (3) the *exchange perspective* focussing on the reciprocal nature of the relation between host and guest, and (4) the *individual perspective* examining how hosts provide hospitality and what guests experience as hospitable. This dissertation fits in the individual perspective from the viewpoint of the guest.

Thus far, the guest experience of hospitality has received little scientific attention. However, this way of looking at hospitality is in line with the worldwide trend that societies become more and more individualistic, with consumers expecting high standards on service levels and personalised services. The importance of knowledge from this perspective also becomes clear from the descriptions of hospitality from the host point of view, descriptions that stress that the host should help their guests in accomplishing their needs. In order to do this, the host must first understand the experiences of his guests.

This chapter showed that the – mainly descriptive - literature on hospitality already provides starting points for the empirical investigation of what people experience when they experience hospitality. Table 1.3 summarises the words authors have used to describe hospitality.

However, these words used to describe the experience of hospitality mainly come from literature in which authors explain their own ideas on hospitality and reflect on the ideas of others. There is little empirical evidence. Furthermore, what is the scope of hospitality? Most descriptions in the literature apply to the hospitality industry, offering food, drinks and lodging. Furthermore, hospitality seems to primarily concern hospitable behaviour of service staff. But wouldn't hospitality also include the building in which the service takes place? A common view does not exist.

For our understanding of the experience of hospitality in service environments the next step is to examine what hospitality means to consumers, and how hospitality can be managed according to the service industry and its consumers. Chapter 2 explores the meaning of the experience of hospitality according to both service practitioners who provide hospitality and consumers who experience the hospitality that is offered at service organisations. Subsequently, based on the results Chapter 1 and Chapter 2, the EH-Scale for measuring the experience of hospitality was developed, as described in Chapter 3.

in brief

Chapter 1 provided a global overview of scientific literature on the concept of hospitality. This chapter showed that the scientific attention for the phenomenon of hospitality has grown enormously in the last decades. Four perspectives on hospitality are introduced, which enables us to place the current research in the broad context of literature on hospitality:

- the historical perspective, looking back to the origins of hospitality;
- the moral perspective, reflecting on what hospitality should ideally be;
- the exchange perspective, examining the relation between the host and the guest;
- the individual perspective, focussing on the viewpoint of either the host or the guest.

Chapter 1 further showed that, despite the large number of articles on hospitality, surprisingly little hospitality research has been done from the perspective of the guest. Although the literature has already provided starting points for what people may experience as hospitality, empirical research is necessary to thoroughly determine what consumers experience as hospitality in service environments.

Now that we have an overview over the existing literature on the concept of hospitality, the next step is to examine what hospitality means according to the service industry and its consumers. Chapter 2 provides a first step in developing a theoretical framework for the experience of hospitality, by qualitatively exploring the meaning of the experience of hospitality from the viewpoint of both service practitioners and service consumers. A Delphi-study with service experts and a critical incident study with consumers of six different service organisations resulted in the identification of six experiential dimensions of hospitality.

2. the experience of hospitality: exploring the concept⁵

⁵ Chapter 2 and Chapter 3 together resulted in the manuscript Pijls, R., Groen, B.H., Galetzka, M., Pruyn, A.T.H. (2017). Measuring the experience of hospitality: Scale development and validation. *International Journal of Hospitality Management*, 67, 125–133. <http://doi.org/10.1016/j.ijhm.2017.07.008>.

Introduction

Chapter 1 showed us that despite the growing academic attention for hospitality from various academic disciplines, the concept of hospitality is still ill-defined. Specifically, from the perspective of the consumer it is not clear what consumers experience as hospitality. There is a lack of empirical research on the topic and a theoretical framework of the consumer's experience of hospitality does not exist.

Beyond the limited empirical research on this topic, Chapter 1 showed that, at a more descriptive level, the literature on hospitality provides some indications on what consumers will probably experience as hospitality (chapter 1, Table 1.2). Authors describe hospitality using words such as warm, friendly, welcoming, courteous, open, helpful, generous, desire to please, understanding needs, comfort, safety and entertainment.

However, are these aspects mentioned by academics indeed what people in their interactions with service organisations experience as hospitality? What does hospitality mean to consumers? What is the opinion of the service industry on the meaning of the concept?

Now that we know the existing literature on the concept of hospitality, let us examine how the service industry deals with the concept of hospitality. What does hospitality mean to service organisations and their consumers? The present chapter describes two qualitative studies, in which together with service providers (Study 1) and service consumers (Study 2) the concept of the experience of hospitality is further explored. It is assumed that service providers consciously deal with creating hospitable experiences and therefore will be able to reflect on it. On the other hand, experiencing hospitality is above all about the consumers, whose involved mental processes may occur mainly on less conscious levels (Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005; Kahneman, 2012). Therefore, both service providers and service consumers participated in the studies.

Objective and research questions

The main objective of this chapter is to explore the meaning of the experience of hospitality. What is the relevance of the topic for service organisations? What is a hospitable experience according to service experts and service consumers? Do the experience-related words authors use to describe hospitality in the literature reflect how service providers view hospitality and how consumers experience it? Can we define the meaning of the experience of hospitality by breaking the concept down into a number of experiential dimensions? Does the experience of hospitality differ between service contexts, service consumers and the various moments in the service delivery process?

In anticipation of the second part of the project, in which the relation between environmental cues in the service environment and the experience of hospitality are studied, another objective of this chapter is to explore the influence of various service cues on the experience of hospitality. Services marketing literature show different types of service cues that influence people's experience of service

environments. Haeckel, Carbone and Berry (2003) and Berry et al. (2006) distinguish three categories of service cues: functional, mechanic and humanic cues. Functional cues refer to the technical quality of a service (processes and facilities), mechanic cues concern the sensory presentation of the service, referring to environmental characteristics including sights, smells, sounds, tastes, and textures, and humanic cues refer to the appearance and behaviour of staff. Others came up with comparable divisions of service cues, like Baker (1987), Bitner (1992), Brunner-Sperdin & Peters, (2009) Ladeira, Costa, & Santini (2013). The focus in this project is on the environment-related mechanical cues that we perceive directly via our senses. The central research question that will be addressed in this chapter is:

- *What do consumers in a service environment experience as hospitality?*

The following research questions can be distinguished:

- Which experiential dimensions can be discerned when consumers experience hospitality in a service environment?
- What are similarities and differences in the experience of hospitality between service contexts, service consumers and moments in the service delivery process?
- What environmental (mechanical) service cues seem particularly relevant in relation to consumers' experience of hospitality?

Study 1: service experts

To empirically explore the meaning of the experience of hospitality in the service industry, firstly service experts on customer experience shared their expertise and opinions on the topic.

Method

Participants. Between October 2014 and June 2015 eight service experts participated in the study. The participants were owners or managers of service organisations, engaged in or advising on the shaping of consumer experiences. As the focus was on services in the broadest sense, service experts with experience in different types of service contexts were recruited: business (convention centre and insurance company), healthcare (hospital/home for elderly people), hospitality industry (hotel and hotel-restaurant) travel (airport) and entertainment (concert hall and amusement park) and architecture and design (consultancy company). The organisations varied in whether their services were characterised as hedonic or utilitarian (Wakefield & Blodgett, 1996). Entertainment is typically hedonistic because it meets the needs of pleasure, while business and healthcare can be characterised as utilitarian because people's visits are compulsory. Hotels, restaurants, travel and design can be either hedonic or utilitarian, depending on people's mindset (business or leisure).

Research design. For this study the Delphi method was used: an interactive method in which experts 'discuss' a complex problem (Linstone & Turoff, 1975; Okoli & Pawlowski, 2004; Rowe & Wright, 2001; Wunderlich, Wangeheim, & Bitner, 2013). Through a structured iterative

communication process, individual experts answered questions in three rounds with the aim of seeking consensus.

Procedure. In the first round, respondents were interviewed face-to-face for about one hour. Participants were invited to describe hospitable and inhospitable experiences, to provide associations with hospitality and to share their thoughts on the meaning of hospitable experiences. They were furthermore asked to share their ideas about relevant environmental service cues and explain what their organisation does to create a hospitable service environment. In the second telephone round, the experts gave feedback on a summary of the results from the first round. To reach group consensus, the experts discussed during a third round, a panel session, some final topics, such as the added value of hospitality for the service industry, priorities in improving hospitality and the way the experience of hospitality could be measured.

Analysis. The transcriptions of the interviews were analysed with help of the F4Analyse software package for qualitative data analysis using inductive thematic analysis (Braun & Clarke, 2006). Firstly, phrases that referred to characteristics of hospitality were labelled (open coding). Secondly, these labels were grouped into a number of overarching dimensions (axial coding). To improve the inter-rater reliability, a second assessor independently coded two of the interviews, which resulted in some minor changes to the original coding scheme.

Results

First of all, all service experts stressed the relevance of the topic in service environments. Experts stated: “hospitality is the most central thing in the organisation” (concert hall), “hospitality is the core of the business” (healthcare) and “In our branch of large buildings, hospitality is the difference between profit and loss” (convention centre). All organisations involved in the research strive for hospitality. To this end, they select and train employees and often pay attention to the environment in order to create a pleasant atmosphere with the help of light, colour, design, and sometimes music and scent.

Experiential dimensions of hospitality

Through an iterative process of analysing the interviews (round 1 of the Delphi) and modifications based on the feedback of the experts (rounds 2 and 3 of the Delphi), the results suggest that the overarching element in the experience of hospitality is *personal attention*. To illustrate, “hospitality is about attention for you as an individual” (hospital) and “it is about the feeling that there is attention” (hotel and restaurant). In turn, personal attention seems to be perceived by the experience of seven sub-themes, so-called experiential dimensions of hospitality.

The *welcome* dimension concerns the atmosphere of a service environment: feeling welcome, a warm reception and an inviting and approachable atmosphere. Feelings of being *at ease* appear to be another experiential dimension of hospitality, consisting of feeling safe and relaxed, the reduction of stress, feeling at home, at ease and feeling confident. *Empathy* shows up as a third experiential dimension and refers to the experience that the organisation understands what

consumers want and need. It is about “reading the guest” (hotel and hospital), “understanding the needs of your guests” (architecture and design).

Experts stated, “the willingness to serve you, without the expectation of receiving something in return” (hospital) and “you need to feel that the intention is genuine” (hotel-restaurant). Next, the *acknowledgement* dimension refers to the experience of personal contact and the feeling of being important and being taken seriously. “It is about real contact, the connection between people” (hotel), “getting respect, appreciation and acknowledgement as a guest” (healthcare) and “this was personalised service, especially for me” (hotel and restaurant). Another experiential dimension of hospitality is *autonomy*: the level of control over what happens seems to be part of the experience of hospitality. “It is hospitable when visitors have the freedom to do it their way” (amusement park). *Surprise* is the final experiential dimension of hospitality. According to the experts, an experience can be characterised as hospitable when there is at least one element that really ‘moves’ you or exceeds your expectations. An expert mentioned an experience he had at a hotel: “The fact that they washed the windshield of my car was something special that I did not expect”. Figure 2.1 presents the joint opinion of the service experts on the experiential dimensions of hospitality.

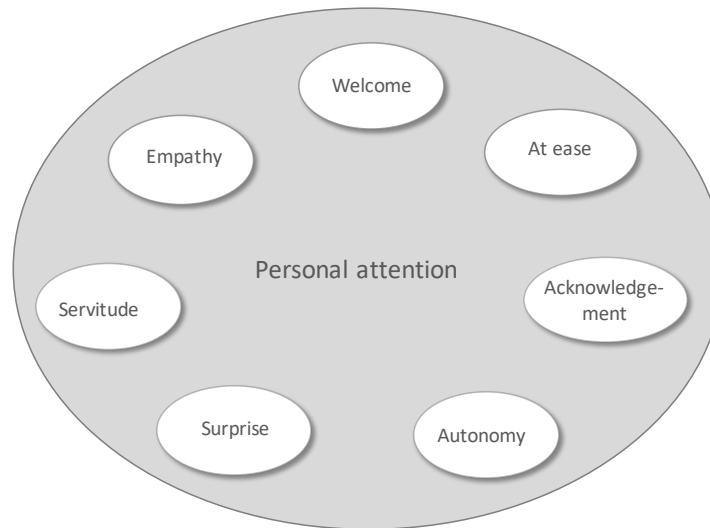


Figure 2.1. Experiential dimensions of hospitality based on Study 1.

Contextual, individual and temporal differences

The experts shared the opinion that the experience of personal attention is true for every individual in every situation. Though, the relative importance of the dimensions is expected to depend on the type of service organisation (contextual differences), the type of consumers (individual differences) and the moment in the service delivery process (temporal differences). Concerning contextual differences, experts agreed that the relevance and meaning of the various dimensions depend on the service context. “The experience of empathy may be more important for the experience of

hospitality in a hospital than in an amusement park, while surprise and pleasure is more relevant in an amusement park than in a hospital” (amusement industry). Concerning autonomy an expert (travel) argued that “in some situations people prefer being in control, for example at a railway station, while in other situations the need to be in control is less, for example in a restaurant where people like to be pampered”.

With respect to individual differences, culture differences and differences in mindset (for example business versus leisure travellers) were most often mentioned as consumer characteristics that are expected to play a role in what people experience as hospitable. “When I am in a hurry, I don’t appreciate extra attention and surprise” (healthcare).

Regarding temporal differences, some experts argue that the most critical moment for hospitality is the first real contact between guest and host. The first impression is crucial, as a hotel expert stated: “when the rubber hits the road”. Others stress the role of hospitality at the end of a visit when the guest is about to leave the organisation. Then, organisations have the opportunity to thank their guests for their visit, to check whether their needs have been met, and to guide them to the exit. Other moments in the service delivery process also seem to matter, such as meeting the physician in a hospital, entering the room in a hotel, the car park and the moments when one has to wait. Here, too, at different stages of the service, different dimensions of hospitality may account for the experienced hospitality. According to the experts, a sense of welcome can be valuable in the first place upon arrival, a safe and comfortable feeling throughout the service process and servitude at some specific contact points, including the departure.

Service cues

Concerning service cues that may contribute to the experience of hospitality, the experts agreed that hospitality is in the first place about the interaction between people. Organisations pay attention to hospitality by selecting and training their employees. However, at the same time, the experts recognise a significant contribution of the physical environment. Although hospitality is in its essence about contact between people, the experts agreed that the environment where people interact supports the interaction between people. An expert in hotels and restaurants explained: “the physical environment influences our experience by its light, its colours, its smells and its shapes”.

Furthermore, current and future technical developments will increase the ability of the physical environment to co-design experiences. An expert pointed to new materials, which enable us to create new shapes of rooms, for example, curved instead of straight. Dynamic functions such as light and colour can change over time, or consumers can customise the settings themselves. One expert explained that at the airport they use dynamic light in the VIP lounge. In the morning the light is fresh blue to induce energy and in the evening the light is warm, orange and yellow to make travellers feel relaxed. Responding to the fact that the mood of people changes during the day by adjusting the light can also be experienced as hospitable. Thus, the experts believed that human-

related service cues are most important for a hospitable experience. However, environment-related cues support the interaction between people and co-influence the experience of hospitality.

Elaborating on the environmental cues, the experts easily came up with environmental characteristics that they associate with hospitality. Round shapes rather than angular shapes, soft textures rather than hard ones, warm rather than cold. “One time I visited a restaurant with a floor made out of stone. It felt so chilly and cold. To me this was not a hospitable floor”. However, hospitable environmental cues are highly interrelated. “Experience is a holistic process. We can gain insights by examining environmental details. However, as cues all interact, the whole is greater than the sum of its parts”. Additionally, the cues that are hospitable depend on the situation. One expert illustrated that in The Netherlands we probably associate cosy, dimmed light with hospitality. On the contrary, in Mediterranean countries people are used to bright fluorescent light and may evaluate that type of light as hospitable.

Conclusions

As a next step after the literature review described in chapter 1, study 1 resulted in a better understanding of the concept of the experience of hospitality. Study 1 shows that the core of the concept of the experience of hospitality seems to be *personal attention*. Furthermore, experiencing hospitality in a service environment is suggested to take place through a mixture of the seven experiential dimensions of hospitality: *welcome, at ease, empathy, servitude, acknowledgement, autonomy and surprise*.

Welcome, at ease, empathy, servitude and *acknowledgement* confirm the expectations based on the literature. The dimension *welcome* is in line most authors that have described hospitality, such as Ariffin and Maghzi (2012), Brotherton (2005), Burgess (1982), Hemmington (2007), O’Gorman (2000) and Tasci and Semrad (2016). The dimensions *servitude* resembles the hearth-soothing factor of hospitableness defined by Tasci and Semrad (2016) and is also reflected in descriptions of others (Brotherton, 2005; Hemmington, 2007; Blain & Lashley; Telfer, 2000). The dimension *at ease* was mentioned by Hemmington (2007), Nailon (1982) and Telfer (2000) and looks like the heart-assuring factor of hospitableness identified by Tasci and Semrad (2016). *Empathy* had already been mentioned by authors referring to understanding the needs of guests (Ariffin & Maghzi, 2012; King, 1995; Matzko, 1996; Sim, Mak, & Jones, 2006; Tideman, 1983). The dimension *acknowledgement* is in line with Ariffin and Maghzi (2012), who describe personalisation and a special relationship as hospitable. Finally, Hemmington (2007) describe ‘lots of little surprises’ as parts of hospitality, which is in line with the dimension *surprise* in the present study.

However, despite the suggestions from the hospitality literature, study 1 did not show pleasure or entertainment as a dimension of the experience of hospitality. Instead, the present study suggests two ‘new’ dimensions: *surprise* and *autonomy*. Until now there were no indications in the literature for those experiential dimensions of hospitality. Furthermore, according to the experts consulted in the study, the relative importance of the dimensions is expected to depend on individual, contextual and temporal characteristics.

Concerning the role of particular service cues, the experts emphasised the dominant role of personal contact between service employees and consumers. However, environmental-related service cues are expected to support this interaction and will also contribute to the experienced hospitality. Additionally, the experts came up with particular environmental cues related to hospitality, such as round shapes, beautiful music, an open door, soft textures. According to them, hospitable cues are dependent on the context, such as culture and climate, and on the interplay with other service cues. After study 1, we now have an idea of the experiential dimensions of hospitality based on the opinion of hosts, the service experts. Study 2 focusses on what consumers, the consumers of service organisations, experience as hospitality.

Study 2: service consumers

In addition to the expertise of service experts in the field of hospitality (study 1), hospitality was now examined from the perspective of the people who receive it. Consumers from six types of service environments shared their experiences and opinions about hospitality.

Method

Participants. Eighty-nine consumers of a hotel (n=18), a hospital (n=14), a funeral company (n=20), a railway company (n=12), a bank (n=12) and a concert hall (n=13) in The Netherlands were asked to share their experiences and opinions on hospitality. The service environments were selected as cases to obtain maximal variation and therefore cover different areas of the service industry (Yin, 2003). In line with study 1, the organisations belong to different service sectors and vary in utilitarian versus hedonic values (Babin, Darden and Griffin, 1994; Wakefield & Blodgett, 1996).

Research design. The participants were interviewed face-to-face by using two different projective techniques, which are used to uncover (unconscious) feelings, beliefs, attitudes and motivation, which many consumers find difficult to articulate (Donoghue, 2000). A combination of Critical Incident Technique and the technique of storytelling was used. Critical Incident Technique, originally developed by Flanagan (1954) was used to gather examples of hospitable and inhospitable experiences (Gremier, 2004), while storytelling (Koll, von Wallpach, & Kreuzer, 2010) was used to create ideal scenarios of hospitality. The beginning of the scenario was given and the respondents were asked to complete it.

Procedure. The participants were first asked to describe hospitable and inhospitable experiences within the context of the particular service provider (the critical incidents). They were then asked to create an imaginary ideal scenario for that specific context.

Analysis. As in study 1, thematic data analysis was carried out to uncover the experiential dimensions of hospitality. For the analysis, the transcribed data of the critical incidents and the ideal scenario were taken together. The coding scheme consisting of the seven dimensions from study 1 was the starting point for the analysis.

Results

Experiential dimensions of hospitality

Study 1 indicated that personal attention is the central element of the experience of hospitality. The results of study 2 support this assumption. An employee of a financial institution for instance stated: “hospitality is about giving attention”, and a hotel guest argued: “attention is most important for a feeling of hospitality”.

Regarding the experiential dimensions of hospitality, the results of study 2 are largely in line with the results of study 1. The dimensions *welcome*, *at ease*, *empathy*, *acknowledgement*, *servitude* and *autonomy* resulting from study one, were also relevant in study two. However, in contrast to the experts in study 1, who mentioned *surprise* as an essential characteristic of a hospitable experience, consumers in study 2 hardly mentioned *surprise* in relation to hospitality. Sometimes consumers mentioned positive experiences in which something exceeded their expectation, but the link with hospitality was less clear. For all the six organisations *surprise* was an element that was infrequently referred to.

Furthermore, study 2 revealed two additional experiential dimensions of hospitality. In the first place, *efficiency* in service delivery was associated with hospitality in all of the six service environments. *Efficiency* refers to smooth procedures and the ease of arranging what consumers want. Especially in the hotel, the railway company and the bank, consumers often mention aspects concerning efficiency. “For a quick check-in, the hotel should be able to easily find your reservation in the computer” (hotel guest), “a good flow of passengers and easy check-out, no chaos” (traveller railway station) and “I often have unexpected meetings, so meeting rooms that are available for us without the requirement to make a reservation in advance, that’s hospitality to me” (bank employee). These findings are in line with Hepple et al. (1990) and Groen (2014), who also found smooth procedures as part of the hospitality experience.

Secondly, *entertainment*, described in the literature as one of the elements of hospitality (Telfer, 2000; King, 1995; Burgess, 1982 and Hemmington, 2007) but not mentioned in study one, did appear in study 2, albeit with a somewhat different interpretation. The participants did not talk about it in the sense of pleasure or fun. Instead, they mentioned distractions or pastimes, such as providing magazines to read or toys for children and offering something to drink.

As study 1 and study 2 took place during the same time period, the results of the second study could be inserted in round 3 of the Delphi study. The experts were asked to reflect specifically on the differences between their ideas and those of the consumers in study 2. They reached consensus that *surprise*, *efficiency* and *entertainment* may probably not be separate dimensions of a hospitality experience, but instead are antecedents of the perception of one or more of the six other experiential dimensions of hospitality (*welcome*, *at ease*, *empathy*, *servitude*, *acknowledgement*, and *autonomy*). *Surprise* may be a result of exceeding expectations; instead of being a separate dimension it can result in a ‘wow experience’ in one of the six experiential dimensions. An organisation can be, for instance, surprising by being extraordinary empathetic or providing outstanding acknowledgement. Efficient procedures (*efficiency*) and offering something that makes waiting more pleasant

(*entertainment*) may give people the feeling that they are being understood, which contributes to the *empathy* dimension of hospitality. This assumption is in line with Berry et al. (2006), who stated that efficient procedures and entertainment are in fact functional cues to the service environment, not experiential dimensions that occur inside people's minds. Figure 2.2 gives an overview of the experiential dimensions of hospitality after study 2, with *entertainment*, *efficiency* and *surprise* below a dotted line, because their function as separate dimensions is doubted.

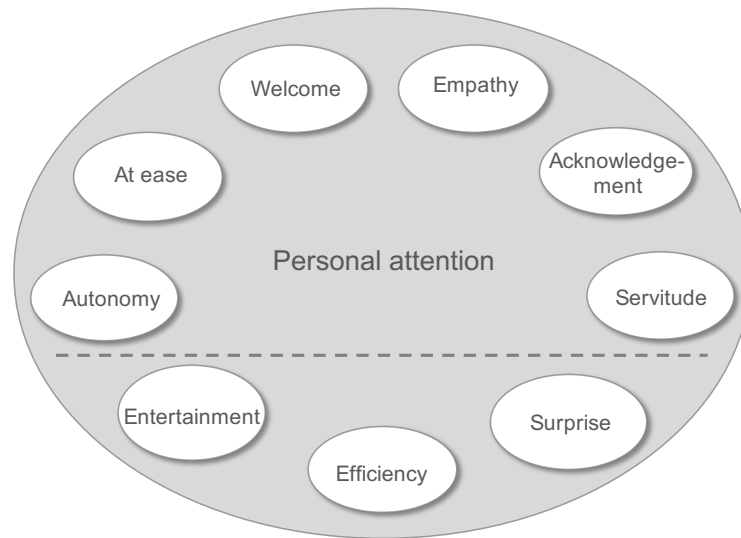


Figure 2.2. Experiential dimensions of hospitality based on Study 1 and Study 2.

Contextual, individual and temporal differences

The results of study 2 provide evidence for the assumed contextual, individual and temporal differences in the prevalence of the various experiential dimensions. Table 2.1 provides an overview of the experiential dimensions and the percentages of phrases that referred to the dimensions in each service context. In line with the expectations from study 1, study 2 also showed that all experiential dimensions were relevant in every service context, but their relative prevalence differed. The *welcome* and *servitude* dimensions were substantially referred to for all of the six service organisations. However, for the other dimensions the percentages of phrases that apply to them vary from organisation to organisation. At the concert hall, for example, the most common word mentioned in relation to hospitality was *welcome* (25% of the phrases). At the railway company *at ease* was mentioned the most (25% of the phrases). In the hotel, words related to *acknowledgement* were most prevalent (20% of the phrases), and customers of the funeral company most often gave examples of hospitable experiences with respect to *autonomy* (34% of the phrases).

In addition, study 2 provides additional support for the idea that the relevance of the various dimensions depends not only on the type of service, but also on the type of consumer. To illustrate,

in the hotel, both business and leisure guests took part in the study. Business guests talked more about efficiency, for instance appreciating a quick check-in, compared to leisure guests. Leisure guests, on the other hand, attached more value to a personal approach of staff than business guests. In addition, there appeared to be a difference between two types of passengers within the railway company, between explorers (trendy, flexible people for whom independence and pragmatism are important) and certainty seekers (friendly people for whom safety and clarity are important). Explorers often referred to empathy when talking about hospitality, whereas certainty seekers hardly referred to it. Empathy thus seems to be important for an explorer's experience of hospitality, while for a security seeker empathy does not seem to contribute much to hospitality.

Table 2.1. The percentage of phrases that refer to the various experiential dimensions of hospitality for each organisation.

	Hotel	Hospital	Railway company	Concert Hall	Bank	Funeral company
Welcome	18	15	15	25	17	15
Servitude	15	17	15	19	13	20
At ease	12	15	25	11	12	8
Acknowledgement	20	15	5	17	19	4
Efficiency	17	8	16	5	19	2
Empathy	5	15	10	8	6	8
Autonomy	0	4	2	8	3	34
Entertainment	6	7	9	3	9	8
Surprise	7	5	2	3	3	1

< 15%.
 15-20%
 > 20%

Finally, regarding the temporal differences in the perception of hospitality, in both the critical incidents and the ideal scenario, the participants referred to different moments in the service delivery process. However, most frequently, the arrival and reception at the organisation were mentioned. Remarkably, no incidents or elements in the scenarios were related to the departure phase.

Service cues

In addition to the understanding of the meaning of the experience of hospitality, also the role of service cues was addressed. Most hospitable and inhospitable experiences that consumers remembered were associated with hospitality because of the behaviour of employees (humanic cues according to Berry et al., 2006), the products or processes (functional cues according to Berry et al., 2006) or a combination of both. One third of the incidents referred to a problem in the category of functional cues, solved by employees in either a hospitable or an inhospitable way. For example,

a participant reported that he had to wait for an hour in a hospital without getting feedback on why and how long he had to wait. This resulted in a negative experience of hospitality. Another patient reported that he had to wait for an appointment, but that an employee took the time to explain why, made apologies and offered something to drink to compensate for the delay. This generated a positive experience of hospitality.

Participants infrequently mentioned environmental cues in relation to hospitality (mechanic cues according to Berry et al., 2006). From the seventy reported incidents only three referred to characteristics of the service environment: a beautiful entrance of a hospital, an out-dated and untidy office and the presence of ants in a room where a deceased person was laid out. Although the participants hardly spontaneously came up with environmental cues as triggers for a welcoming or inhospitable experience, the participants did mention them when the interviewers explicitly asked about environmental cues that could influence their experience of hospitality. Table 2.2 provides an overview of the environmental cues that were mentioned and shows that participants came up with environmental cues such as cleanliness, light, warm colours, warmth (temperature) and fresh smells or food smells (coffee, bread).

Table 2.2 Environmental aspects mentioned in relation to hospitality - ordered from most frequent to least frequent.

Environmental cues	Explanation	Service environment
Cleanliness	For the experience of freshness, tidiness and paying attention to the environment	Railway station/train, office
Light	For the experience of freshness, tidiness and paying attention to the environment	Hotel, hospital
Colour (red, orange)	For a warm, hospitable feeling	Concert hall, funeral company
Sound (music)	Relaxing background music	Railway station, funeral company
Sound (acoustics)	Good acoustics	Office
Temperature	For the experience of warmth	Railway station
Taste (coffee, tea, water or fruit)	For the experience of a generous offer	Railway station/train, office, funeral company
Scent (fresh)	For a fresh smell	Railway station/train
Scent (coffee, bread)	For a comfortable atmosphere	Office, funeral company

Furthermore, the cues people experience as hospitable for the various experiential dimensions seem to depend on the service context. For instance, consumers of the concert hall experienced autonomy because they could choose their own seats. In a hospital, patients experienced autonomy when they could arrange their appointments themselves and had a say in their medical treatments. Relatives of the deceased were experiencing autonomy when the funeral company gave them the freedom to visit the deceased at any time they wanted. Examples of service cues that consumers mentioned in relation to empathy in a hospital were a practitioner who put a hand on the patient's shoulder and the use of language that patients can understand, while in the context of a hotel a bottle of cold water at the exit when the weather was warm was experienced as empathetic.

In conclusion, most hospitable and inhospitable experiences that people remember are about excellent or inferior attitudes and behaviours of service personnel and about products and processes that, usually in a negative way, have influenced their experience of hospitality. Participants did not spontaneously mention environmental aspects in relation to a hospitable experience. However, when prompted for environmental cues, they came up with environmental cues like cleanliness, light, warm colours, warmth and fresh smells or food smells. An explanation may be the mainly subconscious processing of environmental cues (Dijksterhuis et al., 2005; Kahneman, 2012). People are usually not aware of the influence of ambient cues on their experience, but they can mention these cues in relation to hospitality when explicitly prompted. However, these explanations should be interpreted with caution; people often think they know why they have a certain opinion or feeling, but those explanations are usually unreliable (Kahneman, 2012), and may depend on the type of service.

Conclusions

The main objective of this chapter was to explore the meaning of the concept of experience of hospitality. Two qualitative studies, one with service experts (hosts) and one with service consumers (guests), resulted in a better understanding of the concept. The experience of hospitality can be defined as the feeling of receiving personal attention and consists of a mixture of six experiential dimensions: welcome, at ease, empathy, servitude, acknowledgement and autonomy. Based on the present studies, *surprise*, *entertainment* and *efficiency* do not seem to be separate dimensions but means that contribute to the experience of one of the six dimensions of hospitality. In order not to lose valuable information, in addition to the six dimensions also these three factors will be considered in the next phase of the research, in which a scale will be developed to measure the experience of hospitality. Probably then the influence of the factors *surprise*, *entertainment* and *efficiency* will become more evident.

Further, the type of service, the type of consumers and the moment in the service delivery process define the optimal mixture of the six experiential dimensions for the experience of hospitality in a particular situation.

Table 2.3 gives an overview of the specific attributes suggested in the literature and mentioned in study 1 and study 2, grouped in the six experiential dimensions of hospitality and the three influencing factors. Table 2.3 can be viewed as an update of column 6 of Table 1.3 presented in Chapter 1. The findings enrich the ideas suggested by the literature. To a large extent, the findings are in line with the literature. However, the *autonomy* dimension suggested in this chapter is new, and the *entertainment* dimension has a somewhat different content and meaning.

The two empirical studies add knowledge on the individual perspective (described in Chapter 2) on the meaning of hospitality. The studies contribute to the understanding of the concept of hospitality from the perspective of the consumer who experiences the hospitality when interacting with an organisation.

Table 2.3. *Experiential dimensions of hospitality with their corresponding attributes, based on the results of literature, Study 1 and Study 2. For Study 1 and Study 2, the attributes have been translated from Dutch.*

	Literature	Study 1	Study 2		Literature	Study 1	Study 2
<i>Welcome</i>				<i>At ease</i>			
Open	x	x	x	Safe	x	x	x
Inviting			x	Secure	x		x
Welcome	x	x	x	At home			x
Warm	x	x		At ease		x	
Courteous	x			Comfortable		x	x
Friendly	x	x	x	Relaxed		x	
Polite	x	x		Knowing what's coming		x	x
<i>Empathy</i>				<i>Acknowledgement</i>			
Understanding (general)		x	x	Contact		x	x
Understanding needs	x	x	x	Feeling important	x	x	
Involvement			x	Appreciation		x	
Support			x	Interest		x	x
Same wavelength		x	x	Respect	x	x	x
				Taken seriously		x	x
				Taking time			x
<i>Servitude</i>				<i>Autonomy</i>			
Helpful	x	x		Being in control		x	x
Relieve of tasks & worries			x	Having influence		x	x
Effort to take care	x		x	Independence			x
Sincere		x		Freedom		x	
<i>Entertainment</i>				<i>Surprise</i>			
Distraction			x	Unexpected (positively)		x	
Pleasure	x			Exceeding expectations		x	x
Entertainment	x			Surprising		x	
<i>Efficiency</i>				<i>General</i>			
Efficient			x	Personal attention	x	x	x
Easy			x				
Fluent			x				

Furthermore, this paper attempts to unify our knowledge of hospitality from a variety of different perspectives, and it adds evidential support to academic fields where interpretive research is prevailing. For instance, this study supports Telfer (2000), who studied hospitality from the moral perspective and believed that hospitality is about providing safety and genuine needs for employees to care for others (dimensions *at ease* and *servitude*). It also supports Lashley (2000), who took an exchange perspective and emphasized 'generosity', 'a desire to please' and 'genuine regard for the

guest as an individual' as characteristics of hospitality (dimensions *servitude* and the central element of *personal attention*).

Furthermore, we aimed to explore the similarities and differences in the experience of hospitality between service contexts, service consumers and moments in the service delivery process. The findings of Study 1 and Study 2 both suggest that all experiential dimensions may be relevant in any type of service organisation, for every consumer and at all stages in the service delivery process. However, the prevalence of the dimensions is assumed to vary dependent on the context, the individual and the moment in the service delivery process. Future research may further investigate these contextual, individual and temporal differences.

Finally, the studies described in this chapter explored what environmental service cues may be most relevant for a hospitable experience. Both service experts and service consumers allocate a crucial role to the attitude and behaviour of the service employees. However, experts also recognise a significant supporting role of the physical service environment. Experts and consumers came up with cleanliness, an open entrance, round shapes, warm colours, soft textures, warmth, friendly light, relaxing music, good acoustics, a fresh smell, and offering of something to drink or eat. The associations with hospitality are expected to differ, depending on the type of service as well as personal characteristics like cultural background. In this stage it is hard to conclude which service cues are in general most relevant for a hospitable experience. Because the participants did not spontaneously mention environmental cues, we had to rely on associations and explanations participants gave in reaction to explicit questions on the subject. Furthermore, the use of verbal responses in both studies result in information that people have consciously available. As it is plausible that the processing of environmental cues occurs mainly on a subconscious level, the results on what service cues are most relevant with respect to hospitality are just an indication.

Discussion

Chapter 1 showed that the scientific attention for the phenomenon of hospitality has grown enormously for the last decades. From various disciplines the concept of hospitality is studied and discussed, but mainly on a descriptive level. Unfortunately, empirical research on hospitality is scarce, and academics still don't know what service consumers experience when they experience hospitality. This lack of knowledge makes it difficult to make progress in understanding and designing consumers' experience of hospitality.

Chapter 2 presented two studies that examined the concept from the viewpoint of service practitioners, both experts and consumers. These studies showed that also in the service industry interest in and attention for hospitality is growing. The experts unanimously agreed that hospitality is a core element of service provision, even outside the hospitality business where hospitality is not the primary focus. People are more and more convinced that the topic is relevant. Service organisations take actions to improve their hospitality performance, often by training their employees. However, no theoretical framework exists and also practitioners are aware of the

limitations of not knowing what hospitality really means. The urge for a theoretical framework seems not only to come from academics, but also from practitioners, who need it to measure and improve their hospitality performance.

Furthermore, the two exploratory studies presented in this chapter clearly show that the concept of hospitality is a complex phenomenon. It is a challenge to find patterns in the large number of variables that influence each other in people's experience of hospitality. However, this is a necessity to do this in order to make progress in designing hospitable service experiences, which currently occurs mainly through trial and error. The qualitative studies described in this chapter exposed in-depth information on the meaning of the experience of hospitality. The six identified experiential dimensions of hospitality serve as a starting point for a theoretical framework, and subsequently for a scale measuring consumers' experience of hospitality.

Towards a measurement scale

The exploratory studies presented in this chapter resulted in understanding the experience of hospitality, but are based on a limited number of subjects, a limited number of service organisations and, due to the qualitative character of the research, also on the interpretation of the researchers. The next step is to validate whether these experiential dimensions of hospitality actually exist for consumers of service organisations.

Besides validating the experiential dimensions of hospitality, the insights so far set the stage to the development of an instrument to measure hospitality experience in service processes. This instrument will be used in the experimental studies that follow in part two of the research project, described in chapters 4 to 7. The validation of the experiential dimensions and the development of the Experience of Hospitality Scale are described in the next chapter.

in brief

Chapter 1 presented an overview of the academic literature on hospitality and showed that the concept of hospitality is still ill-defined. Especially literature dealing with hospitality from the consumer perspective is scarce.

Chapter 2 explored what hospitality means according to service practitioners and consumers. The chapter shows that the service industry needs a better understanding of hospitality. Two qualitative studies with both service experts and service consumers succeeded in making the abstract concept of hospitality more tangible, by identifying six experiential dimensions of hospitality: welcome, atease, empathy, servitude, acknowledgement and autonomy. Chapter 2 sets the stage to the development of an instrument to measure hospitality experience in service environments.

The next chapter describes the development of the novel and compact Experience of Hospitality Scale (EH-Scale) for measuring consumers' experience of hospitality in any service environment. Based on a longlist of items revealed in Chapter 3, a 47-item version of the scale was developed and tested in a first quantitative study amongst 848 consumers of a restaurant, a hospital and a business fair. The scale reduced to a scale of 15 items, that was subsequently validated in a second study with another 255 visitors at a restaurant, a concert hall, a local government and at two hotels. The result is the compact 13-item EH-Scale.

3. the experience of hospitality: validation and scale development⁶

⁶ Chapter 2 and Chapter 3 together resulted in the manuscript Pijls, R., Groen, B.H., Galetzka, M., Pruyn, A.T.H. (2017). Measuring the experience of hospitality: Scale development and validation. *International Journal of Hospitality Management*, 67, 125–133. <http://doi.org/10.1016/j.ijhm.2017.07.008>.

Introduction

The qualitative research described in Chapter 2 outlines the contours of the concept of the experience of hospitality. By distinguishing six experiential dimensions of hospitality (*welcome, at ease, empathy, servitude, acknowledgement* and *autonomy*), and three additional factors that are probably not separate dimensions but factors that contribute to the experience of the six dimensions (*surprise, entertainment and efficiency*), we now have an idea of what people in a service environment experience when they experience hospitality. However, the results are based on qualitative data of experiences and opinions of a limited number of participants.

The research described in this chapter elaborates on the qualitative research in Chapter 2. The meaning of the concept of the experience of hospitality with its experiential dimensions is validated and the experience of hospitality scale (EH-Scale) is developed. This scale is required for part two, in which the influence of environmental service cues on the experience of hospitality is investigated. The validation of the construct and the development of the Experience of Hospitality Scale (EH-Scale) have been performed in two stages. The first stage focused on (1) designing a comprehensive version of the EH-Scale; (2) screening the items to reduce the initial pool to a more manageable size, and (3) exploring the underlying structure of the data. The second stage involved validation of the factor structure of the condensed scale by application on a new dataset.

Stage 1: scale construction, item screening and factor structure

Firstly, a comprehensive version of the EH-Scale was designed based on the attributes of the dimensions of the two exploratory studies described in Chapter 2 and a literature search on existing instruments measuring constructs related to the dimensions of hospitality.

Although there are no instruments measuring the experience of hospitality in service environments, a number of scales contain items that correspond to the various dimensions of hospitality. Several instruments on service quality, which often elaborated on SERVQUAL (Parasuraman, Zeithaml and Berry, 1988), contain items of feeling safe and secure (Getty & Getty, 2003; Giritlioglu, Jones, & Avcikurt, 2014; Klaus & Maklan, 2012; Minjoon & Peterson, 2004; Pantouvakis, 2010) or empathy (Giritlioglu et al., 2014; Pantouvakis, 2010; Reniers, Corcoran, Drake, Shryane, & Völlm, 2011; Sureshchandar, Rajendran, & Anantharaman, 2002). Also other instruments contain scales that refer to experiential dimensions of hospitality, for example to the *welcome* dimension (Blain & Lashley, 2014; Clemes, Gan, & Ren, 2011; Knutson, 1988; Ju & Takayama, 2009; Ren, Qui, Wang, & Lin, 2016; Sim, Mak, & Jones, 2006), the *acknowledgement* dimension (Ariffin & Maghzi, 2012; Gaur, Xu, Quazi, & Nandi, 2011; Sim, Mak, & Jones, 2006), the *servitude* (Ariffin & Maghzi, 2012; Clemes, Gan, & Ren, 2011; Liu & Jang, 2009) and the *autonomy* dimension (Gaur, Xu, Quazi, & Nandi, 2011; McGuire, Kimes, Lynn, Pullman, & Lloyd, 2010; Verleye, 2015; Wang & Netemeyer, 2002). In addition, elements of entertainment (Yoon & Uysal, 2005),

surprise (Finn, 2005; Prayag, Hosany, & Odeh, 2016) and efficiency (Garg, Rahman, & Qureshi, 2014) have already been part of measurement scales.

Table 3.1 gives an overview of the attributes with regard to the perception of hospitality resulting from the qualitative studies described in Chapter 2, the literature study on the concept of hospitality (Chapter 1) and existing instruments related to hospitality. The table is an update of Table 2.3 in Chapter 2. For the initial comprehensive version of the questionnaire, statements were prepared for each individual attribute presented in Table 3.1. Respondents could indicate their agreement on the statements by putting a dash on a line, running from totally disagreeing to totally agreeing. The scale was pretested among 15 hospitality experts and 18 facility employees (cleaning and restaurant) to examine the readability, comprehensibility, wording, ambiguity, and order effects of the questionnaire. Based on the feedback, the wording of several questions was improved, as well as the order of the questions. After this pre-test, the instrument consisted of 47 statements on the attributes presented in Table 3.1.

Data collection

Data for the initial refinement of the 47-item questionnaire were gathered from three samples resulting in a combined sample of 848 visitors to three organisations: a catering company (n=433), a hospital (n=353) and a business fair (n=62). The organisations differed in the type of service offered (mass versus individual) and type of visit (hedonic versus utilitarian, as described by Wakefield & Blodgett, 1996). Amusement is typically hedonic as it fulfils pleasure needs; business can be characterised as utilitarian, because people's visits are obligatory. Catering companies and a business fair can be either hedonic or utilitarian, depending on people's mindset (business or leisure).

The questionnaire was administered on the spot, during the first months of 2016. Visitors were approached at the end of their visit and were asked to participate in a study on customer experience by filling out the questionnaire on a tablet. Participants were asked to indicate the extent to which they agreed with the 47 statements on a continuous rating scale (from totally disagree to totally agree) and to answer questions on demographics (age, gender, educational background).

Scale purification

For the analysis, the procedure described by Matsunaga (2010) was followed. The combined sample from the three organisations was randomly split in half resulting in two separate datasets: one to conduct the Principal Component Analysis (PCA) and one to conduct the Exploratory Factor Analysis (EFA). For the initial item reduction, the PCA was conducted on dataset 1 (n=417). As the factors were expected to be correlated, the Promax oblique rotation method was used. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was suitable for PCA (KMO =.97). Statistical criteria for item retention were a primary factor loading above .6 and a second highest factor loading below .3 (Henson & Roberts, 2006; Matsunaga, 2010; Park, Dailey, & Lemus, 2002).

Table 3.1. Experiential dimensions of hospitality with corresponding attributes derived from the qualitative studies and literature on hospitality and on measurement instruments.

	Qualitative studies	Literature hospitality	Literature on instruments		Qualitative studies	Literature hospitality	Literature on instruments
<i>Welcome</i>				<i>At ease</i>			
Open	x	x		Safe	x	x	x ^{1,8,14,15,19,20}
Inviting	x		x ⁷	Secure	x	x	x ^{6,10,19}
Welcome	x	x	x ^{2,3,9,17,19}	At home	x		
Warm	x	x		At ease	x		x ^{1,19}
Courteous		x	x ^{7,15,20}	Comfortable	X		x ^{7,10,15}
Friendly	x	x	x ^{2,11,19}	Relaxed	X		x ¹⁹
Polite	x	x	x ^{7,15,20}	Knowing what comes	x		x ¹⁵
Approachable			x ⁹				
<i>Empathy</i>				<i>Acknowledgement</i>			
Understanding (general)	x		x ¹⁸	Contact	x		x ^{7,15}
Understanding needs	x	x	x ^{8,15,20}	Feeling important	x	x	x ^{1,19}
Involvement	x			Appreciation	x		
Support	x			Interest	x		
Same wavelength	x		x ²	Respect	x	x	x ^{1,7,15}
				Taken seriously	x		x ⁶
				Taking time	x		x ^{7,19}
<i>Servitude</i>				<i>Autonomy</i>			
Helpful	x	x	x ^{1,3,12}	Being in control	x		x ^{13,21}
Relieve of tasks & worries	x			Having influence	x		x ¹³
Effort to take care	x	x	x ¹²	Independence	x		
Sincere	x			Freedom	x		x ²²
Available			x ²⁰	Having choice			x ⁶
Treated like a king/queen			x ¹⁹				
<i>Entertainment</i>				<i>Surprise</i>			
Distraction	x			Unexpected (positively)	x		
Pleasure		x		Exceeding expectations	x		x ²⁰
Entertainment		x	x ^{1,23}	Surprising	x		x ^{4,16,20}
<i>Efficiency</i>				<i>General</i>			
Efficient	x		x ⁷	Personal attention		x	
Easy	x		x ^{5,14}				
Fluent	x						

¹Ariffin & Maghzi (2012), ²Blain & Lashley (2014), ³Clemes, Gan & Ren (2011), ⁴Finn(2005), ⁵Garg, Rahman, & Qureshi (2014), ⁶Gaur, Xu, Quazi, & Nandi, (2011), ⁷Getty & Getty (2003), ⁸Giritioglu, Jones, & Avcikurt, (2014), ⁹Ju & Takayama (2009), ¹⁰Klaus & Maklan (2012), ¹¹Knutson (1988), ¹²Liu & Jang (2009), ¹³McGuire, Kimes, Lynn, Pullman, & Lloyd, (2010), ¹⁴Minjoon & Peterson (2004), ¹⁵Pantouvakis (2010), ¹⁶Prayag, Hosany, & Odeh (2013); ¹⁷Ren, Qui, Wang, & Lin (2016), ¹⁸Reniers, Corcoran, Drake, Shryane, & Völlm (2011), ¹⁹Sim, Mak, & Jones (2006), ²⁰Sureshchandar, Rajendran, & Anantharaman (2002), ²¹Verleye (2015), ²²Wang & Netemeyer (2002), ²³Yoon & Uysal (2005)

Items with lower factor loadings were deleted one by one, resulting in a remaining set of 26 items spread over three factors, together explaining 68.7% of the variance. The results are shown in Table 3.2.

Table 3.2. Principal Component Analysis (PCA, Promax rotation, n=417). Items with high factor loadings are bold. Items have been translated from Dutch.

Item	Dimension Study 1&2	Factor loadings		
		Component 1	Component 2	Component 3
Experiencing effort	Servitude	.92	-.03	-.02
Experiencing involvement	Empathy	.91	-.01	-.03
Experiencing interest	Acknowledgement	.90	.02	-.07
Experiencing support	Servitude	.89	-.08	.02
Treated as a king/queen	Servitude	.83	.01	-.03
Experiencing relief	Servitude	.79	-.09	.08
Experiencing courteousness	Welcome	.77	.06	.05
Distraction	Entertainment	.74	-.06	.11
Experiencing appreciation	Acknowledgement	.64	.24	.04
Feeling important	Acknowledgement	.62	.25	-.01
Same wavelength	Empathy	.62	.09	.22
Feeling independent	Autonomy	-.06	.89	-.03
Having choice	Autonomy	-.24	.87	.09
Feeling at ease	At ease	.14	.80	-.02
Feeling relaxed	At ease	.11	.77	-.00
Feeling comfortable	At ease	.06	.77	.05
Feeling Safe	At ease	.26	.67	-.11
Easy	Efficiency	.08	.61	.12
Feeling invited	Welcome	-.06	.03	.89
Experiencing openness	Welcome	-.07	.09	.83
Experiencing control	Autonomy	-.14	.23	.73
Experiencing freedom	Autonomy	-.05	.18	.73
Exceeding expectations	Surprise	.21	-.24	.70
Understanding needs	Empathy	.16	.08	.64
Experiencing warmth	Welcome	.24	.00	.63
Efficiency	Efficiency	.29	-.03	.62
% of variance		57.4%	7.0%	4.3%
Total % of variance				68.7%

Secondly, to explore the underlying factor structure (Matsunaga, 2010), this 26-item scale was submitted to an EFA (Principal Axis Factoring and Promax rotation) on dataset 2 (n=434). Based on the Kaiser Guttman criterion (eigenvalues > 1.0), scree test and Parallel analysis (Hayton, Allen, & Scarpello, 2004), both a two-factor and a three-factor solution were explored. Based on the interpretability of the factors and theoretical expectations, the three-factor solution seemed most suitable. Based on the .6/.3 rule for item retention, another eleven items were deleted from the scale, resulting in a 15-item scale. The results are presented in Table 3.3. The three factors were labelled as *inviting*, *care*, and *comfort* and together explained 74.6% of the variance. Communalities, defined as the proportion of a variable's variance explained by the three factors combined, are all

Table 3.3. Factor Analysis (EFA, Promax rotation, $n=434$) and communalities (h^2). Items with high factor loadings are bold. Items have been translated from Dutch.

Item	Dimension Study 1&2	h^2	Factor loadings		
			Inviting	Care	Comfort
Experiencing openness	Welcome	.78	.93	-.02	-.04
Feeling invited	Welcome	.57	.68	.05	.05
Experiencing freedom	Autonomy	.58	.62	.04	.16
Experiencing involvement	Empathy	.78	-.07	.92	.01
Experiencing support	Empathy	.66	.07	.83	-.09
Treated as a king/queen	Servitude	.71	.08	.84	-.07
Experiencing relief	Servitude	.55	-.00	.75	-.01
Experiencing effort	Servitude	.74	.09	.80	.00
Experiencing interest	Acknowledgement	.73	-.07	.79	.15
Feeling important	Acknowledgement	.73	-.04	.73	.19
Feeling comfortable	At ease	.80	-.01	.01	.90
Feeling at ease	At ease	.73	.00	.06	.81
Feeling relaxed	At ease	.69	.06	.04	.76
Feeling independent	Autonomy	.58	.01	-.01	.76
Having choice	Autonomy	.56	.04	-.03	.76
Eigenvalue			1.07	8.62	1.50
% of variance			7.10	57.50	9.97
Cumulative % of variance			74.57	57.50	67.47
Internal Consistency (Cronbach's α)			$\alpha=.84$	$\alpha=.94$	$\alpha=.91$

above .3. Furthermore, Cronbach's alphas exceed the minimum of .7, as recommended by Nunnally and Bernstein (1994) and Kline (1999), suggesting that the scales are reliable.

As can be seen in Table 3.3 the experiential dimensions that resulted from the qualitative studies described in Chapter 3 group together to form three experiential factors of the experience of hospitality. Items of the *welcome* dimension and one item of the *autonomy* dimension make up the *inviting* experiential factor. Items from the *empathy*, *servitude* and *acknowledgement* dimensions group together into the *care* factor, and items from the *at ease* dimension and some items of the *autonomy* dimension make up the *comfort* factor. Items of the *efficiency*, *entertainment* and *surprise* dimensions dropped out during the factor analysis. Figure 3.1 depicts the composition of the factors in relation to the original experiential dimensions of hospitality.

Stage 2: confirmation of the factor structure

For the validation of the three-factor model that resulted from the PCA and EFA, a CFA was conducted on a totally new dataset using the software package IBM SPSS AMOS 23. Two hundred and fifty-five visitors of six organisations participated in stage 2: a restaurant at an international

furniture retailer (n=42), a national concert hall (n=61), a medium size town hall (n=83) two hotels (n=46) and a Dutch homeware retailer (n=12). The 15-item EH-Scale was administered on the spot. Visitors were approached at the end of their visit and were asked to participate in a study on customer experience by filling in a paper version of the EH-Scale.

For the evaluation of the EH-Scale, a multi-criteria strategy was followed (Hu & Bentler, 1999). The CFA, including the 15-items of the scale, did not initially meet all the criteria. To improve the fit of the model, two items with low loadings ('feeling independent' and 'having choice') were removed one by one resulting in a model with adequate model fit. The removed items were both items of the original autonomy dimension, resulting in only one autonomy-item (experiencing freedom) in the remaining list of items. Loading coefficients of the 13 items ranged from .57 to .92 and the chi-square fit index was statistically significant ($\chi^2=142.56$; $df=62$, $p<.01$). The values of Goodness-of-Fit index (GFI), Adjusted Goodness-of-Fit index (AGFI), Comparative Fit Index (CFI) and Root Mean Square Residual (RMSEA) were .92, .89, .96 and .07, respectively. Based on Matsunaga (2010) and Marsh, Hau, & Wen (2004) the criteria of $GFI>.90$, $AGFI>.85$, $CFI>.90$ and $RMSEA<.08$ were met, indicating an adequate fit of the model. Table 3.4 shows the results of the CFA.

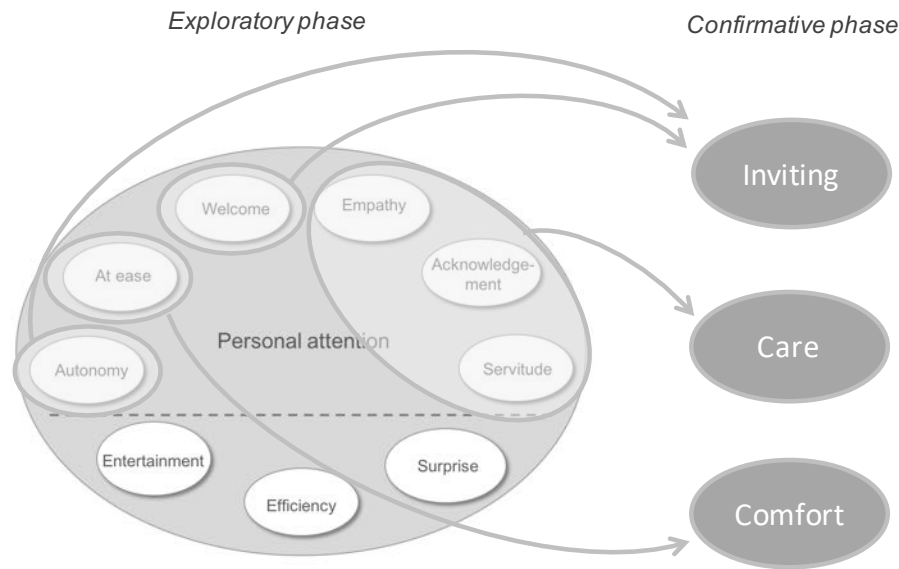


Figure 3.1. The composition of the three experiential factors of the experience of hospitality.

Internal consistency for the three factors was examined using Cronbach's alpha: $\alpha=.78$ for the *inviting* factor, $\alpha=.92$ for the *care* factor, and $\alpha=.85$ for the *comfort* factor. All alphas exceed the minimum of .7, as recommended by Nunnally and Bernstein (1994), suggesting reliable scales.

Since several qualitative and quantitative steps were followed to acquire a thorough and extensive instrument, content validity is assumed. As can be seen in Tables 3.4 and 3.5, convergent validity of the measurement model was evidenced by 1) significant loading coefficients of .57 to .92 ($p < .001$) (Kline, 2005), 2) composite reliability values all greater than the recommended .7 (Nunnally and Bernstein, 1994), and 3) average variance extracted values (AVE, Fornell & Larcker, 1981) of the three factors that are all above the cut-off value of .50 (Bagozzi & Yi, 1988).

Table 3.4. Results Confirmatory Factor Analysis (CFA). *All factor loadings are significant ($p < 0.001$).

Factor	Factor loading*	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Average shared variance (ASV)
<i>Inviting</i>		0.81	0.60	0.38	0.34
Feeling invited	0.83				
Experiencing openness	0.88				
Experiencing freedom	0.57				
<i>Care</i>		0.93	0.64	0.35	0.33
Experiencing support	0.74				
Experiencing involvement	0.83				
Treated as a king/queen	0.81				
Experiencing effort	0.83				
Experiencing relieve	0.79				
Experiencing interest	0.85				
Feeling important	0.75				
<i>Comfort</i>		0.89	0.75	0.38	0.36
Feeling at ease	0.89				
Feeling comfortable	0.92				
Feeling relaxed	0.77				

Evidence for discriminant validity was provided by two tests: (1) factor correlations (displayed in Table 3.5) are lower than the threshold of .85 (Kline, 2005), indicating discriminant validity; and (2) the maximum shared variance (MSV), average shared variance (ASV), and average variance extracted (AVE) for each factor (Table 3.4) suggest discriminant validity because $MSV < AVE$ and $ASV < AVE$ (Gaskin, 2012; Hair, Black, Babin, & Anderson, 2010; Fornell & Larcker, 1981).

Table 3.5. Pearson correlations between the factors inviting, care and comfort.

	Inviting	Care
Care	0.55	
Comfort	0.61	0.59

Finally, to examine criterion-related validity, standard multiple regression analyses were carried out on the whole database ($n=1093$), indicating the explanatory power of the three factors on the overall experience of hospitality, overall satisfaction and behavioural intention. The overall experience of

hospitality was measured by three items ('overall, I experience organisation X as hospitable', 'the employees are hospitable to me', 'the areas in the building that I visited seem hospitable to me', Cronbach's $\alpha = .88$). Overall satisfaction was measured by three questions of the ACSI American Customer Satisfaction Model developed by Angelova and Zekiri (2011): 'What is your overall satisfaction with organisation X', 'To what extent have the services of organisation X met your expectations' and 'How close are the services provided by organisation X compared to ideal services' (Cronbach's $\alpha = .84$). Finally, behavioural intention was measured by the revisit intention and recommendation to others (two items, Cronbach's $\alpha = .88$), the items were based on Pullman and Gross (2004). The results of the regression analyses are shown in Table 3.6.

Table 3.6. Results of regression analysis of the EH-Scale on the overall experience of hospitality, overall satisfaction, and behavioural intention. For all three outcome variables, the factors had a significant contribution ($p < 0.001$).

Factors	Overall experience Hospitality			Overall satisfaction (ACSI)			Behavioural intention		
	B	Std. Error	Beta	B	Std. Error	Beta	B	Std. Error	Beta
Inviting	0.56	0.03	0.53	0.34	0.03	0.33	0.34	0.05	0.29
Care	0.19	0.02	0.23	0.18	0.03	0.22	0.17	0.04	0.16
Comfort	0.14	0.03	0.14	0.21	0.03	0.23	0.51	0.04	0.43
Adjusted R ²	0.64			0.46			0.58		

The regression analyses revealed that the three factors of the EH-Scale significantly contributed to the overall experience of hospitality, overall satisfaction and behavioural intention ($p < .001$). The three factors together explained 64% of the variance of the overall experience of hospitality, indicating a satisfactory model fit. The *inviting* factor had the most considerable contribution, followed by the factors *care* and *comfort*. Experiencing *inviting*, therefore, seems the most predictive factor for a positive experience of hospitality. Results further provided evidence that although the other outcome measures of satisfaction and behavioural intention are related to the experience of hospitality, they seem to be separate constructs. The three factors of the experience of hospitality predicted 46% and 58% of the variance of overall satisfaction and behavioural intention, respectively, indicating a less adequate model fit. Moreover, the relative contributions of the three factors differ: for satisfaction, the contributions of the three factors are about equal, and for behavioural intentions, the *comfort* factor contributed most.

Since the experience of hospitality was measured in several service contexts, a regression analysis was also performed separately on the data of the two service organisations that had the most extensive datasets: the catering company ($n=433$) and the hospital ($n=353$). Table 3.7 shows that the three factors of the experience of hospitality in both service environments significantly predict the overall experience of hospitality. Although in both organisations the *inviting* factor contributes most, at the catering company the contributions of *care* and *comfort* are about equal, while in the hospital the *care* factor seems the second most predictive factor followed by *comfort*. These findings

support the hypothesis that resulted from the qualitative studies described in Chapter 3, namely that the importance of the various factors of the experience of hospitality vary depending on the service context. In hospitals, the experience of *care* is more critical for the experience of hospitality than in catering situations.

Table 3.7. Results regression analysis catering and hospital. For both organisations the factors had a significant effect ($p < 0.001$).

Factors	Catering company			Hospital		
	Experience Hospitality			Experience Hospitality		
	B	Std. Error	Beta	B	Std. Error	Beta
Inviting	0.59	0.04	0.54	0.39	0.05	0.42
Care	0.13	0.03	0.16	0.23	0.05	0.27
Comfort	0.18	0.05	0.18	0.13	0.04	0.17
Adjusted R ²	0.56			0.60		

Conclusion

The quantitative research described in this chapter resulted in a validation of the construct of the experience of hospitality and an accompanying scale that measures the experience of hospitality in service environments.

Regarding the meaning of the construct, there are four main conclusions. Firstly, the studies described in this chapter support the hypothesis arising from the exploratory studies described in Chapter 3: *surprise*, *efficiency* and *entertainment* seem to be not separate experiential dimensions, but rather antecedents of the perception of one or more of the six other experiential dimensions of hospitality. These dimensions did not survive the factor analysis, as they neither loaded onto one of the three factors nor appeared as a separate factor.

Secondly, the other six dimensions of the experience of hospitality are grouped in a logical way into three factors of experience of hospitality. The *inviting* factor contains attributes from the original experiential dimensions *welcome* and *autonomy*. The *care* factor includes attributes of the original experiential dimensions *empathy*, *servitude* and *acknowledgement*. Finally, the *comfort* factor encompasses attributes from the original *at ease* dimension.

Thirdly, the *inviting* factor shows the largest predictive factor for the overall experience of hospitality and therefore seems most dominant for people's experience of hospitality. However, when zooming in on particular service contexts, the results confirm the idea that all factors of the experience of hospitality are relevant in every type of service and for every type of consumer, but the relative importance of the factors may vary. Thus, the experience of hospitality can be defined as experiencing personal attention through a mixture of the experience of the three factors *inviting*, *care* and *comfort*. Fourthly, the results further showed that although other outcome measures such

as satisfaction and behavioural intention are related to the experience of hospitality, they seem to be separate constructs.

Regarding the measurement scale, the research resulted in the compact 13-item EH-Scale for measuring the experience of hospitality, applicable in every service context.

Discussion

Theoretical and practical implications

This chapter has both theoretical and practical implications. By presenting the EH-Scale, the present research contributes to the theoretical understanding and measurement of hospitality in a service context from the consumer's point of view. Going beyond the instruments developed by Ariffin and Maghzi (2012), Blain and Lashley (2014), and by Tasci and Semrad (2016) this instrument takes a broader perspective by focusing not only on the characteristics of the interaction with staff, but instead looks for aspects on a more abstract level of the organisation in order to also include the environment, facilities and procedures faced during the service encounter.

The purpose of the present chapter was to validate the meaning of the experience of hospitality and develop an instrument to assess the experience of hospitality which is applicable in any service context. The experiential dimensions are reduced to three distinct experiential factors of hospitality. Although it was not the main objective of the present research, the results also suggest that all factors of the experience of hospitality are relevant in every type of service and for every type of consumer, but the relative importance of the factors may vary.

The research may provide both academics and the service industry insight in what people experience as hospitality, and subsequently a compact assessment tool applicable in any organisation, the EH-Scale, to measure how consumers experience the hospitality that is offered.

Limitations

As Tasci and Semrad (2016) have already remarked, concepts such as hospitableness and the experience of hospitality are difficult to measure because of the intangibility of emotionally laden constructs and because of the influence of cultural, personal and situational factors. However, despite these challenges, researchers have attempted to capture this type of construct in instruments (Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016). The EH-Scale also aims to measure such an intangible construct.

Limitations on the use of such scales are that, although people are instructed not to think too long and rely on their first impressions, people unavoidably have to think explicitly about aspects of the service delivery that they normally process unconsciously. Moreover, although the wording of the questions was carefully chosen and tested, the formulation of the questions may influence the outcome. Perhaps in the future methods will be developed to overcome these problems; for example, by using advanced neuroimaging techniques to recognize emotions. However, thus far

such techniques are not advanced enough to be able to distinguish between subtle differences such as the experience of *inviting*, *care* and *comfort*.

Furthermore, the present EH-Scale was developed based on what Dutch people experience as hospitable and cannot simply be generalized to other parts of the world. Further research needs to be done to investigate contextual, individual and cultural variations in the experience of hospitality. In conclusion, the present research is an endeavour to capture and measure the phenomenon of the experience of hospitality in service environments. Yet the development of the scale is but the beginning of our understanding of the topic. Moreover, the opportunity to measure the experience of hospitality enables researchers to examine the influence of particular service cues, which will contribute to our knowledge of the role of both behavioural and environmental service cues in consumers' experience of hospitality. What service cues influence consumers' experiences of *inviting*, *care* and *comfort*? In what way do these service cues influence how consumers of service environments experience those factors of a hospitable experience? These questions are addressed in Part 2 of the research project, which is presented in subsequently Chapter 4 (a theoretical introduction to the experiments), Chapter 5 (care), Chapter 6 (comfort) and Chapter 7 (inviting).

in brief

Chapter 3 described the stages of the development and validation of the EH-Scale. The scale assesses the experience of hospitality at company level and is applicable in any service setting to measure how consumers experience the hospitality that is offered. In this process, the six experiential dimensions of hospitality that had been revealed in Chapter 2 were further reduced to three main factors: inviting, care, comfort. Thus, the experience of hospitality can be defined as experiencing personal attention through a mixture of the experience of the three factors inviting, care and comfort.

The EH-Scale measures the experience of the three discriminating factors care, comfort and inviting with 13 items. The three factors together explain 64% of the variance of the overall experience of hospitality, indicating a satisfactory coverage of the construct. The EH-Scale is a necessary condition to examine the effect of environmental manipulations on the experience of hospitality, which is described in the Part 2 of the dissertation.

The next chapter is an introduction to the experimental research of Part 2. The chapter describes the theoretical approach by explaining the focus on environmental cues of the service environment and introducing the theory of embodied cognition, which forms the basis for the experimental research.

part 2

influencing the
experience of
hospitality

**4.
theoretical approach:
environmental service cues and
embodied cognition**

Introduction

Now that we understand what people experience as hospitality and now that there is an instrument to measure people's experience of hospitality in service environments, the next step is to focus on the influence of environmental factors on the experience of hospitality. The present chapter explains the theoretical approach of the experimental research. Firstly, the focus on environmental service cues is explicated. Secondly, the theory of embodied cognition is introduced. Finally, the structure and design of the experimental studies is presented.

Environmental service cues

Service literature tells us that the experience of people in service environments is influenced by various factors. To start with, there are factors that are outside the control of the service organisation. *Situational factors* concern the aspects such as the purpose of the visit, companion, and the type of service and the moment in the service process (Bitner, 1992; Walls, Okumus, Wang, & Kwun, 2011). *Individual characteristics* include personality traits, mood state, cultural background and prior experiences (Pullman & Gross, 2004; Walls, et al., 2011).

However, there are also factors that service organisations can use to influence people's experience. Besides the service itself, these service factors can be roughly divided into social cues and environmental cues (Baker, 1987; Baker, Bently & Lamb (2020); Berry et al., 2006; Bitner, 1992; Brunner–Sperdin & Peters, 2009). Social cues concern the appearance and behaviour of people, while environmental cues concern attributes of the physical or virtual service environment. In the hospitality literature, most attention has been paid to social cues by focussing on hospitable behaviour of service staff (e.g. Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016). Although it has been widely demonstrated that environmental cues influence people's experience, environmental cues have hardly been explicitly studied in relation to hospitality.

The influence of the physical environment on consumers has been widely confirmed in the fields of service marketing and environmental psychology. Environmental psychologists have examined the influence of the physical environment on people's thoughts, feelings and behaviour. Mehrabian & Russell (1974) introduced the widely applied stimulus-organism-response (SOR) model. According to this model, stimuli (S) from the environment affect organism's thoughts and feelings (O), which result in approach or avoidance behaviour responses (R). Thus, the environment triggers feelings which in turn encourage someone to stay in an environment or to leave it. From the point of view of hospitality, this would mean that an environmental stimulus could be interpreted as hospitable when it encourages approaching behaviour and inhospitable when it leads to avoidance behaviour.

In the services marketing, literature on the understanding of the contribution of the physical environment in service evaluations and consumer behaviour refers to research using the terms *atmospherics* and *servicescape* (Mari & Pogessi, 2013). The term *atmospherics* has been introduced

by Kotler (1973) as “the effort to design buying environments to produce in the buyer specific emotional effects that enhance his purchase probability” (p.50). According to Kotler, the atmosphere concerns aspects of the surroundings that people perceive with their sensory channels sight, sound, scent and touch. Bitner (1992) introduced the concept of *servicescape* to examine the effect of physical surroundings (ambient conditions, space/function, and signs, symbols and artefacts) on behaviour of consumers and employees by applying the SOR-model to the service industry. Several authors have elaborated on Bitner’s model (i.e. Lin, 2004; Liu & Jang, 2009; Pizam & Tasci, 2019; Rosenbaum & Massiah, 2011).

With use of the *SOR-model*, *atmospherics* and the *servicescape*, effects of various environmental characteristics such as design, colours, lighting, background music, temperature and scent, were found on service evaluation and behavioural variables in service settings such as hotels (Countryman & Jang, 2006; Dedeoğlu, Kucukergin, & Balıkçioğlu, 2015; Ladeira et al., 2013; Lin, 2016), restaurants (Han & Ryu, 2009; Jang & Namkung, 2009; Liu & Jang, 2009; Nguyen, 2006), and retail (Baker, Parasuraman, Grewal, & Voss, 2002; Chebat & Michon, 2003; Donovan & Rossiter, 1982; Milliman, 1982). Recently, Baker et al. (2020) provides an overview of the literature on service environment research.

In addition to literature on the influence of the environment in commercial settings, there is also literature on how the environmental impacts health and well-being. One stream of this literature focusses on healing environments, showing that the physical healthcare environment affects health and wellbeing of patients. Most well-known in this field are the stress reducing effects of real and artificial nature (i.e. Beukeboom, Langeveld, & Tanja-Dijkstra, 2012; Dijkstra, Pieterse & Pruyn, 2008; Ulrich et al., 1991). Other studies concentrate on the effects of the working environment on job satisfaction, well-being and productivity of employees (e.g. Khazanchi, Sprinkle, Masterson, & Tong, 2018; Newsham et al., 2009; Sun, Lian, & Lan, 2018; Vischer, 2011).

Outcome variables

In commercial service settings, the influence of the service environment has predominantly been studied in relation to sales and approach behaviours, such as the time spent in the environment (e.g. Turley & Milliman, 2000). In addition, effects on service evaluation measures have been studied, such as effects on the service experience (e.g. Ahola & Mugge, 2017; Countryman & Jang, 2009; Forrest, 2013; Kim & Moon, 2009; Ladeira et al., 2013), emotions (e.g. Jang & Namkung, 2009; Lin & Liang, 2011; Pullmann & Gross, 2004; Slåtten, Mehmetoglu, Svensson, & Sværi, 2009), satisfaction (e.g. Brunner-Sperdin et al., 2012; Han & Ryu, 2009; Lin & Liang, 2011; Moon, Yoon, & Han, 2017), and behavioural intentions and loyalty (e.g. Han & Ryu, 2009; Lin & Liang, 2011; Morin, Dubé, & Chebat, 2011; Pullmann & Gross, 2004; Slåtten et al. 2009).

Thus, effects of the physical service environment have been measured on a wide variety of dependent variables. However, in the field of the service marketing and environmental psychology the experience of hospitality appears no topic of research; the link between the physical environment and hospitality performance of a service organisation has not been studied yet. However, there are some elements of experience that, now that we know what people experience as hospitality, seem to have to do with hospitality. For example, curved shapes in the design of passenger ships make people feel safer compared to rectangular shapes (Ahola & Mugge, 2017). Feeling safe is related to the *comfort* factor of the experience of hospitality. Furthermore, warm and bright coloured restaurants are experienced as more inviting than cool and soft coloured restaurants (Tantanatewin & Inkarojrit, 2018). This is related to the *inviting* factor of the experience of hospitality. Also, the *empathy* dimension of SERVQUAL comes close to the concept of the experience of hospitality. SERVQUAL has been introduced by Parasuraman, Zeithaml & Berry (1988), containing the service quality dimensions: tangibles, reliability, responsiveness, assurance and empathy. The *empathy* dimension refers to the degree of care and attention provided to customers.

However, SERVQUAL has hardly been studied in relation to the physical environment. Reimer and Kuehn (2005) argued that the contribution of environmental factors has been underestimated. This is probably due to an inadequate description of SERVQUAL's *tangibles* dimensions, which is the dimension that refers, among other things, to the physical characteristics of the service environment. With a better operationalisation of this dimension, Reimer and Kuehn (2005) showed a higher contribution of the physical servicescape to the SERVQUAL dimensions. However, even after 2005, only a few studies have been conducted on the influence of the physical environment on the SERVQUAL dimensions (e.g. Ha & Jang, 2010; Kirillova & Chan, 2018), but without specifically addressing the empathy dimension.

Industry-specific equivalents of SERVQUAL, such as DINESERV (Knutson, Stevens, & Patton, 1996) and LODGSERV (Knutson, Stevens, Wullaert, & Patton, 1990) are based on the same five service quality dimensions. Some elements of the tangibles dimension, such as comfortable chairs (DINESERV and LOGDSERV) and the visual appeal of parking spaces, dining areas, menus (DINESERV), rooms and lobbies (LODGSERV), can be associated with the inviting factor and comfort factors of hospitality. However, the effect of these aspects on the hospitality experienced in hotels and restaurants has not been specifically studied.

To conclude, only the hospitality literature contains, albeit marginally, research into defining and measuring hospitality of service organisations. However, this research focusses on the hospitality performance of service employees; the physical environment is almost completely disregarded. On the other hand, in the field of environmental psychology and service marketing, there is a large amount of literature on the influence of physical service elements on various variables related to the evaluation of services. However, hospitality has so far not been a subject of study in these fields. Due to the number of studies that have shown an impact of environmental characteristics on the customer experience, the service environment is also likely to contribute to people's experience of

hospitality. In addition, the experts consulted in the Delphi study, described in Chapter 2, concluded that hospitality is primarily about the social interaction between host and guest, but they also recognised a facilitating role for the physical environment.

The second part of this dissertation will experimentally explore the influence of environmental service cues on consumers' experience of hospitality. But what do we know about how people process environmental stimuli into a corresponding feeling or impression?

Processing of environmental cues

At first, people process their environment in a holistic manner (Bitner, 1992; Brunner-Sperdin et al., 2012; Diđoiu & Căruntu, 2014; Heide et al. 2007; Lin, 2004; Kim & Moon, 2009; Mattila & Wirtz, 2001; Morin et al., 2007). As Morin et al. (2007, p.117) describe, 'the perceiver blends the diverse features of what he or she perceives and responds to into a coherent, unitary impression that combines the meaning of individual components and their interrelationships'.

An environment consists of a large number of stimuli. The processing of most of these stimuli takes place unconsciously (Dijksterhuis et al., 2005; Lin, 2004). Stimuli attract our attention when they stand out because they are, for example, unpleasant (a bad smell), or extremely high or low (e.g. sound level). To what extent we are aware of our environment depends on what requires our attention. During an intensive conversation, we are quite unaware of our surroundings, while when someone shows us around or when stimuli are unexpected, we pay more attention to environmental cues.

In service environments, consumers are usually in contact with the physical environment rather than with service employees (Kim & Moon, 2009). The consumer first perceives the environment before they experience the service. Based on the environmental cues, the consumer unconsciously forms a picture of the organisation, including expectations of products and services (Lin, 2004; Oliver, 1980, 1981). After all, we also initially judge a book by its cover and a perfume by the design of its bottle. Direct inference theory proposes that people intuitively derive meanings about concepts and relationships that are not explicit (e.g. Baker et al. 1994; Cherulnik, 1991). The halo-effect (Thorndike, 1920), which is the phenomenon that people transfer their feeling about one attribute to other, unrelated attributes, belong to this type of inferences. For example, a well-organised environment may lead to the experience that the entire service organisation is well-organised. As Berry et al. (2006, p.48) stated: "facility design, equipment, furnishing, displays, signs, colours, textures, sounds, and lighting, among other sensory clues, paint a visual picture of the service, communicating to customers without a single word being spoken". The question is whether these sensory characteristics of the service also give consumers an impression of hospitality. This has not been researched before.

How exactly does the perception of the environment lead to that 'picture' of the service? One way in which people process sensory information from the environment is by means of metaphors. From the field of cognitive science and linguistics we know that metaphors play an important role in human thought (Lakoff & Johnson, 1980; Zaltman & Coulter, 1995; Gibbs, 2009). A metaphor

is figurative language, referring to the representation of one thing in terms of another (Lakoff & Johnson, 1980; Zaltman & Coulter, 1995). Metaphors make connections and help us to interpret the world. Our senses in particular provide metaphors, such as 'a heated debate', 'a velvet voice', 'she thundered into the room', 'a painful lesson', 'dark thoughts', 'a spicy new outfit', and 'bittersweet memories'. All new information passes through our senses, so thoughts, ideas and concepts in our minds originate from stimuli that affect our bodies (Zaltman & Coulter, 1995). So, although people perceive the environment holistically, on a detailed level there are also one-to-one relationships between the elements we perceive with our senses and the experience these aspects evoke, among other things through metaphors. This type of information processing is addressed in the theory of embodied cognition, which serves as a basis for the experimental research of this thesis.

Embodied Cognition

The role of our body in cognition has already been studied for a long time (Asch, 1958; Schubert & Semin, 2009; Strack, Martin, & Stepper, 1988; Valins, 1966; Wells & Petty, 1980). Traditional cognitive scientists view the mind separately from the body. According to this view, the body and the mind are separate factors. So cognitive functions, concepts, representations are a matter of the mind, and the body is concerned with the physical perceptions of the environment (Dove, 2016; Spackman & Janchar, 2013). Lakoff and Johnson (1999) called this the view of the 'disembodied mind'.

However, there is growing consensus about the idea that our body is a significant factor in how people perceive, understand and act in the world. According to this view of the 'embodied mind', the mind and the body are connected; the mind influences the body, and the body influences the mind (Dijkstra, et al., 2014; Littlemore, 2019). The physical interactions with the environment influence how our mind perceives the environment. The other way around, our representations of the world influence how we perceive the world around us and how we act in it (Barsalou, 2008; Meier, Schnall, Schwarz, & Bargh, 2012).

One specific field within the embodied mind theory is the embodied metaphors. Language shows that we have many expressions that link concrete physical experiences to abstract ideas. Without metaphors, we would find it virtually impossible to reason and communicate about abstract concepts (Littlemore, 2019). Many expressions contain metaphors that refer to sensory perceptions. For example, we talk about 'feeling down', 'having a dark mood' or 'taking a hard decision'. We further use the expressions 'moving through time', 'looking back' on past events and 'looking forward' to future events. Likewise, we talk about 'weighty matters' and 'the gravity of a situation', and we describe people as 'a warm person', and relationships as 'close' or 'distant'.

Asch (1958) was perhaps the first social psychologist to emphasise the prevalence and use of these metaphors in language:

When we describe the workings of emotion, ideas, or trends of character, we almost invariably use terms that also denote properties and processes observable in the world of nature. Terms such as warm, hard, straight refer to properties of things and of persons. We say that a man thinks straight; that he faces a hard decision; that his feelings have cooled. (p.86)

The use of real sensations to express abstract concepts and feelings supports the idea that some abstract concepts are embodied through metaphor (Dijkstra et al., 2014; Littlemore, 2019; Meier et al., 2012). Embodied metaphors form a specific category within the embodied cognition approach and concern the idea that abstract mental concepts are given meaning by metaphorically connecting them with a physical experience (Murphy, 1996; Williams, Huang, & Bargh, 2009). For example, empirical research suggests that the physical perception of *weight* is metaphorically associated with *importance* (Ackerman, Nocera, & Bargh, 2010; Chandler, Reinhard, & Schwarz, 2012), the perception of *warmth* with *affection* (Lakoff & Johnson, 1980; Williams & Bargh, 2008a; Zwebner, Lee, & Goldenberg, 2014) and *cleanliness* with *morality* (Zhong & Liljenquist, 2006). Likewise, *vertical position* and *size* are associated with *power* (Dubois, Rucker, & Galinsky, 2012; Giessner & Schubert, 2008; Schubert, Waldzus, & Giessner, 2009), *up* with *more* (Hartmann, Grabherr, & Mast, 2012), *seeing* with *understanding*, and *motion* with *change* (Littlemore, 2019).

The attention for embodied cognition has recently grown enormously. Especially in the last 20 years, there has been an enormous increase in the interest in the study of embodied cognition, which resulted in a wealth of empirical studies showing evidence for embodied metaphors (Gibbs, 2009; Leitan & Shaffy, 2014; Littlemore, 2019). Various disciplines studied the embodiment of metaphors, from cognitive linguistics to cognitive and social psychology, neuroscience and philosophy. As a consequence, various types of research have been used to study the subject, including reaction-time studies, priming studies, eye-tracking studies, neurological studies, gesture studies and discourse analysis. Most evidence for embodied metaphors stems from cognitive linguistics, psychology and neuroscience. The following paragraphs give an impression of the research carried out within these three interrelated disciplines.

Linguistic evidence

Much research into embodied metaphors comes from cognitive linguistics (e.g. Gibbs, 2009; Littlemore, 2019). A metaphor that extensively has been studied is the *time is space* metaphor. We talk about events in the future as if they are in front of us, and events in the past as if they are behind us. We are 'looking ahead' to future events and 'looking back' to events in the past. Our body also participates in this. When people lean forwards, they more easily talk about the future than when they lean backwards (Lempert & Kinsbourne, 1982). It also works in the opposite direction: thinking about future events, people tend to lean or move forward while thinking about past events, they tend to lean or move backwards (Miles, Nind, & Macrae, 2010). Moreover, in a study using eye-tracking, eyes were directed more upwards and to the right when thinking about

the future then when thinking about the past (Hartman, Martarelli, Mast, & Stocker, 2014). These findings suggest that the *time is space* metaphor is not only expressed in language but is also embodied.

Other cognitive linguistic research showed that certain metaphorical idioms provoke body movements, which also suggests embodiment. Body movements that correspond to metaphorical sentences facilitate the understanding of these sentences; making or imagining a grasping movement led to a faster understanding of the concept of 'grasp the concept', and making pushing movements led to a faster understanding of the concept of 'push the argument' (Wilson & Gibbs, 2007). In addition, if we talk to people who don't see us, such as on the phone, people also use body movements, probably to support or structure what we say (Littlemore, 2019).

Another linguistic approach to embodiment is discourses analysis. Littlemore (2019) carried out an exploratory study by analysing the use of the adjectives *close*, *warm* and *hard* in the 'News on the Web' corpus. The results showed that the words differed in the degree to which people use them metaphorically. In 83% of the sentences that included the adjective *close*, the word *close* was used metaphorically. For *warmth* and *hard*, this was 53% and 91% respectively. Furthermore, this study showed that words might refer to one or more metaphors, and to simple or more complex metaphors. To illustrate, *warm* referred to the metaphor *warmth is affection* (e.g. 'Modi was a very warm and affective person'). *Close* referred to several metaphors such as *proximity is intimacy* (e.g. 'close friend'), *proximity is similarity* (e.g. 'their perspective may be too close to yours') and *seeing is knowing* (e.g. 'take a closer look'). Also, *hard* referred to several metaphors: *hardness is difficulty* (e.g. *it's hard to see how the economy will recover*), *softness is sympathy* (e.g. 'no hard feelings') or more complex metaphors in phrases such as *hard evidence* and *hard Brexit*.

A final example of a linguistic study that found indirect support for the embodied metaphor hypothesis is a study that also used corpus data, but in a different way. Akpınar and Berger (2015) examined data from 5 million books written over a period of 200 years and found that metaphoric expressions that are related to senses, such as a *cold person* or a *sharp increase*, are used more frequently over time in the language than their semantic equivalents which are not related to senses, such as an *unfriendly person* or *severe increase*. Akpınar and Berger additionally found that people are better in recalling sensory embodied metaphors than their semantic equivalents. The authors argue that sensory metaphors are more memorable because they relate more to the senses and have more associative cues.

Psychological evidence

Although cognitive linguistic studies and psychological studies are intertwined and overlap, there are differences in the emphasis and the methods used to investigate the role of embodied metaphors in cognition and behaviour. Psychological research on embodiment concern primarily experimental studies on how physical experiences unconsciously affect our perceptions, beliefs and behaviour. The studies suggest that postures or perceptions affect cognition and vice versa.

The studies performed by social and cognitive psychologists cover various types of dependent and independent variables. One topic concerns the effects of bodily postures on cognitive evaluation. Riskind and Gotay (1982) found that participants who sat in an upright position were more able to deal persistently with the tasks that required cognitive effort than those who sat in a slumped position. Wells and Petty (1980) conducted a series of studies in which participants were asked to either nod their head vertically or shake it horizontally while listening to messages. The head-nodding participants agreed more with the messages than those in the head-shaking group. Moreover, Winter and Matlock (2013) found that when people are asked to generate numbers, they generate higher numbers when they look up than when they look down.

A second topic covers the effects of physical perceptions on cognition. One type of research within this category concerns reaction time studies. For example, Zanolie et al. (2012) examined the embodiment of the metaphor *power is up*. They asked participants to indicate a word as representing a powerful or a powerless person (e.g. 'king' or 'servant'). Thereafter, the participants were required to identify a target which was presented either at the top or the bottom of the computer screen. Participants identified the target faster when their spatial position was congruent with the power of the preceding word (powerful words and target at the top or powerless words and target at the bottom) than when the spatial position was incongruent with the power of the word.

Likewise, Meier and Robinson (2004) studied the metaphor *good is up, bad is down*. Targets at the top of the screen were more rapidly recognised after participants made a positive evaluation (good is up), while recognition of targets at the bottom of the screen were faster after participants made a negative evaluation (bad is down). Furthermore, Meier, Robinson, Crawford and Ahlvers (2007) found that the brightness of a word influenced the speed with which participants could identify it as being associated with a positive or negative effect; words associated with positive affect presented in brighter hues were more readily identified as positive than when they were presented in darker hues, and vice versa. They also found an opposite effect: positive words were perceived as brighter than negative words. Thus, brightness not only activates metaphors, but the metaphors also affect the perception of brightness.

In addition to research into reaction times, other studies measure cognitive judgments that follow certain sensory sensations. To illustrate, regarding the metaphor *cleanliness-morality* it has been shown that after either performing or visualising a cleaning task, people's harshness of moral judgements increased (Zhong, Strejcek, & Sivanathan, 2010). Likewise, a pleasant smell (Lee & Schwarz, 2012) and bright light induced ethical behaviour (Chiou & Cheng, 2013). Thus, physical perception or action related to cleanliness resulted in an increase of morality.

There is also evidence for embodiment of the metaphor *weight is importance*. Ackerman et al. (2010) found that participants who held heavy clipboards rated job candidates as more important than participants who held lighter clipboards. Furthermore, Chandler et al. (2012) found that participants evaluated a book as more important when it weighed heavily in their hands, but only when they had some knowledge about the book. Those who had read a synopsis, had read the book

or knew the plot were influenced by its weight, whereas those unfamiliar with the book were not. Thus, the information about the mental counterpart of the metaphor, in this case the contents of the book that can give people an idea of its importance, was necessary for the effect to occur. Schneider, Rutjens, Jostmann and Lakens (2011) showed that the direction of the effect can also be reversed. In their study, participants who were told that a book contained important information estimated the weight of the book as significantly higher than participants who were told that the book contained less important information.

The metaphor *warmth is affection* also seems to have an embodied basis. People who held a warm, as opposed to cold, cup of coffee attributed warmer personality traits to another person (Williams & Bargh, 2008a). Also, IJzerman and Semin (2009) showed that subjects who were temporarily holding a warm beverage perceived a person in mind as mentally closer to them than did those who were temporarily holding a cold beverage. Here, too, the effect also works the other way around. Zhong and Leornadelli (2008) showed that social exclusion literally feels cold. They showed that people who had experienced social exclusion rated the room temperature as lower than participants who had experienced social inclusion. They also found that social exclusion, compared to social inclusion, led to a greater desire for warm food and drinks.

Thirdly, studies examined the effects of physical perceptions on intended or actual behaviour. For example, Williams and Bargh (2008a) carried out another study in which participants were asked to evaluate a warm or a cold therapeutic pad. Participants who had evaluated the warm pad were more likely to choose a gift for a friend, while those who had evaluated the cold pad were more likely to keep the gift for themselves. Furthermore, Miyajima and Meng (2017) demonstrated that female Japanese participants who touched a warm (vs. cold) cup showed more positive attitudes and helping behaviour toward a Chinese individual. However, this result was not found for male participants, suggesting individual differences regarding embodied effects. Furthermore, Belkin and Kouchaki (2017) investigated the effect of hot versus normal ambient temperature on helping behaviour of store employees. They found in both field and laboratory experiments that heat increases fatigue, which in turn reduces individual assistance behaviour. Additionally, Ray, Lin and Yang (2017) demonstrated that cold (vs. warm) temperature cues resulted in greater intentions to donate to charities. This effect was mediated by the need for social connection. Moreover, this effect holds when actual donation behaviour was measured, instead of donation intentions. In addition, some studies suggest that chronic loneliness is associated with an increased tendency to take warm baths or showers (Bargh & Shalev, 2012; Shalev & Bargh, 2015). However, Donnellan, Lucas and Cesario (2015) failed to reproduce this effect.

To summarise, psychological experiments provide evidence for the embodiment of (some) conceptual metaphors. There seems to be a direct link between specific physical sensations and their mental counterpart. Experimental research suggests that this relationship works both ways: perception influences cognition, and cognition influences perception.

Neurological evidence

Next to the considerable evidence from studies from linguistics and social and cognitive psychology, there is also neurological support for the idea that metaphors are embodied. Most of the neurological evidence is based on studies using Magnetic Resonance Imaging (MRI), which measures neural activity using a magnetic field and radio waves. There is evidence that sensory and motor areas in the brain are activated not only during sensory perception and physical action, but also when people think and talk about the metaphorical meaning of those actions and sensations. For example, Inagaki and Eisenberger (2013) measured brain activity using MRI to determine a possible relationship between physical and social warmth. They found that people felt physically warmer when reading positive messages from good friends and family (versus neutral messages). People also felt more connected to others when holding a warm pillow than when holding a room temperature ball. Neurological evidence supported the role of the embodied metaphor in these effects; They found overlapping neural activation in the mid insula and ventral striatum, suggesting a common neural mechanism underlying physical and social warmth.

Also, Lacey, Stilla and Sathian (2012) support the idea that comprehension of metaphors is perceptually grounded. They found that reading figurative sentences with textual metaphors (such as 'Sam had a rough day') activated not only verbal areas in the brain but also the texture-selective somatosensory cortex in the parietal operculum. In contrast, reading non-metaphorical sentences (such as 'Sam had a bad day') did not show activation of sensory-motor areas in the brain.

Likewise, Desai, Binder, Conant, Mano, and Seidenberg (2011), compared neural responses with sentences involving literal action (the daughter grasped the flowers), sentences involving metaphoric action (the public grasped the idea), and abstract sentences (the public understood the idea) to examine the engagement of sensory-motor areas during their comprehension. MRI results showed that literal and metaphorical sentences, but not abstract sentences, activated the left anterior inferior parietal lobe, an area that is involved in action planning. This supports the idea that the understanding of metaphorical actions activates the same brain areas as the understanding of literal actions.

Although there is much evidence for the embodiment of concepts, there is also criticism of the conclusions drawn in favour of the embodied cognition hypothesis. The next section briefly summarises the critique on existing evidence of embodiment of cognition.

Criticism of embodied cognition research

Embodied cognition has offered an alternative for the traditional view that cognition is functionally independent of perception and action (Dove, 2016). The relatively new research domain has thus far mainly focused on the first step that is involved in any new research program, descriptive research on demonstrating that embodied cognition is worth studying (Meier et al., 2012). Although there is consensus on the relevance of studying embodied cognition (Dijkstra et al., 2014; Littlemore, 2019), there is also criticism of the evidence for the embodied cognition hypothesis.

Firstly, studies examining the embodiment of abstract concepts concern concrete and highly imaginable metaphorical concepts, such as *warmth*, *distance*, *motion* and *weight*. However, abstract concepts, such as *numbers*, *democracy*, *justice*, *truth* and *patience*, which do not refer to sensorimotor aspects, are a challenge to be explained by embodied cognition (Dove, 2016; Dijkstra et al., 2014; Galetzka, 2017; Mahon & Caramazza, 2008). Furthermore, it is proposed that the grounding of metaphors depend on the level of abstractness of the concepts, whereby the higher the abstractness, the less involvement of the sensory and motor systems is suggested (Desai et al., 2011; Dijkstra et al., 2014; Dove, 2016; Spackman & Yanchar, 2013). This indicates that concepts can be embodied to a certain extent or that embodiment only applies to certain types of concepts, rather than that abstract concepts are necessarily entirely embodied.

Secondly, in recent years several replication studies failed to show previously found effects. For example, Lynott et al. (2014) replicated the study performed by Williams and Bargh (2008a) on the effect of a warm therapeutic pad on prosocial behaviour and failed to reproduce the findings, despite the use of sample sizes of hundreds of participants at multiple test sites. Lynott, Corker, Connel, and O'Brien (2017) also did not find evidence in another replication of this study. Chabris et al. (2019) recently published replication studies of both studies of Williams and Bargh (2008a), both with the hot drink and with the therapeutic pad. In neither of the studies, they found evidence that physical warmth leads to interpersonal warmth. Furthermore, also the findings of the weight-importance relationship were not reproduced (Beek et al., 2017).

In the psychological literature, discussions on whether or not there is an embodied relationship between physical and mental warmth mainly concern methodological issues in the experimental research, such as sample sizes, type and order of questions and potential confounding variables. For example, the effect of the warm therapeutic pad observed by Williams and Bargh may have been partly due to unconscious cues given by the researcher, who interacted directly with participants as they received their hot or cold packs (Lynott et al., 2014). Lynott et al. (2014) made sure that in their replication study, the research assistant was deliberately unaware of the objectives of the research.

Thirdly, although activation of sensory and motor areas in the brain is involved in conceptual processing, patients with sensory or motor disorders do not necessarily suffer from conceptual functioning, suggesting that processes other than embodied cognition are also involved. (Johnson-Frey, 2004; Mahon & Caramazza, 2008). Furthermore, Mahon and Caramazza (2008) argue that the neuropsychological evidence for the embodiment of abstract concepts show that sensory and motor information plays a role in representing concepts. However, it does not resolve the issue of *how* concepts of concrete objects and actions are represented in the brain. Activation of both sensory and motor areas and brain areas involved in metaphorical thinking could also be the consequence of spreading activation initiated by amodal conceptual processing using associative networks (Dove, 2016; Mahon & Caramazza, 2008). According to the Associative Network Theory, nodes are over time connected to form a network of associations. By stimulating a node, associated nodes are also automatically activated (Raaijmakers & Shiffrin, 1981).

Fourthly, a problem with the studies on embodiment is that the majority of the studies have been performed in a controlled laboratory setting, which lacks the context of the real world (Littlemore, 2019). Although these studies prove that conceptual metaphors can be strongly embodied, it is yet not known whether this also applies in real-life situations.

An increasing number of observers from multiple disciplines suggest that it is now time to focus more on explanatory research and developing theories involving *when* and *how* embodiment occurs (Dijkstra et al., 2014; Landau, Meier, & Keefer, 2010; Meier et al. 2012; Schubert & Semin, 2009). For example, variations in context and human experience can influence the way people understand the world through embodied metaphors (Littlemore, 2019). Dijkstra et al. (2014, p.2) state “rather than making general predictions regarding the involvement of sensorimotor systems in cognitive processes that back all findings, the hypotheses should be more specific, and the explanation should focus more on underlying mechanisms of embodiment”. Furthermore, we should focus more on what embodied cognition can and cannot explain. After all, there is no theory that can explain all aspects of complex phenomena such as metaphorical language and thought (Gibbs, 2009). Mahon and Caramazza (2008) emphasize that there is no shortage on data, but that collecting more of the same data has no added value. Instead they argue for new embodied cognition hypotheses in order to bring the field further.

In recent years, the idea has emerged that the embodiment of concepts, including conceptual metaphors, is not as clear-cut as is often suggested. There may be different variants of embodied cognition along a continuum ranging from strongly to weakly embodied (Meteyard, Cuadrado, Bahrimi, & Vigliocco, 2012). Another possibility is a hybrid approach, with both the embodied and disembodied mechanisms (e.g., Barsalou, 2016; Dove, 2016). Mahon and Caramazza (2008) propose that sensory and motor information contribute to conceptual processing, but not totally accounts for it. In their 'grounding by interaction framework' sensory and motor information "colours conceptual processing, enriches it, and provides it with a relational context" (Mahon & Caramazza, 2008, p.68). The removal of this process would result in an impoverished concept.

In this dissertation, the role of embodied cognition in the experience of hospitality in service environments is explored. To our knowledge, this hasn't been investigated yet. We will look at the role of different metaphors in people's experience of hospitality. Some of these have been studied before, such as *warmth*, while others barely received scientific attention.

Embodied metaphors and hospitality

The literature review on the embodiment of metaphors described above suggests that physical warmth induces mental warmth, physical weight induces mental weight (importance), physical cleanliness induces mental cleanliness (morality). Can physical sensations also trigger conceptual metaphors related to hospitality? As far as we know the theory of embodied cognition has not yet been studied in the context of hospitality.

Chapter 3 showed that the experience of hospitality in service environments comprises three factors: *inviting*, *care* and *comfort*. *Inviting* refers to the experience of openness, invitingness and freedom.

Care is about experiencing empathy, servitude and acknowledgement. *Comfort* refers to feeling at ease, feeling relaxed and feeling comfortable.

Different embodied metaphors may be related to these three factors of the experience of hospitality. The most logical metaphor in relation to hospitality is the extensively studied metaphor *warmth*, which is likely to be linked to the *care* factor. Descriptions of hospitality often refer to warmth in the figurative sense, for example by phrases such as ‘warm and friendly’ (Brotherton, 2005), ‘warm services’ (Brotherton & Wood, 2008) and ‘a warm atmosphere’ (e.g. Ariffin & Maghzi, 2012; Tasci & Semrad, 2016; Sim, Mak, & Jones, 2006). These phrases seem to be principally related to the care factor of the experience of hospitality.

The *comfort* factor may be related to the conceptual metaphor *comfort*. Although comfort as an embodied metaphor seems logical, research into the embodiment of the concept of comfort has, as far as is known, not yet been reported in the literature. Nevertheless, there is some evidence that people experience comfort both physically and mentally. Slater (1985) for example distinguished between a physical and a psychological component of comfort. Also, da Silva Menegon, Vincenzi, Andrade, Barbetta, Merino, & Vink (2017) distinguish between physical and psychological (dis)comfort. Based on embodied cognition theory, the concept of comfort is expected to play a role in the *comfort* factor of the experience of hospitality.

The *inviting* factor of the experience of hospitality has to do with attracting people to come in, the feeling that they are welcome. A metaphor that could be related to this is *ease of access*. Physical ease of access of a building may induce feelings of mental approachability associated with the organisation that is housed in that building. Research into the embodied relationship between physical and mental accessibility has hitherto been unexplored.

Outline experimental studies

The following chapters of this dissertation contain the experimental research on the effects of particular physical sensation in the service environment on the experience of hospitality. It both introduces embodied cognition research into the field of hospitality and service research and elaborates on the stream of literature on environmental psychology and embodied cognition.

The experimental research aims to:

- show whether environmental service cues in a service environment may contribute to the experience of hospitality, and in particular to its factors *inviting*, *care* and *comfort*
- show to what extent the effects of these service cues on the experience of hospitality can be explained by embodied cognition theory.

For each of the three experiential factors of hospitality (*inviting*, *care* and *comfort*) an experimental study has been performed. To stay close to the practice of hospitality, the experiments were carried out as much as possible in real-life settings.

In chapter 5 we start with the role of the metaphor *warmth* in the experience of *care*. After all, warmth is the embodied metaphor that has received the most scientific attention. Does physical warmth trigger the metaphor of mental warmth and in turn affect people's experience of hospitality by the *care* experienced at the organisation? The effects of warm (or cold) drinks and heated (or non-heated) cushions on the experience of hospitality in a theatre foyer are described.

Chapter 6 focusses on the metaphor *comfort* and its role in the *comfort* factor of hospitality. Does *physical comfort* activate the metaphor *mental comfort* and in turn affect people's experience of hospitality by the *comfort* experienced at the organisation? A study is presented on the effects of (un)comfortable seats and (un)comfortable ambient sound on the experience of hospitality in a restaurant of a large furniture chain.

Chapter 7 concentrates on the metaphor *ease of access* and its role in the experience of *inviting*. Does *physical ease of access* trigger the metaphor of *mental ease of access* and in turn affect people's experience of hospitality by how *inviting* the organisation is experienced? The findings of a pilot study and a follow-up experiment using Virtual Reality are presented. The pilot study took place in a university building for graduation ceremonies. We explored the effects of visual transparency of the entrance and the turning speed of the entrance door on the impression of the experience of hospitality. The follow-up experiment examined the effects of visual transparency of the entrance and the door opening speed of automatic entrance doors on the experienced hospitality in a virtual environment that was framed as either a hotel or a dental practise.

In each study two environmental factors served as independent variables, which measured different levels of the physical component of the constructs *warmth*, *comfort* and *approachability*. The factors of the EH-Scale developed in phase one of the project served as dependent variables. Because it was expected that embodied cognition is the underlying mechanism of the effects, it was examined whether the mental part of the construct (*mental warmth*, *mental comfort* and *mental ease of access*) mediated the effects of the *physical warmth*, *comfort* and *ease of access* on the experience of hospitality. Furthermore, because the results of the studies described in chapter 3 suggested that individual characteristics may affect the influence of the environmental cues on the experience of hospitality in each experiment an individual characteristic was measured to explore its moderating role.

in brief

Chapter 4 introduced the experimental studies in this second part of the research. The chapter outlined the theoretical approach by explaining the focus on environmental service cues and introducing the theory of embodied cognition. According to the embodied cognition theory, one's body and mind are connected. According to this view, a particular physical sensation will activate a corresponding mental metaphor. For example, if one perceives weight, one will have an association of quality or something important. When one perceives physical warmth, one will mentally associate this with a warm person or prosocial behaviour.

Chapters 5 to 7 examine the impact of specific environmental service cues on the experience of hospitality and the involvement of embodied cognition in these effects. Each chapter focusses on a factor of the experience of hospitality, care, comfort or inviting.

In Chapter 5, we start with exploring the role of the embodied concept warmth in the experience of care. Warmth is one of the embodied concepts that is most extensively studied. Moreover, hospitality literature shows that warmth is the most commonly mentioned sensory word when describing hospitality. Therefore, warmth is probably closely related to the care factor of the experience of hospitality.

5. care: the role of hot drinks and warm furniture⁷

⁷ This Chapter is a modified version of the manuscript Pijls, R., Galetzka, M., Groen, B.H., & Pruyn, A.T.H. Hospitality in a theatre: The role of physical warmth. *Submitted for publication*.

Introduction

Hospitality is an essential part of service quality these days. In the field of hospitality management, more and more literature is being published on the subject. This literature examines hospitality mainly from the host's point of view, focusing on how service organisations can organise their services in such a way that they increase their hospitality performance. However, don't we first need to know what consumers experience as hospitality before we can increase the hospitality performance of organisations? Little attention has been paid to the viewpoint of the consumer: the experience of hospitality and the psychological mechanisms involved. The research presented in this paper is part of a project on understanding the influence of environmental stimuli on the experience of hospitality in service-providing environments. This paper specifically focusses on the influence of perceptions of warm environmental objects on the hospitality experienced in a theatre foyer.

Although service organisations are paying increasingly attention to hospitality, they lack tools to improve their hospitality performance. Understanding of the concept of hospitality is still in its infancy (Brotherton & Wood, 2008; Lynch et al. 2011; Tasci & Semrad, 2016). A few studies delved into the meaning of hospitality from a consumer's perspective, specifically focusing on service staff behaviour in the hospitality industry (Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016). Pijls, Groen, Galetzka, and Pruyn (2017) took a broader perspective by concentrating on services in general and incorporating the whole servicescape, including the physical service environment. Their research resulted in an instrument that measures hospitality and distinguishes three factors of the experience of hospitality within service environments: *inviting*, *care*, and *comfort*. *Inviting* refers to the experience of openness, freedom and feeling invited. *Care* refers to aspects such as experiencing involvement, effort, interest, relief, importance and support. *Comfort* is about feeling at ease, relaxed and comfortable.

In addition to existing knowledge on the behaviour of service staff, how can service organisations communicate hospitality by means of their physical environment? And more specifically, which sensory stimuli increase the hospitality experienced by service consumers?

Hospitality and warmth

Descriptions of hospitality often contain words that refer to sensory stimuli. Literature shows that *warmth* is one of the most frequently mentioned words when describing hospitality. Hospitality is associated with a warm welcome (Ariffin & Maghzi, 2012; Tasci & Semrad, 2016), warmth and friendliness (Brotherton, 2005), warm services (Brotherton & Wood, 2008) and a warm ambience (Sim, Mak, & Jones, 2006). Additionally, Tasci and Semrad (2016) distinguish a hospitality dimension which they call *heart-warming*, which includes polite, welcoming, friendly, courteous, helpful, respectful and kind. Ariffin and Maghzi (2012) furthermore state that "hospitality is not only about greeting and helping guests but the "warmth" of the greeting and sincerity and the "all

out” nature of the help offered” (Ariffin & Maghzi, 2012, p.194). In addition, Burgess (1982, p.50) describes hospitality as a “social relationship fostered by the warm, friendly, welcoming, courteous, open, generous behaviour of the host”.

As can be seen in the examples above, warmth in relation to hospitality is used in the psychological sense and seems principally related to the *care* factor of the experience of hospitality as described by Pijls et al. (2017). Literature outside the field of hospitality also provides support for the link between psychological or mental warmth and *care*-related aspects. Ackerman, Nocera and Bargh (2010) for example describe mental warmth in terms of caring, and an emotionally warm person is generous, friendly, helpful and trustworthy (Asch, 1946; Fiske, Cuddy, & Glick, 2007; Williams & Bargh, 2008a).

But is this abstract concept of *mental warmth* linked to physical sensations of warmth? There is evidence for this connection. In 1958, Asch stated that most abstract mental concepts are metaphorically based on concrete physical experiences. Murphy (1996) and Williams, Huang, and Bargh (2009) also argued that cognitive concepts are fundamentally grounded in the physical context and perceptual processes. According to this theory of embodied cognition, abstract mental concepts are given meaning by metaphorically connecting them with a physical experience. For example, a number of studies provide evidence that the physical perception of weight (heaviness as opposed to lightness) is metaphorically associated with concepts of seriousness and importance (Ackerman et al. 2010; Chandler et al., 2012), and the experience of physical space impacts the experienced psychological space or freedom (Meyers-Levy & Zhu, 2007; Okken, Van Rompay, & Pruyn, 2012). Returning to warmth, it has also been suggested that the perception of physical warmth is metaphorically associated with mental warmth (Bargh & Shalev, 2012; Fenko, Schifferstein, & Hekkert, 2010; Lakoff & Johnson, 1980; Williams & Bargh, 2008a; Zwebner, Lee, & Goldenberg, 2014).

However, it should be noted that in recent years replication studies have been published that failed to reproduce the findings of for instance the weight-importance relationship (Beek et al., 2017) and the physical warmth-psychological warmth relationship (Donnellan, Lucas, & Cesario, 2015; Lynott et al., 2014; Lynott, Corker, Connell, & O’Brien, 2017). Notwithstanding, assuming that embodied concepts exist, concrete physical perceptions may help to define service elements that contribute to a hospitable experience.

The present research elaborates on the embodied concept of warmth. It examines whether the embodied perception of warm environmental objects enhances people’s experience of the *care*-factor of hospitality by activating the mental representation of warmth.

The embodied concept of warmth

Mental warmth is an example of an abstract metaphor grounded in a concrete physical experience, in this case in the sensation of physical warmth (Williams & Bargh, 2008a; Lakoff & Johnson,

1980). Lakoff and Johnson (1980) argue that such a specific connection between body and mind stems from early moments in life.

In childhood, people get to know and experience the concept of affection (mental warmth) through the physical experience of physical warmth. When crying babies are comforted, they simultaneously experience both physical and mental warmth, because of the affection in the action of being held and caressed by their parents. Fay and Maner (2012) indicate that an important element of the experience of physical warmth is that warmth is spatially limited. Heat can only be perceived when the source of the heat is close. They state “for example, human bodies are warm, but one must be close to a body to feel its warmth” (Fay & Maner; 2012, p.1369). This may be the reason that physical warmth may evoke abstract concepts such as social closeness or intimacy (Fay & Maner, 2012; IJzerman, Karremans, Thomsen, & Schubert, 2013; Williams, Huang, & Bargh, 2009).

Studies on the embodied relationship between physical and mental warmth can be divided into two main categories: studies examining effects of short-term exposure to warmth (such as warm drinks and therapeutic pads) and studies examining the effects of warmth stimuli with long-term exposure (such as ambient temperature). These two types of warmth stimuli are different bodily experiences, and therefore should be distinguished theoretically (e.g., IJzerman et al., 2012; Lynott et al. 2017).

Concerning the first type of stimuli, the findings suggest a positive relationship between physical warmth and mental warmth, the so called 'warmer is better' effects (Lynott et al., 2017). The most well-known experiment is that of Williams and Bargh (2008a), who found that subjects who briefly held a warm cup of coffee were more likely to perceive someone else as mentally 'warm' (i.e. friendly, helpful and trustworthy) compared to subjects who held a cup of iced coffee. IJzerman and Semin (2009) additionally showed that subjects who were temporarily holding a hot beverage perceived a person in mind as mentally closer to them than did those who were temporarily holding a cold beverage. Furthermore, Miyajima and Meng (2017) showed that touching a warm cup, as opposed to a cold cup, leads to helping behaviour, but only for women.

Besides effects of holding hot versus cold drinks, also effects of briefly holding (therapeutic) pads have been found. Williams and Bargh (2008a) showed that people who briefly held a warm (versus cold) therapeutic pad were more likely to choose a gift for friends instead of for themselves. Furthermore, evidence was found that briefly holding a warm pack led to higher connection with others (Inagaki & Eisenberg, 2013) and increased interpersonal trust in computer games (Kang, Williams, Clark, Gray, & Bargh, 2010; Storey & Workman, 2013). Additionally, Bargh and Shalev (2012) showed that, at the other end of the continuum, physical coldness leads to mental coldness. They found that briefly holding a cold pad, as opposed to a warm or neutral pad, increased feelings of loneliness.

In replication studies, however, some effects were questioned. Despite the use of sample sizes of hundreds of participants at multiple test sites, Lynott et al (2014) failed to reproduce the findings of the Williams and Bargh (2008a) study with the therapeutic pad. Lynott et al. (2017) also found no evidence for this effect. Chabris et al. (2019) recently published an article presenting replications

of both experiments of Williams and Bargh (2008a). In neither of the studies they found evidence that physical warmth leads to interpersonal warmth. Nevertheless, all the positive evidence for effects of momentary physical contact with warmth belongs to the category “warmer is better”. Regarding the second type of stimuli, the long-term exposure to warmth, there are different types of effects, which seem to be related to whether the temperature perception is comfortable or not. First of all, the literature shows, just as for the effects of short-term exposure to warmth, ‘warmer is better’ effects for comfortable warmth perceptions. Prolonged exposure to physical warmth leads to mental warmth, such as interpersonal warmth (Fetterman, Wilkowski, & Robinson, 2017), social affiliation (Fay & Maner, 2012) and social proximity (Huang, Zhang, Hui, & Wyer, 2013; IJzerman & Semin, 2012; Schilder, IJzerman, & Denissen, 2014). To illustrate, IJzerman and Semin (2009) found that participants in a warm room (22-24°C) felt significantly closer to the experimenter than participants in a cold room (15-18 °C). In a replication study these findings were confirmed (Schilder, IJzerman, & Denissen, 2014). Huang et al. (2013) showed a positive effect of ambient temperature, via perceptions of social closeness, on conformity to others’ opinions. Furthermore, Lynott et al. (2017) investigated the influence of outside ambient temperatures in one of their studies and found a slightly positive relationship with prosocial behaviour. Additionally, Fay and Maner (2012) showed that a chair with a heated pad leads to higher levels of social affiliative motivation, increasing people's desire for social bonding. However, this effect was only found for people low in avoidance attachment (feeling comfortable with intimacy) and people high in anxiety attachment, with the explanation that anxious people are especially motivated to maintain and increase intimacy with others.

Secondly, while comfortable warmth shows ‘warmer is better’ effects, uncomfortable heat shows ‘warmer is worse’ effects. For example, Belkin and Kouchaki (2017) found that hot outdoor temperatures (up to 34°C), as opposed to normal temperatures, made prosocial behaviour less likely. Heat led to fatigue, which reduced prosocial behaviour. Outside the embodiment literature, epidemiological research has also shown that under uncomfortable heat conditions people’s discomfort may lead to negative societal behaviour such as hostility and aggression (see Lynott et al. (2017) for an overview of the literature on this topic).

Thirdly, for uncomfortable physical coldness, a different embodied mechanism seems to be involved. The literature suggests that in addition to prosocial behaviour stimulated by comfortable physical warmth, physical coldness can also lead to prosocial behaviour (Hong & Sun, 2012; Kolb, Gockel, & Werth, 2012; Lee, Rotman, & Perkins, 2013; Rai, Lin, & Yang, 2017). An explanation for this seemingly opposite effect is that physical coldness induces the desire for mental warmth and the corresponding behaviour. People are inclined to compensate for the physical coldness by seeking mental warmth. To illustrate, Rai et al. (2017) showed that low ambient temperature (15-17°C), as opposed to high ambient temperature (22-24°C), leads to a need for social connection, which in turn leads to a higher intention to donate money and to an increase in the amount of money actually donated. In another study, they found that watching pictures of people suffering from cold leads to a need for social connection, which in turn increases the likelihood of donating

money to charities. Furthermore, Hong and Sun (2012) additionally showed that physical coldness leads to an increased liking of romance movies for people who associate romance movies with psychological warmth.

Compensating for physical coldness also seems to work the other way around, with mental coldness producing a desire for physical warmth. It was found, for example, that social exclusion (mental coldness) leads to a desire for warm food and hot drinks (Zhong & Leonardelli, 2008). Furthermore, chronic loneliness is associated with an increased tendency to take warm baths or showers (Bargh & Shalev, 2012; Shalev & Bargh, 2015). However, Donnellan et al. (2015) failed to reproduce this effect.

Overall, the literature on the embodiment of warmth suggests a relationship between physical and mental warmth, distinguishing between effects of short-term contact with warmth and prolonged contact with warmth. When confronted with prolonged warmth, the effects seem to depend on the comfort of the temperature sensation. Table 5.1 provides an overview of the effects found in the various studies on the embodiment of warmth.

However, there is also criticism on the evidence in favour of the embodied cognition hypotheses. Discussions on whether or not there is an embodied relationship between physical and mental warmth mainly concern methodological issues in the experimental research, such as sample sizes, type and order of questions and potential confounding variables. Nevertheless, some studies examined the phenomenon using different types of methods. For example, Fetterman, et al. (2017) performed two within-subjects diary studies in which people on a daily basis reported their felt temperature and their interpersonal warmth. On days when participants felt physically warmer, they perceived themselves to be interpersonally warmer and more agreeable, irrespective of the outdoor temperature. Inagaki and Eisenberger (2013) additionally measured brain activity in an MRI to ascertain a possible relationship between physical and social warmth. Physical and mental warmth showed overlapping neural mechanisms in the middle insula and ventral striatum, suggesting a common neural mechanism underlying physical and social warmth.

Thus, although evidence should be interpreted with caution, there is support for the assumption that physical sensations of warmth generate feelings of mental warmth, measured by related concepts such as a warm personality, social closeness, emotional closeness and pro-social behaviour. The current research builds on the studies examining the embodied relationship between physical and mental warmth by exploring the effect of physical perceptions of warmth on the experience of hospitality in a real-life setting of a theatre, thereby focusing on effects of comfortable sensations of warmth.

Table 5.1. Overview of studies examining physical warmth as independent variable, for warmth stimuli of brief and of prolonged exposure. AT = ambient temperature, L = laboratory study, F = field study.

Exposure	Type of stimulus	Effect
Brief exposure	Hot drink	Briefly holding a cup of coffee, as opposed to iced coffee, leads to interpersonal warmth. However, the replication study showed no effect.
	Hot drink	Warm drinks, as opposed to cold drinks, lead to social proximity
	Hot cup	Touching a warm cup leads to helping behavior, but only for females
	Warm pad	Briefly holding a warm pad, as opposed to a cold pad, leads to prosocial behavior (gift for someone else instead of for themselves). However, both replication studies showed no effect
	Warm pad	Briefly holding warm pad, as opposed to a cold pad, leads to interpersonal trust, additional neurological support
	Cold Pad	Briefly holding a cold pad, as opposed to a warm or neutral pad), increased feelings of loneliness
	Warm pad	Briefly holding warm pad, as opposed to a neutral ball, leads to higher connection with others, additional neurological evidence
Prolonged exposure	Ambient temperature	High AT (22-24°C), as opposed to low AT (15-18°C), leads to more social proximity
	Ambient temperature	High AT (24-25°C), as opposed to low AT (16-17°C) leads to perceptions of social closeness, which leads to conformity to others' opinions
	Ambient temperature	Higher outside AT (max. 24°C) leads to more prosocial behavior (weak effect)
	Ambient temperature	Low AT (mean 20.22°C), compared to high AT (mean 25.96°C) lead to more helping behavior and giving of higher discounts to customers
	Ambient temperature	Social exclusion leads to lower perceived AT and to a desire for warm food and drinks

Publications

Williams & Bargh (2008)^L; replication study Chabris, Heck, Mandart, Benjamin, & Simons (2019)^F

IJzerman & Semin (2009)^L

Miyajima & Meng (2017)^L

Williams & Bargh (2008)^L; replication studies Lynott, Corker, Connell, & O'Brien (2014)^L; Chabris, Heck, Mandart, Benjamin, & Simons (2019)^F

Kang, Williams, Clark, Gray, & Bargh (2010)^L; Storey & Workman (2013)^L

Bargh & Shalev (2012)^L

Inagaki & Eisenberger (2013)^L

IJzerman & Semin (2009)^L; replication study Schilder, Ilzerman, & Denissen (2014)^L

Huang, Zhang, Hui, & Wyer Jr (2013)^L

Lynott et al. (2017)^L

Kolb, Gockel, & Werth (2012)^L

Zhong & Leornadelli (2008)^L

Ambient temperature	Eating alone leads to lower perceived AT than eating with partner
Ambient temperature & pictures of people suffering from heat/cold	Study 1: with hot outside temperatures (up to 34°C), as opposed to normal temperatures, prosocial behavior is less likely. Study 2: heat leads to fatigue, which decreases prosocial behavior.
Ambient temperature & pictures of people suffering from heat/cold	Study 1: low AT (15-17°C), as opposed to high AT (22-24°C), leads to a need for social connection, which in turn leads to 1) a higher intention to donate money and to 2) an increased the amount of money. Study 2: watching pictures of people suffering from cold lead to a need for social connection, which in turn increases the likelihood of donating money to charities.
Physical warmth (body)	On days when participants felt physically warmer, they perceived themselves to be interpersonally warmer
Physical warmth (body)	Reading positive messages about close friends/family leads to feeling physically warmer
Physical coldness (body)	Physical coldness leads to the desire for a social consumption setting, whereas physical warmth leads to a desire for eating alone
Physical coldness (body)	Physical coldness leads to liking of and willingness to pay for romantic movies (when associated with psychological warmth)
Warm pad in a chair	A chair with a heat pad, as opposed to a non-heated pad, leads to higher levels of social affiliative motivation, but only found for people low in avoidance attachment and people high in anxiety attachment.
Tendency to take warm baths & showers	Loneliness (social coldness) leads to the tendency to take warm baths or showers. However, the replication study showed no effect.

Lee, Rotman, & Perkins (2013)^F

Belkin and Kouchaki (2017)^{L+F}

Rai, Lin and Yang (2017)^L

Fetterman, Wilkowski & Robinson (2017)^L

Inagaki & Eisenberger (2013)^L

Lee, Rotman, & Perkins (2013)^L

Hong & Sun (2012)^L

Fay & Maner (2012)^L

Bargh & Shalev (2012); Shalev & Bargh (2015)^L, replication study Donnellan,
Lucas, & Cesario (2014)^L

Aim of the study

The present study explores the role of the embodied concept of warmth; based on people's associations and descriptions of hospitality, this seems the embodied concept that is most closely linked to the experience of hospitality. The study focuses on the effect of perceptions of physical warmth on the experience of hospitality as perceived in a theatre foyer.

Because it is unknown what type of warmth stimulus results in the experience of hospitality, it was also investigated whether it matters how physical warmth is primed. Elaborating on Lynott et al. (2017), who also examined effects of two types of heat sources in one experiment, the effect of physical warmth is explored by two types of environmental stimuli: one providing momentary physical contact and one providing long-term physical contact. Firstly, elaborating on Williams and Bargh (2008a) and IJzerman and Semin (2009), the effect of briefly holding hot versus cold drinks is examined. Secondly, for the heat source providing continuous physical contact it seemed most obvious to manipulate the ambient temperature. However, since it is difficult to control the ambient temperature in a field study, inspired by Fay and Maner (2012) and Fenko et al. (2010), the effect of cold versus warm furniture was studied instead.

Based on the studies by Williams and Bargh (2008a) and IJzerman and Semin (2009) on the effect of holding a cold versus a hot drink, it is expected that touching and drinking a hot beverage leads to an experience of mental warmth, which in turn results in an increased experience of hospitality. Furthermore, based on amongst others Fenko et al. (2010) and Fay and Maner (2012), comfortable warm furniture is also expected to lead to the experience of mental warmth, which in turn is expected to result in an increased experience of hospitality. As mental warmth is conceptually most related to the *care* factor of the experience of hospitality, the effects are predominantly expected on *care*. This leads to the following four hypotheses:

- H1 Touching and drinking a hot drink leads to an increased experience of hospitality (especially the factor 'care') compared to touching and drinking a cold drink.
- H2 Sitting on heated furniture leads to an increased experience of hospitality (especially the factor 'care') compared to sitting on non-heated furniture.
- H3 The effect of the type of drink on the experience of hospitality is mediated by the experience of mental warmth.
- H4 The effect of the temperature of furniture on the experience of hospitality is mediated by the experience of mental warmth.

Material and methods

Design and participants

A 2 (warm versus cold drink) x 2 (heated versus non-heated furniture) between-subjects quasi-experimental design was employed. On eight days in May and June, 145 visitors of 11 different theatre performances participated in the experiment. Participants were randomly assigned to the

conditions of furniture material; on each day half of the seats was heated and half of the seats was non-heated. Visitors were either offered a hot drink or a cold drink: on days 1, 3, 5 and 7 they could choose between hot coffee or hot tea, and on days 2, 4, 6 and 8 between iced coffee or iced tea. Indoor ambient temperature did not differ between the days on which warm drinks ($M=23.9$ °C) and the days on which cold drinks ($M=23.8$ °C) were offered.

Prior to the analysis, data from 18 participants were deleted from the analytic sample (two because they took the questionnaire to a table outside the research area, two because they received a second drink from someone else, and 14 because they declined the drink), yielding a sample of 127 participants (74 female).

Environmental manipulation

Drink was manipulated by the type of drinks participants received before filling out a questionnaire on their experience of hospitality. The participants received alternately a paper cup with a hot drink (they could choose between tea or coffee) a cold drink (they could choose between iced tea or iced coffee).

Furniture was manipulated through the temperature of the furniture on which participants were sitting while filling out the questionnaire. A manufacturer of heated seat cushions supplied heated seat cushions for the study. In the *heated* condition, participants sat at a table with a wooden tabletop on a wooden chair with a seat cushion slightly heated to 36 °C. In the *non-heated* condition, table and chair were identical, but the heating of the cushion was turned off (22-26° C, depending on the indoor air temperature). Thus, unlike the cold condition in the drink manipulation this represented a neutral control condition.

Measures

For all statements in this study, the participants were required to indicate on a seven-point Likert scale the degree to which they agreed with the statement (ranging from strong disagreement (1) to strong agreement (7)).

Experience of hospitality. The experience of hospitality was measured by the 13-item Experience of Hospitality Scale (EH-Scale) (Pijls et al., 2017) with three factors. The *inviting* factor consisted of three items on experiencing openness, freedom and feeling invited (Cronbach's $\alpha = .83$). The *care* factor comprised seven items measuring amongst others the experience of involvement, effort, interest and support (Cronbach's $\alpha = .89$). The *comfort* factor was measured by three items on feeling comfortable, at ease and relaxed (Cronbach's $\alpha = .87$). Cronbach's alpha for the *overall experience of hospitality* (13 items) was .92.

Mental warmth. Mental warmth was measured by the experienced mental warmth in the foyer (warm atmosphere and intimate atmosphere, two statements, Pearson correlation $r = .72$).

Demographics. Additionally, demographics were registered: gender, age, frequency of visit and cultural background.

Other measures. Three items served as manipulation checks. To assess the *perceived temperature of drinks* respondents rated the statement ‘while drinking, my drink feels cold/warm’ and ‘the cup of my drink feels cold/warm’. To assess the perceived temperature of the furniture, respondents rated the statement ‘the furniture feels cold/warm’. These questions were answered on an Osgood semantic differential (1 to 7: very cold/very warm). Furthermore, to avoid drawing attention to the manipulation and to control for potential confounders, some additional questions were asked about the furniture (attractiveness, matching the organisation and comfort), about the drinks (the type and the taste of the drink) and about the foyer (the perceived modernity and attractiveness of the foyer). Finally, to avoid possible confounding effects of air temperature, the perceived ambient warmth in the foyer and the indoor air temperature were measured. The warm weather during the period the research was carried out resulted in a relatively warm indoor temperature in the foyer; at table height, the temperature range was 22 °C - 26 °C, with a mean temperature of 23.9 °C. However, the mean indoor temperature did not differ between the conditions of drink ($F(1,123)=.00, p >.10$) and furniture ($F(1,123)=.07, p >.10$).



Figure 5.1. Experimental setup in the foyer.

Procedure

The procedure of the experiment was based on procedures of the experiments carried out by Williams and Bargh (2008a) and Lynott et al. (2014), who also examined the effect of physical warmth on psychological warmth. They first asked participants to evaluate a new product (a therapeutic pad), and then they asked questions about their main dependent variable (a reward

choice). Visitors were approached on entering the foyer from the cloakroom. They were asked to participate in the study. They were told that they would be taking part in a drink evaluation study combined with an evaluation of the theatre experience thus far. Participation took about 5 to 10 minutes. First, the participants were asked to choose a warm drink (tea or coffee) or a cold drink (iced tea or iced coffee) and bring it to an allocated seat. There they received the questionnaire containing an informed consent, questions on the drink, questions on the experienced hospitality in the foyer, questions on the furniture and demographics. After filling out the questionnaire the participants were thanked for their participation and were told about the possibility to contact the researchers for more information about the research. The experimental situation is depicted in Figure 5.1.

Results

Manipulation check

First aspect to be checked was whether the manipulations of physical warmth had been successful by performing a 2 (drink) x 2 (furniture) MANOVA. The F-test for the overall effect of both drink (Wilks's $\Lambda = .215$, $F(3,112)=136.35$, $p<.001$, $\eta_p^2=.79$) and furniture (Wilks's $\Lambda =.796$, $F(3,112)=9.59$, $p<.001$, $\eta_p^2=.204$) were significant. The univariate ANOVA's showed that the cups with hot drinks felt significantly warmer (rated on a 7-point scale, $M=6.00$, $SD=.90$) than the cups with cold drinks ($M=2.79$, $SD=1.10$; $F(1,114)=291.02$, $p<.001$, $\eta_p^2=.72$). In addition, the temperature of the hot drinks was rated significantly higher ($M=5.85$, $SD=.84$) than the temperature of the cold drinks ($M=3.07$, $SD=.90$; $F(1,114)=291.83$, $p<.001$, $\eta_p^2=.72$). Furthermore, participants perceived the heated furniture condition ($M=5.73$, $SD=1.08$) as warmer than the non-heated furniture condition ($M=4.81$, $SD=.89$; $F(1,114)=26.46$, $p<.001$, $\eta_p^2=.19$).

Correlations factors EH-Scale and mental warmth

Table 5.2 shows the correlations between the factors of the experience of hospitality scale (EH-Scale) and mental warmth. The factors *inviting*, *care* and *comfort* of the EH-Scale are related, but the correlations between the factors are lower than the threshold of .85 (Kline, 2005), indicating discriminant validity. Additionally, all hospitality factors significantly correlate with mental warmth, but also remain below the threshold of .85.

Effects of drink and furniture

First, the hypothesized direct effects of drink and furniture on the experiential factors of hospitality were examined by performing a 2 (drink) x 2 (furniture) MANOVA. The F-test for the overall effect of drink approached significance (Wilks's $\Lambda =.930$, $F(3,107)=2.67$, $p=.05$, $\eta_p^2=.070$). The univariate ANOVA's showed an effect of *drink* on *overall hospitality* ($F(1,109)=4.62$, $p<.05$, $\eta_p^2=.041$), and more specifically, on the *care* factor of the EH-Scale ($F(1,109)=6.98$, $p<.01$, $\eta_p^2=.060$). People who received a hot drink experienced more *overall hospitality* ($M_{hotdrink}=5.36$,

$SD=.96$, versus $M_{cold\text{drink}}=4.96$, $SD=.90$) and more *care* ($M_{hot\text{drink}}=5.10$, $SD=1.12$, versus $M_{cold\text{drink}}=4.54$, $SD=1.03$) than people who received a cold drink. As expected, no effects of drink were found on the factors *inviting* ($F(1,109)=.62$, $p>.05$), and *comfort* ($F(1,109)=1.44$, $p>.05$). MANCOVA revealed that these effects of *drink* on the experience of hospitality did not result from the administered factors *liking of the drink*, *indoor temperature*, and *perceived ambient temperature* in the foyer. Furthermore, MANOVA showed that effects of *drink* were only found for the measures of the experience of hospitality in the foyer, and not on the *perceived modernity*, *perceived luxury* and *attractiveness* of the foyer.

Table 5.2. Pearson Correlation between the factors of the EH-Scale and Mental Warmth. All correlations are significant at $p < .01$.

Variable	M	SD	1	2	3	4
Inviting	5.30	1.09				
Care	4.84	1.09	.62			
Comfort	5.71	1.06	.69	.64		
Overall EH	5.16	.95	.82	.94	.82	
Mental Warmth	5.30	1.04	.70	.59	.54	.67

For *furniture* no main effects were found on the experience of hospitality, neither on the total experience of hospitality nor on the experience of *care*, *comfort* and *inviting*. Furthermore, no interactions between furniture and drink were found.

However, gender, a control variable, affected the influence of furniture on the experience of hospitality. A 2 (drink) x 2 (furniture) x 2 (gender) MANOVA showed that the interaction between furniture and gender approached significance at level $p .10$ (Wilks's $\Lambda=.940$, $F(3,97)=2.074$, $p=.109$, $\eta_p^2=.060$). Although this interaction effect only approached significance on a multivariate level, significant univariate effects were found for all factors of the experience of hospitality: *Overall hospitality* ($F(1,99)=6.22$, $p<.05$, $\eta_p^2=.059$), *care* ($F(1,99)=4.95$, $p<.05$, $\eta_p^2=.048$), *comfort* ($F(1,99)=4.52$, $p<.05$, $\eta_p^2=.044$) and *inviting* ($F(1,99)=5.12$, $p<.05$, $\eta_p^2=.049$). As can be seen in Figure 5.2, for men warm furniture seemed to have a positive effect on their experience of hospitality. Simple effects analysis showed that men experienced more *overall hospitality* ($M_{heated\text{furniture}}=5.57$, $SD=.92$, versus $M_{non-heated\text{furniture}}=4.80$, $SD=1.02$; $F(1,103)=6.46$, $p<.05$, $\eta_p^2=.059$), more *care* ($M_{heated\text{furniture}}=5.26$, $SD=1.14$, versus $M_{non-heated\text{furniture}}=4.49$, $SD=1.07$; $F(1,108)=5.53$, $p<.05$, $\eta_p^2=.049$) and more *comfort* ($M_{heated\text{furniture}}=6.08$, $SD=.74$, versus $M_{non-heated\text{furniture}}=5.37$, $SD=1.22$; $F(1,114)=4.90$, $p<.05$, $\eta_p^2=.041$) and experienced the theatre foyer as more *inviting* ($M_{heated\text{furniture}}=5.80$, $SD=.83$, versus $M_{non-heated\text{furniture}}=4.99$, $SD=1.22$; $F(1,108)=5.83$, $p<.05$, $\eta_p^2=.051$) when sitting on heated furniture compared to sitting on non-heated furniture. For women, the temperature of the furniture had no effect on their experience of hospitality.

Also, this interaction between furniture and gender was only found for the experience of hospitality, and not for the *attractiveness*, the *perceived luxury* and the *perceived modernity* of the foyer. In addition, the interaction between furniture and gender did not change when the administered factors indoor temperature and the perceived indoor temperature were included as covariates.

Also, this interaction between furniture and gender was only found for the experience of hospitality, and not for the *attractiveness*, the *perceived luxury* and the *perceived modernity* of the foyer. In addition, the interaction between furniture and gender did not change when the administered factors indoor temperature and the perceived indoor temperature were included as covariates.

In sum, people who chose a hot drink experienced more hospitality in the theatre foyer compared to people who received a cold drink. This effect is only apparent in the experience of the *care* factor of the EH-Scale, no effect was found for the *comfort* factor and the *inviting* factor. Sitting on warm furniture also led to the experience of more hospitality, but only for men. In contrast to the effects of drink, warm furniture positively affected all factors of the experience of hospitality. The results provide support for Hypothesis 1, and partially support Hypothesis 2.

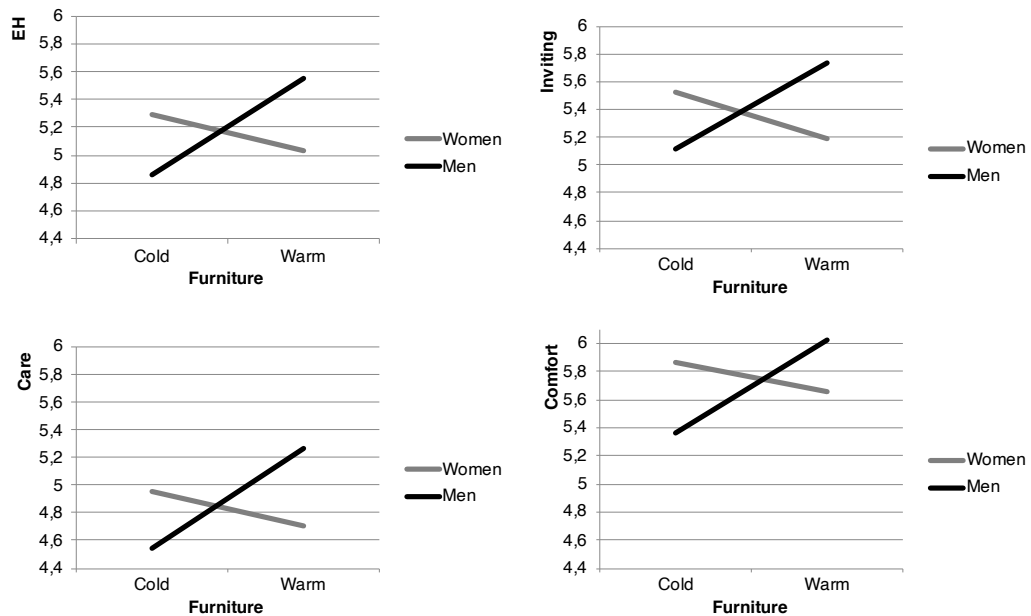


Figure 5.2. Interaction furniture and gender on the overall hospitality and on the factors *inviting*, *care* and *comfort*. The effects on hospitality, *inviting*, *care* and *comfort* are only significant for men.

Mental warmth

Next, a mediation analysis using SPSS PROCESS was performed to test the mediating role of the experienced *mental warmth* on the influence of *drink* and *furniture* on the measures of the experience of hospitality. The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010). The unstandardized path

coefficients are shown in Figure 5.3. The direct effects of *drink* on the experience of hospitality were fully mediated by the experience of *mental warmth* (Figure 5.3); indirect effects were found for *drink* on the *overall hospitality* ($b=.26$, $SE=.114$, $95\% CI [.0393, .4938]$) and on *care* ($b=.24$, $SE=.117$, $95\% CI [.0356, .4884]$), with 95% confidence intervals, excluding 0. When including *mental warmth* in the model, *drink* was no longer a significant predictor of both the *overall hospitality* and the *care* factor of the EH-Scale. The effects of warm furniture on the experience of hospitality, found for men, were not mediated by the mental warmth experienced.

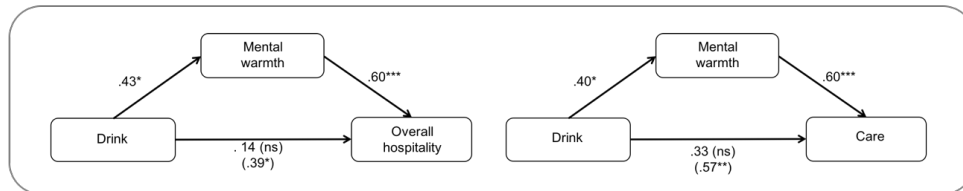


Figure 5.3. Mediation analyses in the effects of *drink* on *overall hospitality* and *care*, with *emotional warmth* in the Foyer as mediator. Unstandardized coefficients and significance values (* $p<.05$, ** $p<.01$, *** $p<.001$) are reported. The unstandardized coefficients in brackets indicate the effect ignoring the mediator.

Thus, in line with Hypothesis 3, hot drinks increased the overall experience of hospitality and the experience of *care*, both via the mental warmth experienced in the theatre foyer. However, no support was found for the mediating role of mental warmth in the effect of furniture (Hypothesis 4).

Conclusion and discussion

Firstly, the study contributes to the literature on hospitality and the literature on environmental psychology; the study provides support for our main hypothesis that the sensory perception of physical warmth perceived in a service environment has an impact on people's experience of hospitality, particularly on the experience of the *care* factor. This confirms the idea that not only interaction with service staff but also atmospheric service cues contribute to people's experience of hospitality. The impact of atmospherics was already known for customer experience in general. Now it is shown that this also applies specifically to the experience of hospitality, which people traditionally associate with staff behaviour (Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016).

Secondly, this article contributes to the literature on embodiment, as it has been demonstrated by mediation analysis that mental warmth is triggered by holding and drinking a hot drink. In addition, the present study shows that physical sensations of warmth not only activate mental warmth attributed to a person (Huang et al., 2013; Williams & Bargh, 2008a) or an object (Zwebner et al., 2014), but also mental warmth associated with an environment, such as a theatre foyer.

The study further contributes to the need of the relatively new field of embodied cognition research to shift from descriptive research on the existence of the phenomenon of embodiment to explanatory research focusing on how and under which conditions embodiment occurs (Dijkstra et al., 2014; Landau, Meier, & Keefer 2010; Meier et al., 2012). The present study provides additional evidence that different types of warmth stimuli differently affect people's experience of hospitality. The effect of physical warmth on the experience of hospitality was found for the temperature of drinks, affecting the overall experience of hospitality and the experience of care through the mediator mental warmth. It was also suggested that the temperature of furniture positively affects the experience of hospitality, but only for men. However, in this effect, mental warmth was no mediator.

The difference in the results of both types of warmth sensations might concern the duration of the physical sensation; consuming a hot drink concerns a momentary perception of warmth, while sitting on warm furniture concerns a prolonged exposure to warmth. Both the exposure to a hot drink and the slightly heated seat cushions were intended to produce comfortable warmth stimuli, which both were expected to cause a 'warmer is better' effect. The high indoor temperature in the theatre may have caused discomfort for women only, which possibly prevented the heated furniture from having a positive effect on them. Apparently, the warm ambient temperature had no influence on the short exposure to the hot drinks. This is in line with previous research; the temperature of the hot drinks or pads seem to matter less than long-term exposure to warmth such as warm furniture or ambient temperatures.

The warm cushions may have also been perceived as uncomfortable for women for another reason. Women might have been associated the warmth of the cushions with people who had been seated on their chair before, which may have given them an unsavoury and unclean feeling. After all, research has shown that cleanliness seems more important to women than to men (Dell' Olio, Ibeas, & Cecin, 2011; Mortimer & Clarke, 2011). Furthermore, Karjalainen (2011) suggests in his review article on thermal comfort and gender that women are more sensitive than men to a deviation from an optimal temperature and express more dissatisfaction and thermal discomfort. Another explanation for the difference in the effect of hot drinks and warm furniture might be the substantive association people have between offering coffee or tea and hospitality, which does not apply to warm furniture. Perhaps the habit (in The Netherlands) of offering coffee and tea in itself produces a hospitable feeling, because of its associations with cosiness, welcome and caring. In that case, it is not the warm temperature, but the symbolic meaning of coffee and tea that contribute to people's experience of hospitality. Perhaps another psychological mechanism than embodied cognition causes the positive effect of coffee and tea on people's experience of hospitality, which is in line with ideas of authors who have a critical attitude towards embodied cognition and point to alternative explanations (e.g. Dove, 2016; Mahon, 2015).

In conclusion, the present findings are in line with embodied cognition theory, as physical warmth (hot drink) influences the experience of hospitality (care), mediated by mental warmth. However, the findings do not offer conclusive evidence for embodiment as underlying mechanism of the

effects. As with previous studies, also in this study there are alternative explanations. Furthermore, the findings support the idea that short-term and long-term exposure to warmth work out differently.

Practical implications

The present study is a first endeavour in applying embodied cognition to the context of hospitality. It contributes to the ongoing attempts to understand if and how embodied cognition is involved in people's cognitive representations. In a real-life setting, the study shows that priming people with physical warmth leads to mental warmth, which in turn affects people's experience of care.

The present research is rather unique in examining embodiment in an applied setting of a theatre. Most research on embodied cognition concern laboratory setting (e.g. Hong & Sun, 2012; Huang et al. 2013; Lee et al. 2013; Williams & Bargh, 2008a). In a complex real-world environment, it is difficult to demonstrate effects. However, the present study shows that even in a practical setting like a theatre, specific relations between variables are observable.

For practitioners, the findings provide some guidelines for creating hospitable service environments. The study underlines the importance of the physical aspects for the hospitality performance of an organisation by showing that atmospheric service cues, in this case hot drinks, influence the hospitality experienced in that environment. It furthermore shows that through research, abstract concepts such as hospitality can be translated into concrete environmental features. Service experts and designers can use these concrete insights for the design of hospitable service environments.

Concluding remarks

The body of knowledge on embodied cognition research shows it is a phenomenon that is difficult to reveal. Lynott and al. (2014) argued that research on the embodiment of warmth generally show small effects which often hover around significance at a level of $p .05$ (e.g., IJzerman & Semin, 2009, Study 2; Williams & Bargh, 2008a, study 1). This applies also to our study. Caution is required in the interpretation of the results. As in every type of experimental setting, but maybe even more in a real-life setting such as this, it is important to replicate such studies in order to see whether the present findings can be confirmed. Additionally, more research has to be done to further understand the mechanism of embodied cognition (Fay & Maner, 2014). As Cesario (2014, p.45) states: "There needs to be an appreciation by all parties that every study is merely one data point in the cumulative, ongoing practice of science."

in brief

Chapter 5 provided support for our assumption that warm drinks activate warmth, which in turn leads to an increased experience of specifically the care factor of hospitality in the foyer. Hence, embodied cognition was suggested to be the most likely mechanism involved. Warm furniture was also suggested to affect all factors

of the experience of hospitality, but only for men. In contrast to what was expected, this effect was not embodied. Apparently, different manipulations of physical warmth may affect the experience of hospitality by different mechanisms.

In the following chapter, the role of the embodied concept comfort in the experience of the comfort factor of hospitality is studied in the context of a self-service restaurant of a large furniture chain. Although this concept seems a logical embodied construct, because comfort has both a physical and a mental component, thus far no studies have been found in which the embodied construct of comfort was investigated. This chapter will demonstrate that physical comfort affects the experience of hospitality, probably both through an embodied and a disembodied route.

6. comfort: the role of seating comfort and acoustic comfort⁸

⁸ This Chapter is a modified version of the manuscript Pijls-Hoekstra, R., Galetzka, M., Groen, B. H., & Pruyn, A. T. H. (2019). Comfortable seating: The influence of seating comfort and acoustic comfort on customers' experience of hospitality in a self-service restaurant. *Applied Ergonomics*, 81, [102902]. <https://doi.org/10.1016/j.apergo.2019.102902>

Introduction

Service organisations increasingly recognise the importance of hospitality for consumers' evaluation of their services. Thus far, most attention has been paid to understanding and measuring hospitable behaviour of service staff (e.g. Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016). However, it is widely accepted that besides staff behaviour, also ergonomic and environmental service cues play a role in people's experience (Ahola & Mugge, 2017; Berry et al., 2006; Bitner, 1992; Brunner-Sperdin et al., 2012; Ladeira et al., 2013). This is likely to apply also to the experience of hospitality. Pijls et al. (2017) developed a scale (EH-Scale) for measuring the three factors of the experience of hospitality in service environments (*inviting, care and comfort*), incorporating also physical aspects of the servicescape.

Research has shown that most abstract mental concepts are metaphorically based on concrete physical experiences (Asch, 1958; Murphy, 1996; Williams, Huang, & Bargh, 2009). According to this theory of embodiment, attributes we perceive with our senses result in bodily sensations, such as warmth and weight, which in turn affect our mental state. Something that is physically heavy, for instance, is metaphorically associated with concepts of seriousness and importance (Ackerman, Nocera, & Bargh, 2010), and physical warmth is associated with emotional warmth and affection (Lakoff & Johnson, 1980). Those concrete physical perceptions may help to define service elements that contribute to a hospitable experience.

Thus far, no research has been published on the role of bodily sensations in the experience of hospitality. The present study focuses on the *comfort* factor of the experience of hospitality. Based on embodied cognition theory, we expect a relationship between the physical, bodily perception of comfort and the mental experience of comfort (feeling comfortable and relaxed). The present study addresses the effect of seating comfort and acoustic comfort on mental comfort as well as the experience of hospitality in a service context.

Physical comfort

Comfort in indoor environments is predominantly determined by building-related factors (Frontczak & Wargocki, 2011). Building-related factors consist of hardware aspects of the building and indoor environmental conditions. Hardware aspects refer to the type of building and room interior aspects such as seating comfort (Lam, Chan, Fong, & Lo, 2011; Lucas, 2003; Wakefield & Blodget, 1996). Indoor environmental conditions include thermal comfort (Rijal, Humphreys, & Nicol, 2017; Wagner, Gossauer, Moosmann, Cropp, & Leonhart, 2007), visual comfort (Ricciardi & Buratti, 2018), acoustic comfort (Frontczak & Wargocki, 2011; Ricciardi & Buratti, 2018) and indoor air quality (Huizenga, Abbaszadeh, Zagreus, & Arens, 2006; Mokhtar, Zaoui, & Aid, 2014). So, both seating comfort and acoustic comfort are factors influencing people's perceptions of comfort in indoor environments.

Seating comfort

Most research on seating comfort has been done in the field of ergonomics and is focussed on office and classroom seats, passenger seats in public transport and operator seats in cars and buses (i.e. Cascioli, Liu, Heusch, & McCarthy, 2016; Fasulo, Naddeo, & Capetti (2018); Looze, Kuijt-Evers, & van Drieën, 2003). Studies in this field are mostly experimental studies evaluating various characteristics of seats. Seating comfort has also been studied in the context of services, particularly in restaurants (e.g. Kim & Moon, 2009; Lee, Wang, & Cai, 2015), casinos (e.g. Lam et al., 2011; Lucas, 2003; Wakefield & Blodgett, 1996) and at airports (e.g. Moon, Yoon, & Han, 2017; Zheng, 2014). In these service-related studies, seating comfort serves as one of the environmental service elements influencing satisfaction and loyalty, and it is usually evaluated after people's visit.

According to Lam et al. (2011), seating comfort refers to the level of physical (dis)comfort derived from the seating quality, and it is affected by the physical seat itself and by the distance between seats (Lee et al., 2015; Lucas, 2003; Wakefield & Blodgett, 1996). Concerning the physical seat, the softness of the seats (such as seat padding and fabric materials) as well as the design of the seats (aesthetic design, armrests and backrests, seat dimensions) have been found to affect seating comfort (Branton & Grayson, 1967; Floyd & Ward, 1969; Hiemstra-van Mastrikt, Groenesteijn, Vink, & Kuijt-Evers, 2017; Osborne, 1987).

With regard to the evaluation of seating comfort, debates are going on about whether comfort and discomfort are two opposites of a continuous scale, ranging from extreme discomfort to extreme comfort (e.g. Richards, 1980), or whether they are separate constructs (Helander & Zhang, 1997; Hiemstra-van Mastrikt et al., 2017; Zhang, Helander, & Drury, 1996). Currently, the latter view receives most support. According to Zhang et al. (1996) the two are independent factors affected by different variables. Comfort is associated with feelings of relaxation and well-being, and can be influenced by, for example, the design and materials of seats. On the other hand, discomfort is associated with feelings of pain, soreness, numbness and stiffness, and is caused by physical constraints in the design. Vink (2005) also indicated that discomfort was more related to physical characteristics, whereas comfort was more related to experience, emotion, unexpected features, and luxury. Helander and Zhang (1997) performed a study in an office setting, measuring comfort and discomfort of several chairs at three moments during the day. They found that discomfort increases over time and is independent of the design of the chair. The longer the time that people sat on a chair, the more discomfort they experienced. In contrast, comfort is regarded as time independent. People can immediately assess comfort factors when they sit down.

Acoustic comfort

Acoustic comfort refers to “*a state of contentment with acoustic conditions*” (Frontczak & Wargocki, 2011, p.925). Mokhtar et al. (2014) distinguish inside noise (equipment, moving, activities) and outside noise (transportation and neighbouring buildings). The type of the noise, sound levels and the frequency of sounds are sound characteristics that influence what people perceive as comfortable (Frontczak & Wargocki, 2011).

Studies on the influence of sound sources on the acoustic comfort in restaurants are scarce (Chen & Kang, 2017). Chen and Kang (2017) investigated acoustic comfort in two large dining spaces. They made a distinction between four types of sound sources: general background music, speech sound, activity sound (sounds of tableware, footsteps, food preparation) and mechanical noise (kitchen ventilators, the sound of elevators running and the friction sound of dining trolleys). Also, Lindborg (2016) developed a taxonomy of sound sources in restaurants. He divided sounds into three main categories, largely corresponding to Chen and Kang (2017). The first category, *sound design*, refers to sounds of nature, music and other sounds, such as machines and traffic. The second category, *cuisine*, consists of kitchen sounds. The third category, *customers*, refers to conversations (laughter, chatting, shouting), eating (glassware clinking, tableware clatter and eating/slurping), and crowd (talking, children, footsteps, chairs). Lindborg (2016) further concluded that people rate sounds of screeching chairs, kitchen washing sounds, clanking dishes, and footsteps as unpleasant. At the other hand, cooking sounds, music and glassware (which produces more likeable sounds than metal tableware) are rated as pleasant. Chen and Kang (2017) further found that the acoustic comfort of diners has an influence on the comfort evaluation of the overall dining environment, and background noise is an important factor affecting the acoustic comfort evaluation of diners.

Comfort, embodiment and hospitality

Although a link between physical and mental comfort seems evident, research on the embodiment of the mental concept of comfort has thus far not been reported in the literature. Nevertheless, people are able to experience comfort both physically and mentally. Slater (1985) for example distinguished between a physical and a psychological component of comfort. Da Silva Menegon, Vincenzi, Andrade, Barbetta, Merino, & Vink (2017) also make a distinction between a physical and a psychological component. Therefore, we hypothesize, based on embodied cognition theory, that physical comfort (both physical seating comfort and physical acoustic comfort) triggers the mental concept of comfort. Since comfort is related to the experience of hospitality (Pijls et al., 2017), mental comfort in turn is expected to affect people's experience of hospitality.

Aim of the study

The present study explored the role of the embodied concept of comfort in the experience of hospitality. The study focused on the effect of two types of physical comfort, type of seat and acoustic comfort, on the experience of hospitality among consumers of a self-service restaurant in an international furniture chain. *Seating comfort* was manipulated by the type of seat (a chair with seat support versus stool without seat support). Chairs were expected to be perceived as physically more comfortable, which would lead to the mental experience comfort, which in turn would result in an increased experience of hospitality. As mental comfort is conceptually related to the *comfort* factor of the experience of hospitality (Pijls et al., 2017), the effects were predominantly

expected for this factor of the experience of hospitality. *Acoustic comfort* was manipulated by the ambient noise (playing or not playing extra kitchen noise on a speaker). It was expected that a lower level of ambient noise would be perceived as acoustically more comfortable, which would lead to the experience of more mental comfort, and in turn result in an increased experience of hospitality. Furthermore, the effects of physical comfort may depend on individual characteristics. For example, visitors of the restaurant may vary in their desire to sit down and relax for a while. Depending on, amongst others, their physical condition and the time they have spent in the retail environment, visitors may desire to sit down and take a rest. The higher their desire to relax, the more they are expected to appreciate a comfortable seat.

3. Method

Design and participants

A 2 (type of seat: chair versus stool) x 2 (ambient sound: presence versus absence of extra kitchen sound) between-subjects design was employed. 262 Native Dutch-speaking adults who visited the restaurant of a self-service restaurant of a large furniture chain together with a maximum of three other adults participated in the experiment. To minimize the effect of additional sounds, people with young children were excluded from the study. Children from primary and secondary school were not present since the experiment took place during school time. Also, people with a hearing impairment, physical impairment and extreme obesity were excluded from the study. One hundred seventy-nine participants were female, the mean age was 54.9 (SD=17.14), and except primary school (2,3%), all levels of educational background were about equally represented. Participants were randomly assigned to the conditions *type of seat* and *ambient sound*. The experiment took place on Tuesdays, Thursdays and Fridays, between 10 am and 4 pm, the period that there were relatively few families with young children. The restaurant area that was set apart for this study was either furnished with chairs or with stools. Half of the time, the extra kitchen sound was played. The four conditions were equally distributed over the weekdays and time of the day to control for crowdedness, time and day of the week.

Environmental manipulation

Type of seat was manipulated by the type of seats in the restaurant. The selection of the furniture was based on a pre-test: 17 different seats were evaluated, by asking 20 to 25 visitors to rate the comfort of the seats on a seven-point scale. The two seats with the largest difference in the scores on the support and physical comfort were selected for the study (presented in Figure 6.1). The results of the pre-test showed that the perceived support of the chair with the backrest ($M= 5.42$, $SD= 1.16$) was higher than perceived support of the stool without backrest ($M= 2.97$, $SD= 1.13$, $F(1,54)=63.52$, $p<.001$ $\eta^2=.54$). In addition, the physical comfort of the chairs ($M= 5.44$, $SD= 1.31$) was rated higher than the physical comfort of the stools ($M= 3.54$, $SD= 0.91$, $F(1,54)=37.71$, $p<.001$ $\eta^2=.41$). In particular the height and shape of the backrest and the absence of pressure point

may cause physical discomfort. For the stool the reactions concerned mainly the lack of support because of the absence of a backrest and the round and relatively small surface of the seat of the stool. This refers to the seat characteristics *seat dimensions* and *shape of the seat* identified by Hiemstra-van Mastrigt et al. (2017).

Thus, people sat either on a chair with backrest (black, wood, seat height 44 cm) or a stool without backrest (black, plastic seat with iron frame, seat height 45 cm). The area in the restaurant that was set apart for the study comprised of 5 tables with each 2 seats, either chairs or stools.



Figure 6.1. The two types of seats, with seat backrest (left) and without backrest (right).

Ambient sound was manipulated by playing or not playing extra background kitchen sound (sounds of bowls, plates and cutlery) in the area of the restaurant where the research took place. The manipulation was based on Lindborg (2016), who showed that people did not like kitchen washing sounds and clanking dishes. The sound was played using a JBL Flip3 Portable Bluetooth Speaker, hidden in a tube and placed in a corner on the floor, so that it seemed to originate from the kitchen. The distance between the speaker and the tables was 2 to 4 meters. Nobody commented that the sound was artificial. The sound level of the extra ambient sound was between 2 and 3 dBA above the level of the natural ambient sound. Overall the sound level of ambient sound varied from 56.0 to 64.4 dBA.

Measures

For all statements in this study the participants were required to indicate on a seven-point Likert scale the degree to which they agreed with the statement (ranging from strong disagreement to strong agreement).

Experience of hospitality. The experience of hospitality was measured by the 13-item EH-Scale (Pijls et al., 2017) with three factors. The *inviting* factor consisted of three items on experiencing openness, freedom and feeling invited (Cronbach's $\alpha = .75$). The *care* factor comprised seven items measuring the experience of servitude, empathy and acknowledgement (Cronbach's $\alpha = .93$). The

factor *comfort* was measured by three items on feeling comfortable, at ease and relaxed (Cronbach's $\alpha = .82$). Cronbach's alpha for the overall experience of hospitality (13 items) was .92.

(Dis)comfort. Physical (dis)comfort was measured by the physical seating comfort, physical seating discomfort, physical acoustic comfort and physical acoustic discomfort. Furthermore, in the present study a separate scale was composed for measuring mental comfort. A factor analysis (PCA) was performed on all comfort-related items (see appendix A for the rotated factor matrix). After removing 6 items with low factor loadings and cross loadings, the analysis resulted in the 5 factors described above: physical seating comfort, physical seating discomfort, physical acoustic comfort, physical acoustic discomfort and a separate factor mental comfort. For the complete survey questions on (dis)comfort see appendix B.

Physical seating comfort and discomfort. Items for measuring the physical *seating comfort* were based on amongst others Helander and Zhang (1997) and da Silva Menegon et al. (2017). Three items ('stability', 'attractiveness' and 'new') were excluded because of low factor loadings (<.6), resulting in a 9-item scale (Cronbach's $\alpha = .94$). The 5-item measurement of physical *seating discomfort* was based on the discomfort factor of the Chair Evaluation Checklist developed by Helander and Zhang (1997). Because of low factor loadings (<.6) two items were excluded ('sore muscles', 'seating discomfort'), resulting in a 3-item factor (Cronbach's $\alpha = .85$).

Physical acoustic comfort and discomfort. The factor analysis again distinguished between acoustic comfort (pleasantness of the sound and comprehensibility, 2 items, Pearson correlation $r = .34$), and acoustic discomfort (fatigue of the ambient sound, and to what degree participants heard and suffered from sounds from the kitchen, 3 items, Cronbach's $\alpha = .78$). One item (on the noisiness) was removed because of cross loading on both factors. Additionally, the average sound level (dBA) over periods of 20 to 30 minutes was measured using SafeNoise, an iPhone-app approved by the Dutch hearing foundation.

Mental comfort. For measuring the experienced mental comfort, items were adopted from the well-being factor of the Chair Evaluation Checklist (CEC) developed by Helander and Zhang (1997), from the questionnaire for aircraft seating comfort (da Silva Menegon et al., 2017). Two items on resting and recovering were added. The six items formed a separate factor (Cronbach's α 6-items = .95).

Desire to relax. To measure participants' desire to relax, participants were asked to what degree they wished to sit down for a while, felt physically tired and desired to relax their body (Cronbach's $\alpha = .86$).

Demographics. Gender, age, body height, weight and educational background were registered.

Other measures. To avoid possible confounding effects, additional questions were asked about the seats and the restaurant (attractiveness, cleanliness, smell, perceived warmth, air flow, lighting and consumption of food and drinks). Also, the frequency of visit, the duration of the visit, the motivation for the visit and the type of drink and food (warm/cold) were reported. Furthermore, the indoor air temperature ($^{\circ}\text{C}$) and crowdedness were registered for each participant. The time

between the handout and the return of the questionnaire was also registered (this ranged from 10 to 39 minutes, with an average of 15 minutes).

Procedure

In the self-service restaurant of a large furniture chain, consumers were randomly approached after check out and were asked to participate in a study on consumers' restaurant experience. They took a seat in the area that was set apart for the study, and to use the restaurant as they intended (to eat/drink (71%), to rest (13%), to catch up (6%) or for some other reason (10%)). After a few minutes, they received the questionnaire and were asked to individually fill it out during or after the consumption of their food and drinks. The participants mostly filled in the questionnaire either immediately after they received the questionnaire, or after they consumed the food. To avoid order effects, half of the participants received version A (first the questions on physical comfort, then the questions on mental comfort), and the other half received version B (first the questions on mental comfort, then the questions on physical comfort). Participation took about 10 minutes. After filling out the questionnaire, the participants were thanked for their participation and received a food product.

Results

Manipulation check

First was checked whether the manipulations of physical comfort, *type of seat* and *ambient sound*, were successful. Regarding the *type of seat*, a one-way MANOVA showed significant results (*Wilks's* $\Lambda = .82$, $F(2,254)=27.55$, $p < .001$, $\eta^2 = .18$). The chairs were perceived (rated on a 7-point scale) as more comfortable ($M=4.76$, $SD=1.22$) than the stools ($M=3.49$, $SD=1.49$; $F(1,255)=54.83$; $p < .001$; $\eta^2 = .17$; 95% CI [.928, 1.600]). For discomfort results were also significant. The stool was rated as more uncomfortable ($M=3.37$, $SD=1.59$) than the chair ($M=2.86$, $SD=1.43$; $F(1,255)=7.04$; $p < .01$, $\eta^2 = .027$; 95% CI [.130, .876]).

Regarding the *ambient sound*, the MANOVA was significant (*Wilks's* $\Lambda = .52$, $F(3,244)=74.58$, $p > .001$, $\eta^2 = .48$). When the additional kitchen sound was played, the *sound levels* were higher ($M=61.63$ dBA, $SD=1.57$) than when no additional kitchen sound was played ($M=58.83$ dBA, $SD=1.37$; $F(1,246)=222.42$; $p < .001$; $\eta^2 = .48$; 95% CI [2.435, 3.176]). Further, with additional kitchen sound, the *acoustic discomfort* was higher ($M=3.52$, $SD=1.52$) than without additional kitchen sound ($M=3.14$, $SD=1.39$; $F(1,246)=4.08$; $p < .05$; $\eta^2 = .016$; 95% CI [.009, .743]). However, for *acoustic comfort* no difference was found. Although extra kitchen noise led to more discomfort, it did not lead to less comfort (extra kitchen sound $M=4.89$, $SD=1.26$; no extra kitchen sound $M=4.81$, $SD=1.21$; $F(1,246)=.23$; $p > .1$). The average scores for acoustic discomfort were still low, and acoustic comfort scores were still high ($M=4.85$; $SD=1.23$). Furthermore, although the difference between the conditions in sound levels (2.81 dBA) was different, the difference in acoustic discomfort between the two sound conditions, though significant, was not very large.

Effects of type of seat and ambient sound

First, the hypothesized direct effects of *type of seat* and *ambient sound* on the experience of hospitality were examined by performing a 2 x 2 MANOVA. Prior to the test the dependent variables were checked for normality. Although the Kolmogorov-Smirnov test was significant, indicating non-normally distribution, skewness and kurtosis values were between -2 and +2, which are considered acceptable (Field, 2013; George & Mallery, 2010).

For *type of seat* the MANOVA was significant (Wilks's $\Lambda=.97$, $F(3,227)=2.61$, $p=.05$, $\eta^2=.033$). The univariate ANOVA's showed that the effect of *type of seat* on the *comfort* factor was significant ($F(1,229)=3.98$, $p<.05$, $\eta^2=.017$; 95% CI[.00, .621]). People who sat on the chair experienced more *comfort* ($M_{chair}=5.51$, $SD=1.16$, versus $M_{stool}=5.20$, $SD=1.24$) than people who sat on the stool. The effect of *type of seat* on the *overall experience of hospitality* ($F(1,229)=2.91$, $p=.09$, $\eta^2=.013$; 95% CI[-.041, .565]) and the *care* factor ($F(1,229)=2.94$, $p=.09$, $\eta^2=.013$; 95% CI[-.048, .687]) approached significance. *Type of seat* had no effect on the experience of *inviting*. For *ambient sound* no direct effects were found on the experience of hospitality, neither on the overall experience of hospitality, nor on the experience of *care*, *comfort* and *inviting*.

However, there was a significant interaction between *type of seat* and *ambient sound* on the *comfort* factor of the EH-Scale ($F(1,229)=6.10$, $p<.05$, $\eta^2=.026$; 95% CI[.004, .621]). The interaction is presented in Figure 6.2. Simple effects analysis showed that the effect of *type of seat* on the experience of *comfort* only applied to the *no-extra-sound-condition* ($F(1,252)=10.36$, $p<.001$, $\eta^2=.039$; 95% CI[.263, 1.094]). Thus, the effect of the type of furniture on the experience of *comfort* only occurred when no extra kitchen sound was present; when exposed to extra kitchen noise, the difference in the experienced hospitality (*comfort* factor) that resulted from the comfort of the seats disappeared.

As was expected, effects of *type of seat* and the interaction between *type of seat* and *ambient sound* were only found for the experience of hospitality, and not on the *perceived attractiveness* ($M_{stool}=4.91$, $SD=1.31$, versus $M_{chair}=4.96$, $SD=1.38$) and the *perceived cleanliness* ($M_{stool}=5.40$, $SD=1.29$, versus $M_{chair}=5.35$, $SD=1.39$). Furthermore, MANCOVA analysis revealed that the administered factors type of food (warm/cold), type of drink (warm/cold), indoor temperature, crowdedness, perceived airflow, lighting, frequency of visit, duration of visit and the motivation for the visit changed the effects of the *type of seat* and *ambient sound* on the experience of hospitality factors only in some cases to a minor extent.

In conclusion, in line with our expectations comfort of seating influences the *comfort* factor of people's experience of hospitality. The manipulation of *ambient sound* showed no direct effect on consumers' experience of hospitality. The manipulation might have been too subtle. However, because of the significant interaction between *type of seat* and *ambient sound* on the *comfort* factor, *ambient sound* did have an impact on people's experience of hospitality.

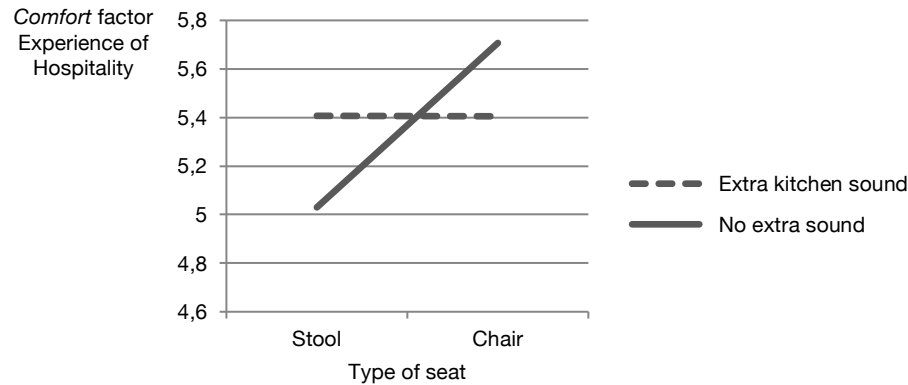


Figure 6.2. Interaction of type of seat x ambient sound on the comfort factor of the experience of hospitality.

Mental comfort

Next, it was examined whether *mental comfort* mediated the effects found for *type of seat* on the experience of *comfort*. Mediation analysis using SPSS PROCESS (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010) was performed to test the mediating role of the experienced *mental comfort* in the effect. The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Preacher & Hayes, 2004; Zhao, Lynch & Chen, 2010). The direct effects of *type of seat* on the experience of hospitality was fully mediated by the experience of *mental comfort*; Indirect effects were found for *type of seat* on *comfort* ($b=.31$, $SE =.096$, $CI=.1292$, $.4232$, see Figure 6.3), with 95% confidence intervals, excluding 0. When including *mental comfort* into the model, *type of seat* was no longer a significant predictor of the *comfort* factor of the EH-Scale. The direct effects of *type of seat* on the *overall experience of hospitality* and on the *care* factor, that approached significance, were also fully mediated by the experience of *mental comfort* ($b=.30$, $SE =.095$, $CI=.1156$, $.4852$ and $b=.31$, $SE =.096$, $CI=.1292$, $.5048$ respectively), with 95% confidence intervals, excluding 0.

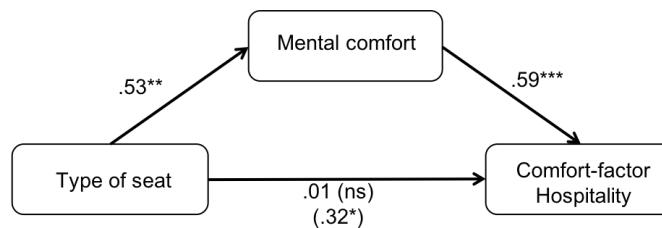


Figure 6.3. Mediation analyses in the effects of *type of seat* on *comfort* with *mental comfort* as mediator. Unstandardized coefficients and significance values (* $p < .05$, ** $p < .01$, *** $p < .001$) are reported. The unstandardized coefficients in brackets indicate the effect ignoring the mediator.

Further, it already appeared that there was no direct effect of *ambient sound* on the experience of hospitality; *mental comfort* did not appear to be a mediator in this effect either. Thus, in line with our expectations, the type of seat increased the experience of *comfort*, via the *mental comfort* experienced in the restaurant. This provides support for embodied cognition as a mechanism underlying the effect of physical comfort on the experience of hospitality.

Physical comfort and physical discomfort

As in the literature seating comfort and seating discomfort were regarded as two separate constructs, mediation analysis was performed to examine to what extent the effect of *type of seat* on *mental comfort* can be explained by *physical seating comfort* and *physical seating discomfort*. Mediation analysis using SPSS PROCESS with three mediators (model 6) was performed to test the mediating role of *physical seating comfort* and *physical seating discomfort* in the effect of *type of seating* via *mental comfort* on the *comfort* factor of the experience of hospitality. The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Preacher & Hayes, 2004; Zhao, Lynch & Chen, 2010). As Figure 6.4 shows, one indirect effect was found of *type of seat* on the *comfort* factor of the experience of hospitality via successively *physical seating comfort* and *mental comfort*, with 95% confidence intervals, excluding 0 ($b = .32$, $SE = .072$, $CI = [.1955, .3761]$). When including *physical seating comfort*, *physical seating discomfort* and *mental comfort* into the model, *type of seat* was no longer a significant predictor of the *mental comfort* indicating full mediation of *physical seating comfort* and *mental comfort*. *Seating discomfort* did not mediate the effect of *type of seat* on the experienced *mental comfort* and subsequently the experience of the *comfort* factor hospitality.

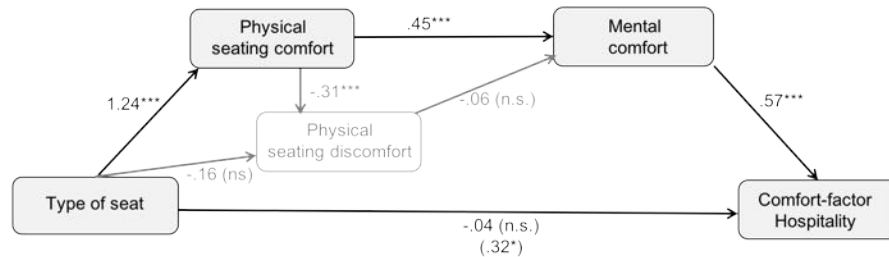


Figure 6.4. Mediation analyses in the effects of *type of seat* on the *comfort* factor of the experience of hospitality with *physical comfort*, *physical discomfort*, and *mental comfort* as mediator. Unstandardized coefficients and significance values ($p < .05$, $**p < .01$, $***p < .001$) are reported. The unstandardized coefficients in brackets indicate the effect ignoring the mediator.

The different roles of the two constructs in the effect of *type of seat* on the experience of hospitality provides additional support for the distinction between comfort and discomfort, next to the factor analyses that revealed physical seating comfort and physical seating discomfort as separate factors. Because no effect was found of *ambient sound* on the experience of hospitality, the role of *physical acoustic comfort* and *discomfort* in the effect of *ambient sound* could not be determined.

Desire to relax

The role of the *desire to relax* on people's perception of physical comfort and the experience of hospitality was examined. Firstly, multiple regression analyses showed that, in line with others (i.e. Kamp, Kilincsoy, & Vink, 2011; Hiemstra-van Mastrigt et al., 2017), the perceived physical comfort was related to the intentions of the subject. Regardless of the type of seat, the desire to sit significantly predicted the perceived discomfort of the restaurant seats (adjusted $R^2=.14$, $F(1,256)=42.34$, $p<.001$; $\beta = .38$, $p<.001$). The more people desired to sit, the more uncomfortable they perceived the seats.

To examine the moderating role of consumers' *desire to relax* in the effect of *type of seat* on the experience of hospitality factors, moderation analysis was performed using SPSS PROCESS (Preacher & Hayes, 2004). *Desire to relax* had no influence on the effect of *type of seat* on the experience of *comfort*.

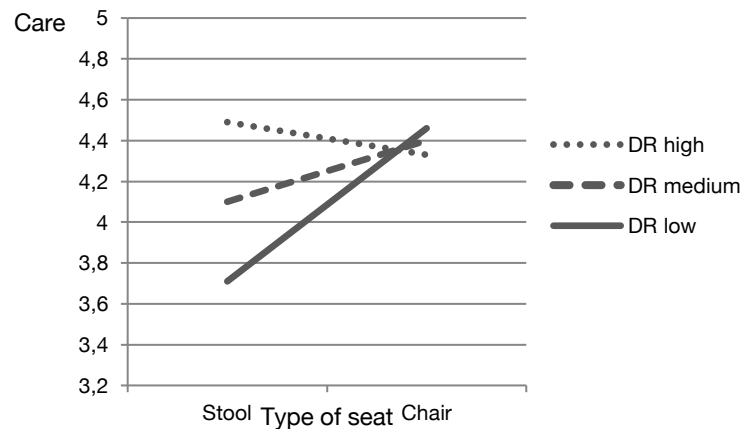


Figure 6.5. Moderation of desire to relax (DR) in the effect of type of seat on the experience of care.

However, incorporating *Desire to relax* (DR) into the model resulted in an effect of *type of seat* on the experience of *care* ($R^2=.04$, $F(3,240)=3.71$, $p<0.05$). As can be seen in Figure 6.5, for people with a low *desire to relax* (1 SD below mean) the experience of *care* in the restaurant was higher for people who sat on a chair than for people who sat on a stool ($b=.75$, $SE=.258$, $CI=.2438, 1.2599$). People who do not really desire to sit interpret the presence of uncomfortable stools as a less caring gesture of the organisation. For people with a medium or high desire to relax, the comfort of the seat did not affect their experience of *care*. For them the type of seat matters less; they are even happy with an uncomfortable stool.

Thus, in contrast to what was expected, the effect of *type of seat* on the experience of hospitality (*care* factor) had an effect on a different experiential factor of the hospitality than we expected (*care*

instead on *comfort*). Furthermore, the effect was stronger for people with a low *desire to relax* instead for people with a high *desire to relax*.

Desire to relax did not moderate the effects of *type of seat* on the other factors of the EH-Scale (*inviting*, *comfort* and *overall EH*). Further, it already appeared that there was no direct effect of *ambient sound* on the experience of hospitality: *Desire to relax* did not appear to be a moderator in this effect either.

Conclusion and discussion

The present research shows that attributes related to physical comfort that people perceive sensorial, in this case by touching (seating comfort) and hearing (acoustic comfort), impacts people's experience of hospitality in a service context. The effect of seating comfort was most evident. A comfortable chair, as opposed to an uncomfortable stool, has a positive impact on the experience of the *comfort* factor of people's experience of hospitality.

Despite the difference between the conditions in sound levels (2 à 3 dBA) and the difference in the perceived *physical discomfort*, the extra ambient sound was not perceived as really uncomfortable. This may be the reason that there was no direct effect of the ambient sound on the experience of hospitality. More research is needed to investigate further the influence of physical acoustic comfort on the experience of hospitality. Perhaps in situations with background sound over 75 dBA, the ambient sound will become more uncomfortable (Chen & Kang, 2016), which may result in a direct impact of *acoustic comfort* on the experience of hospitality. However, it will be a challenge to manipulate sound on uncomfortable levels in a natural way in a real-life setting.

However, the interaction between *type of seat* and *ambient sound* shows that when exposed to extra kitchen sound, the difference in the experienced hospitality (*comfort* factor) caused by the difference in the comfort of the seats disappears. Although the participants did not experience the extra kitchen sound as being particularly uncomfortable in combination with the seating comfort, it appeared uncomfortable enough to eliminate the positive effect of the chair on the comfort factor of the experience of hospitality.

The results provide strong evidence for the idea that embodied cognition is one of the mechanisms in affecting people's experience of hospitality. The mental comfort that people experienced in the restaurant fully mediated the effect of the physical comfort of the seats on the experience of hospitality, and specifically on the *comfort* factor. Thus, the embodied relationship between physical and mental comfort explains the effect of the type of seat on the experience of hospitality. Furthermore, the present study confirms the idea that physical comfort and discomfort are separate constructs. The present study shows that this applies not only to seating comfort but also to acoustic comfort. Moreover, the present study shows a distinction between physical comfort and mental comfort. This distinction is in line with the factors discomfort, comfort 1 (chair design) and comfort 2 (well-being) of Helander and Zhang (1997), and the physical and psychological items discerned by Da Silva Menegon et al. (2017). Helander and Zhang (1997) and Vink (2005) stated

that comfort is mainly associated with experience and emotion, whereas discomfort is associated with physical characteristics and feelings of pain, soreness, numbness and stiffness.

In the present study, only physical comfort played a role in the effect of type of seats on the experience of hospitality (*comfort* factor). However, people had been sitting for a relatively short period (ten to 39 minutes) on the seats, and results showed no relation between the duration people were sitting in the restaurant and physical discomfort. Helander and Zhang (1997) state that comfort is time-independent and discomfort increases over time. Based on their findings, discomfort may probably also play a role in the effect, but only when people use the seats for a more extended period, for example, in a working environment, or a dinner of several hours. Further research is necessary to test this assumption.

Next, the present research supports the findings of others (i.e. Kamp, Kilincsoy, & Vink, 2011; Hiemstra-van Mastriht et al., 2017) that the perceived physical comfort is related to intentions of the subject. The present research shows that, regardless of the type of seat, the more people desire to sit, the more uncomfortable they perceive the restaurant seats. Concerning the experience of hospitality, the study shows that individual characteristics influence how environmental service cues influence people's experience of hospitality. People's desire to relax played a role in the effect of *type of seat* on the experience of hospitality, but unexpectedly on the *care* factor. Probably people with a low *desire to relax* are more critical of the furniture, whereas people with a high *desire to relax* are even happy with an uncomfortable stool.

A second embodied relationship between physical support (seat support) and mental support (part of the *care* factor) may explain the effect that specifically applied to the *care* factor. After all, people with a low desire to relax experience less mental support when sitting on a stool (without physical sitting support) than when sitting on a chair (with physical sitting support).

For practitioners, the findings show that besides human behaviour, also ergonomic aspects contribute to the experience of hospitality. Offering comfortable furniture may increase the experience of hospitality. The findings may help in designing service environments which improve the hospitality performance of the organisation.

in brief

Chapter 5 demonstrated an embodied effect of warm drinks on the experience of care in a theatre. Likewise, Chapter 6 showed an embodied effect of seating comfort on the comfort factor of the experience of hospitality in a self-service restaurant. Although acoustic comfort shows no main effect on the experience of hospitality, the extra ambient (kitchen) sound cancels out the effect of seating comfort on the comfort factor. Seating comfort furthermore influences the experience of care, specifically for people with a low desire to sit.

The findings thus far show that there are environmental service cues that indeed influence people's experience of hospitality. Some of them activate associated mental metaphors, suggesting that embodiment is one of the mechanisms involved.

In the following and final empirical chapter, the inviting factor of the experience of hospitality is central. The involvement of embodied concept of ease of access is investigated. Ease of access is manipulated by visual transparency and timing and speed of the door opening.

7.

inviting: the role of transparency and door opening⁹

⁹ This Chapter is a modified version of the manuscript Pijls, R., Galetzka, M., Groen, B.H., & Pruyn, A.T.H. Come in please: A virtual reality study on transparency and door opening as embodied signals of the experience of hospitality. *Submitted for publication.*

Introduction

This paper focusses on the influence of design aspects of an entrance of a service organisation on the experience of hospitality, as part of a project on the embodied experience of hospitality. When a building is easily accessible, it is expected to give a more hospitable impression than when it takes more effort to go inside. Two design aspects of accessibility of the entrance were studied: its visual transparency and the way the entrance doors open to allow guests to enter.

The service industry is an industry that eminently understands the importance of being hospitable to guests. To a certain extent, the industry knows how to do that, thereby mainly focussing on hospitable attitude and behaviour of staff. However, service organisations still lack full understanding of what people experience as hospitable, especially when it comes to the role of the environment. There is a lack of knowledge on how to design a hospitable environment.

Thus far, little academic attention has been paid to the meaning of the concept of hospitality (Brotherton & Wood, 2008; Lynch et al. 2011). But few studies delved into the meaning of hospitality from a consumer's perspective, with a primary focus on service staff behaviour (Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Tasci & Semrad, 2016). Pijls et al. (2017) took a broader perspective by taking the whole servicescape into account, including the physical dimensions of the service environment. Their research resulted in the EH-Scale, consisting of three factors of the experience of hospitality in service environments: *inviting*, *care* and *comfort*. *Inviting* refers to the experience of inviting, openness and freedom, *care* is about experiencing empathy, servitude and acknowledgement. *Comfort* refers to feeling at ease, relaxed and comfortable.

The present study concentrates on the *inviting*-factor. How does a service organisation ensure that consumers feel invited? Service organisations pay a lot of attention to behaviour of staff in being hospitable, but the role of the physical environment is underexposed. The physical environment is particularly important in the first impression of a service organisation (Berry et al., 2006), a touchpoint in the service process where *inviting* is also relevant.

Hospitality and embodiment

Processing environmental stimuli starts with sensory perception. According to the theory of embodied cognition, a physical or bodily sensation activates a mental concept associated with that sensation (Lobel, 2014). Vice versa, most abstract mental concepts tend to be grounded in concrete physical experiences (Asch, 1958; Lobel, 2014; Murphy, 1996; Williams, Huang, & Bargh, 2009). Embodied cognition research has already provided support for relationships between for instance physical warmth and mental warmth (Williams & Bargh, 2008a), physical distance and psychological distance (Williams & Bargh, 2008b), verticality and power (Giessner & Schubert, 2007; Schubert, 2005), and physical weight and importance (Jostmann, Lakens, & Schubert, 2009). Furthermore, the experience of physical space impacts one's experienced psychological space or freedom (Meyers-Levy & Zhu, 2007; Okken et al., 2012).

Hospitality also may be a mental concept that is grounded in concrete physical experiences. To illustrate, the factor *care* (Pijls et al., 2017) may be related to the embodied concept of warmth. An experimental study on the influence of hot drinks and warm furniture on a theatre foyer provided support for this assumption by showing that physical warmth positively influences the experience of *care* by triggering the abstract metaphor of mental warmth (see Chapter 5). Furthermore, the experiential factor *comfort* may be related to the embodied concept of comfort; physical comfort is expected to activate mental comfort, which subsequently leads to the experience of hospitality. An experimental study in a self-service restaurant on the role of seating comfort and acoustic comfort showed that comfortable seating indeed triggered mental comfort, which in turn increased the *comfort* factor of the experience of hospitality (Pijls, Galetzka, Groen, & Pruyn, 2019).

Thus, for both the *care* factor and the *comfort* factor of the experience of hospitality embodied cognition seems to play a role. What about the *inviting* factor of the experience of hospitality? Is there also an embodied concept that is related to the experience of *inviting*?

Inviting and embodiment

The *inviting* factor of the experience of hospitality refers to the experience of inviting, openness and freedom (Pijls et al., 2017). It can be described as an implicit invitation to come in and to feel free to walk in without any restrictions. A related mental is the concept of ease of access; a service organisation can be easily accessible, in both a physical and a mental sense. According to the theory of embodied cognition, a service organisation that is physically open and easy to enter (physical ease of access) might lead to increased mental ease of access, which in turn influences the extent to which the service organisation is perceived as inviting.

Little is known about the embodied construct of ease of access. Ju and Takayama (2009) showed a relationship between physical approachability and feeling welcome. In their paper they describe that a doorman can offer to open a door for passers-by, thereby inviting them into a building. Ju and Takayama examined whether automatic doors are also able to convey this sense of welcome. Results showed that people interpret door movement as a gesture. A door that opened with a pause was judged as more welcoming than a door that opened and quickly closed. Furthermore, a door gesture ‘swinging open’ was experienced as more approachable than a door that opened and then closed. Higher door speed intensified this effect. It may be argued, that the way a door opens may be a way to express physical ease of access.

Another way to express physical ease of access is visual transparency. Although not yet labelled as an embodied concept, visual transparency in relation to ease of access has already been subject of research. Vilnai-Yavets and Koren (2013) found that transparency transferred accessibility to a product; a transparent packaging was perceived as easier to open than an opaque packaging. In an environmental context, Stamps (2010) showed that a space appears to be more open when the boundary has more visual permeability (represented by holes in solid surfaces). Pijls and Groen (2012) examined verbal and visual association methods to translate *inviting* into tangible sensory

characteristics in hotels. Results showed, that inviting was, amongst others, associated with visual transparency.

Together, the literature suggests that both door opening and visual transparency are ways to express the embodied (physical) part of ease of access.

Inviting and aesthetics

Literature suggests that both the overall design and the aesthetics of a building may influence people's experience of *inviting*. When designing service environments, attention to aesthetics is particularly important (Kirillova & Chan, 2018). Designers may focus on visual design, with the main objective of increasing attractiveness (Grewal, Baker, Levy, & Voss, 2003; Kirillova & Chan, 2018; Orth & Wirtz, 2014). Kim and Moon (2009) show that an attractive environment will lead to more positive emotions than an unattractive environment. Orth and Wirtz (2014) also acknowledge the considerable contribution of visual aesthetics of service environments in service evaluations. They state that an appealing service environment captures attention, triggers approach behaviours, strengthens consumer attachment and enhances the customer experience. These factors seem to be related to inviting, because they, just like the *inviting* factor of the experience of hospitality, entice people to come in.

Furthermore, consumers of hedonic services tend to be more sensitive to the aesthetic qualities of their environment than consumers of utilitarian services (Wakefield & Blodgett, 1994, 1999; Reimer & Kuehn, 2005). Hedonic service environments, such as hotels and theatres, meet pleasure needs and create emotional fulfilment, while utilitarian service environments, such as healthcare services and town halls, are predominantly instrumental or functional (Chitturi, Raghunathan, & Mahajan, 2018; Wakefield & Blodgett, 1999). A visually appealing environment therefore may be more relevant in a hedonic context, where people seek to fulfil pleasure needs, than in a utilitarian context where consumers are goal-oriented.

Visual transparency, one of the variables studied in the present research, was found to be positively related to the attractiveness of buildings (Gjerde, 2010; Jiang, Powers, Allison, & Vincent, 2017). Gjerde (2010, p.21) states that "new buildings should be visually accessible to enable use and activity to be understood and engaged with. ... Settings that have publicly accessible ground floors are generally perceived favourably". It is therefore expected that visual transparency also positively influences the experience of inviting because of the attractiveness of the building.

Present study

In the present study an experimental approach was used to investigate the effect of physical ease of access of a service organisation on the experience of hospitality. Literature suggests that physical ease of access is associated with openness (Stamps, 2010) and transparency (Vilnai-Yavets & Koren, 2013). Furthermore, a relationship between door gestures and approachability has been found (Ju & Takayama, 2009). However, literature on embodiment of mental constructs that could be

related to the *inviting* factor of the experience of hospitality is missing. Therefore, firstly a pre-test was performed 1) to explore whether *visual transparency* and *door opening* at an entrance as manipulation of physical access are related to people's experience of *inviting*, 2) to explore whether the embodied construct ease of access plays a role in this effect, and 3) to explore whether the visual aesthetics of the building plays a role in the effect on visual transparency on the experience of *inviting*.

Effects of *visual transparency* and *door opening* are jointly investigated, both in the pre-test and in the main study. In this way potential interactions could also be explored.

Pre-study

Method

The pre-study employed a 2 x 2 factorial design with *transparency* (transparent versus semi-transparent) and *door rotation speed* (slow versus normal) as between-subject variables. 137 External guests, visiting a university building to attend academic ceremonies, participated in the pre-study. The participants had never visited this building before.

Physical ease of access was firstly manipulated by the visual transparency of the entrance door of a university building where official ceremonies take place, by presenting the revolving door with either transparent glass or with a strip of adhesive semi-transparent plastic (width 90 cm) at eye level. Physical ease of access was further manipulated by the *rotation speed* of the revolving door at the entrance. The door turned either at normal speed (3.3 rotations per minute) or slow speed (2 rotations per minute).

The degree to which the service organisation was experienced as *inviting* was measured by the *inviting* factor of the EH-Scale (Pijls et al., 2017), consisting of items on experiencing openness, freedom and feeling invited, each rated on a seven-point Likert scale. *Mental ease of access* was measured by the approachability and transparency of the atmosphere of the service organisation in the lobby. The *visual aesthetics* of the building was measured by the visual attractiveness of the entrance.

Right after they had entered the building through the revolving door visitors were asked to participate in a study on their first impression of the hospitality in the lobby of the building. They were asked to sit down at a table and to fill out a short questionnaire, which took about 5 minutes. Figure 7.1 provides an impression of the setting.

Results

A one-way ANOVA revealed that participants who used the transparent door indicated that they could better see what was behind the door ($M=4.61$, $SD=1.47$) than participants who used the semi-transparent door ($M=3.80$, $SD=1.39$; $F(1,131)=8.82$, $p<.01$, $\eta_p^2=.063$). However, the transparent door did not make people perceive the entrance less as a barrier. Thus, the manipulation

of *transparency* was only partially successful, maybe because the manipulation was too subtle. Since the whole facade of the building was made of glass, the conditions of the manipulation may not have been sufficiently discriminatory.



Figure 7.1. Experimental setting (non-transparent condition): revolving door viewed from outside (a) and from inside (b), view upon entry the reception desk of the building (c), and (d) seats where participants filled out the questionnaire.

The manipulation of the *rotation speed* was successful. Participants using the revolving door turning at the slow speed perceived the rotation speed slower (rated on a scale from 1 to 7, $M=3.97$, $SD=1.93$) than the participants using the door turning at the normal speed ($M=2.77$, $SD=.67$; $F(1,131)=15.24$, $p<.01$, $\eta_p^2=.10$). They furthermore perceived the entrance more as a barrier ($M=3.70$, $SD=1.78$) than people using the door at the normal speed ($M=2.76$, $SD=1.59$; $F(1,131)=11.55$, $p<.01$, $\eta_p^2=.08$) and felt stronger that the door prevented them from continuing ($M=3.90$, $SD=1.86$) than people using the door rotating at the normal speed ($M=2.89$, $SD=1.70$; $F(1,131)=10.53$, $p<.01$, $\eta_p^2=.07$).

To examine the effect of transparency and door rotation speed on people's experience of hospitality, a two-way between-groups MANOVA was performed. No effects were found, neither of *transparency* nor of *rotation speed*.

Because the manipulation of visual transparency was not satisfactorily, the relation between the *perceived* transparency and the experience of *inviting* was also examined. *Perceived* transparency was measured by the degree to which people could see what was behind the door, which originally served as variable for the manipulation check. Multiple linear regression analyses showed that the *perception* of transparency positively influenced the experience of *inviting* (adjusted $R^2=.05$, $F(2,132)=4.83$, $p<.05$; $\beta=.19$, $p<.05$). People perceiving the entrance as more transparent experienced the organisation in the lobby of the building as more *inviting* than people who perceived the entrance as less transparent.

Mediation analyses using SPSS PROCESS (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010) showed that mental ease of access fully mediated the relationship between the perceived transparency of the entrance and the experience of *inviting* ($b=.11$, $SE=.051$, 95%CI [.0089,.2107]), supporting the idea that ease of access is an embodied construct that is involved in the experience of *inviting*. However, also the visual aesthetics of the entrance fully mediated the

effect of the perceived transparency of the entrance and the experience of *inviting* ($b=.13$, $SE=.05$, 95%CI [.0435,.2324]).

In a next step, structural equation modelling using SPSS AMOS V.26 was performed to examine whether mental ease of access and the visual aesthetics of the building mediated the effect of perceived transparency via separate routes (model 1, Figure 7.2a), or via a single route in which visual aesthetics is followed by the mental ease of access (model 2, Figure 7.2b). Model 1 yielded poor model fit ($\chi^2(2)= 33,72$, $p<.001$; CFI=.82; NFI=.82; TLI=.081; RMSEA=.34), but model 2 showed adequate model fit ($\chi^2(2)= 5,53$, $p>.10$; CFI=.99; NFI=.97; TLI=.95; RMSEA=.08). Thus, it seems that the two mediators are succeeding each other rather than representing separate routes; It is therefore hypothesised that a transparent facade is visually appealing, which leads to a mental accessibility of the organisation, which in turn results in an inviting experience.

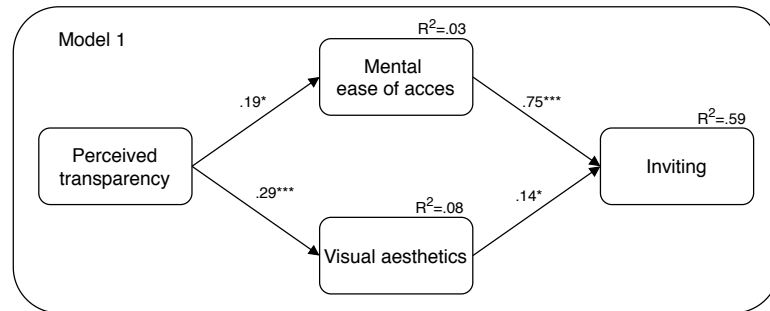


Figure 7.2a. Structural model 1 for the mediating effect of mental ease of access and visual aesthetics in the effect of the perceived transparency on the experience of *inviting* (* $p<.05$, ** $p<.01$, *** $p<.001$).

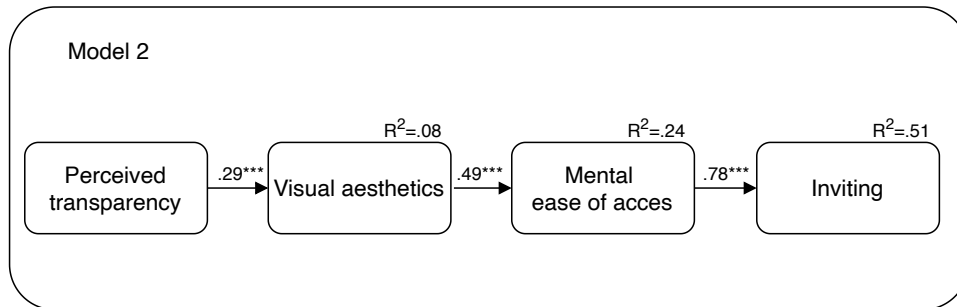


Figure 7.2b. Structural model 2 for the mediating effect of mental ease of access and visual aesthetics in the effect of the perceived transparency on the experience of *inviting* (* $p<.05$, ** $p<.01$, *** $p<.001$).

Conclusion and discussion

The results of the pre-test provide support for both the idea that transparency influences people's experience of *inviting* and for embodied cognition as underlying mechanism for this effect. However, the *perception* of the degree of transparency, not the actual degree of transparency, caused

the effect. The semi-transparent adhesive plastic on the door may have been too subtle. Moreover, the non-transparent situation was also rather transparent, because the whole facade was made of glass. Instead, the effect on *inviting* was caused by the *perception* of the transparency of the entrance. Perhaps factors such as the reflections in the glass facade, or the focus on either the entrance or the whole facade also influence the extent to which people perceived the entrance as transparent. Altogether, the results suggest using a more straightforward manipulation of transparency, such as a completely transparent or opaque facade.

Because the visual aesthetics of the entrance also seemed to be involved in the effect of transparency on the experience of inviting, it is worthwhile to examine the influence of the visual aesthetics of the building further. The results of the pilot study suggest one cognitive route, with successively the mediators *visual aesthetics* and *ease of access*.

Despite a successful manipulation, the results of the pre-test did not provide support for the influence of the *door rotation speed* on the experience of *inviting*. Maybe a revolving door, even at a normal rotation speed, is in itself not inviting. People may experience a revolving door as uncomfortable, because of the fear that the door will suddenly stop when you accidentally touch the door. For the main study it is worth testing another type of door.

Main study

The results of the pre-test encouraged further investigation of the role of the embodied concept of ease of access in the experience of hospitality, and specifically the experience of the *inviting* factor. To examine the effect of the actual instead of the *perceived* transparency, a more distinctive manipulation of transparency was necessary. Because this is difficult to realise in a real-world setting, a virtual reality environment was developed. In virtual reality the same entrance can be either fully transparent or fully opaque. As the pre-study also suggested to use a different type of entrance door, door opening was now manipulated by the opening of double automatic sliding entrance doors.

Moreover, it seems worthwhile to test the assumptions about the role of aesthetics in the effect of transparency on the experience of *inviting*. The pilot study suggested that a transparent facade is appealing, which leads to a mental accessibility of the organisation, which in turn results in an inviting experience.

Furthermore, the virtual environment was framed as either a hotel or a dental practice, to examine whether the hypothesized effects depend on the type of service environment. As the literature review shows, consumers of hedonistic services are generally more sensitive to the aesthetic qualities of their environment than consumers of utilitarian services (Wakefield & Blodgett, 1994, 1999). The aesthetics of an environment is therefore expected to be more important in a hedonic context, in which people seek pleasure, than in a utilitarian context, in which consumers are more goal-oriented.

The following hypotheses were formulated:

- H1 A transparent entrance, as opposed to an opaque entrance, positively influences the experience of hospitality (in particular the inviting factor).
- H2 Entrance doors that open quickly, as opposed to doors that open slowly, positively influence the experience of hospitality (in particular the inviting factor).

The supposed role of embodied cognition in the effects led to the following hypothesis:

- H3 The effects of physical ease of access (both of transparency and door opening) on the experience of hospitality are mediated by the experience of mental ease of access of the service organisation.

Regarding the role of visual aesthetics, the literature and the pre-study suggests that the visual aesthetic of the building mediates the effect of the transparent entrance on the experience of inviting. Furthermore, visual aesthetics seems to be more relevant in hedonic than utilitarian service environments literature (Reimer & Kuehn, 2005; Wakefield & Blodgett, 1994, 1999).

- H4 The effects of transparency on the experience of hospitality are mediated by the aesthetics of the building.
- H5 The mediating role of aesthetics in the effect of visual transparency on the experience of inviting is stronger in a hedonic service environment (hotel) than in a utilitarian service environment (dental practice)

Furthermore, the literature (Gjerde, 2010; Jiang, Powers, Allison, & Vincent, 2017) and the results of the pilot study suggest the aesthetics of the service environments to be a second mediator, preceding mental ease of access.

- H6 The effect of transparency on the experience of inviting is mediated successively by the visual aesthetics of the building and the mental ease of access.

Besides the contextual moderator (type of service environment), the design was also expanded with a second moderator to examine the role of individual differences. It was investigated whether people's need for control (Burger & Cooper, 1979; Gebhardt & Brosschot, 2002) influences the effects of transparency and door speed on the experience of hospitality. The effects on the experience of hospitality were expected to be stronger for people who have a high need for control, because these people are more likely to be affected by a constraint with respect to seeing through and moving through the entrance. This led to the following hypothesis:

- H7 The effects of physical ease of access (both of transparency and door opening) on the experience of inviting are stronger for people with a high need for control than for people with a low need for control.

Participants and design

An experimental study using a virtual service environment was designed to test the hypotheses. The experiment employed a 2 x 2 x 2 factorial design with *transparency* (transparent versus opaque), *door opening* (early and fast versus late and slowly) and *type of service environment* (hotel versus dental practice) as between-subject variables. The experiment was conducted over 18 different measuring moments in the spring of 2019. The sample (n=454) consisted of students and employees of a University of Applied Sciences (N=314), supplemented with employees of a health care organisation (N=42), a cleaning company (N=34), a public library (N=35), an insurance company (N=21) and a conference location (N=8). Mean age of the total sample was 32.4 years, 66% was female. Participants had normal or corrected-to-normal vision; the VR glasses could be worn with glasses. Gender, age, educational background and fear of the dentist did not influence the results. The reported vertigo was rather low (mean=2.38 on a scale from 1 to 7, $SD=1.72$) and when included as covariate in the analysis it did not affect the results. The participants were carefully distributed across the experimental conditions.

Experimental manipulation

An entrance and reception area that could either serve as a hotel or as a dental practice was created in virtual reality (see Figure 7.3). The portable virtual reality equipment was installed on site in an empty space with minimum dimensions of 7 x 12 meters. The equipment included an Acer AH101 HMD Mixed Reality VR Headset and a JBL E45BT headphone, both connected to a laptop with Mixed Reality software. This software continuously monitored the position of the participant and responded by giving instructions in VR, by opening the entrance doors upon arrival, and by having a virtual employee respond when participants approached the desk to register. Matching sounds for outside (traffic), the entrance (sounds of opening and closing of the doors) and inside (soft background music) were added to make the virtual environment as realistic as possible.



Figure 7.3. The entrance to the virtual service environment seen from the outside.

Transparency was manipulated by the visual transparency of the entrance of the virtual building. In the transparent condition, the entrance, including the two automatic access doors, consisted mainly

of glass. People were able to look inside the building while approaching it. In the opaque condition, the entrance and both access doors were made opaque by using frosted glass. Light could still enter the building, but participants were not able to look inside. Figure 7.4a and Figure 7.4b present the two experimental conditions, seen from the starting point of the scenario outside the building.



Figure 7.4a. The transparent entrance of the virtual service environment.



Figure 7.4b. The opaque entrance of the virtual service environment.

Door opening was manipulated by the timing and the speed at which the two automatic doors opened when participants approached the entrance. In the fast-opening condition the doors opened in three seconds, starting immediately when participants approached the doors. Both sets of doors opened smoothly after each other, so participants could walk right through. In the slow-opening condition the first door opened in 6 seconds, after participants had been standing still for 5 seconds at the entrance door. After entering, the first door closed first (in 4 seconds) and then the second automatic door opened (also opening in 6 seconds and closing in 4 seconds)¹⁰. Participants again had to wait before they could continue entering the building.

Type of service environment served as moderator and was manipulated by framing the virtual environment either as a hotel or as a dental practice. The company was called “The Golden Crown”, which fits in both service environments.

Measures

For all statements in this study the participants indicated on a seven-point Likert scale the degree to which they agreed with the statement (ranging from 1= strong disagreement to 7= strong agreement).

The *experience of hospitality* was measured by the EH-Scale (Pijls et al., 2017), consisting of 13 items measuring three factors of the experience of hospitality: *care*, *comfort* and *inviting*. The factor

¹⁰ The optimal settings for the moments and speed of the doors for both conditions were pre-tested to get the maximum difference between the conditions without the situations becoming unnatural.

care was measured by seven items on i.e. the experienced support, involvement and interest of the organisation (Cronbach's $\alpha=.90$). The factor *comfort* was measured by feeling comfortable, at ease and relaxed (Cronbach's $\alpha=.93$). The factor *inviting* consisted of items on experiencing openness, freedom and feeling invited (Cronbach's $\alpha=.83$). For the *overall experience of hospitality*, based on all 13 items, Cronbach's $\alpha=.94$.

The *mental ease of access* was measured by the two items used in the pre-study, supplemented by three items on the accessibility of the atmosphere of the organisation, the experience of low threshold and the ease with which participants dared to enter the hotel or the dental practice (5 items, Cronbach's $\alpha=.90$).

Participants' *need for control* was measured by the factor *control self* (the desire for determining your own life, 7 items, Cronbach's $\alpha=.60$) and the factor *relinquish control* (desire for not having to take decisions, 4 items, Cronbach's $\alpha=.65$) of the Dutch version of the Burger and Cooper's desirability of control scale (Gebhardt & Brosschot, 2002). In anticipation of the results, *need for control* had no effect on the results and therefore provided no support for Hypothesis 7.

Visual aesthetics was measured by the degree to which the building was beautiful and had an attractive, modern and luxurious atmosphere (4 items, Cronbach's $\alpha=.85$).

Additionally, demographics (gender, age and educational background) were registered. Eight questions served as manipulation checks, such as: 'when I entered the building, I could see what was behind the door', 'the entrance was transparent', 'the entrance doors hindered me in my walking pace' and 'I could easily walk inside'. Participants were further asked for advice on improving the customer experience at the hotel or dental practice, and to estimate how realistic the virtual scenario was experienced.

Procedure

Participants were told they would participate in a virtual reality study of 10 to 15 minutes about the first impression of a hotel lobby or waiting room of a dental office. Participants first filled out the informed consent, the *need for control* scale and the questions on demographics. Then they were instructed about the VR-task, took place on a seat and the VR glasses were installed. After a test walk to become acquainted with the devices, the actual scenario started. Participants received further instructions in VR by an avatar. In the case of the hotel they were told to imagine that they were searching for a location for a party and that they were looking for the general manager to discuss options. In the case of the dental practice they were told to imagine that they had an appointment with a dentist for an annual check-up.

The virtual scenario started outside the building (see Figure 7.5). Participants were then instructed to walk to the entrance of the hotel or dental practice, enter the building and register at the desk. When they arrived at the reception a virtual employee, represented as an avatar, told the participants to take place on an indicated seat

7-point scale, $M=5.94$, $SD=1.26$ versus $M=3.12$, $SD=1.90$, $F(1,450)=356.67$; $p<.001$; $\eta_p^2=.44$) and indicated that they could better look inside ($M=5.51$, $SD=1.67$ versus $M=2.18$, $SD=1.63$, $F(1,450)=466.08$; $p<.001$; $\eta_p^2=.51$). In the fast door opening condition, as opposed to the slow door opening condition, the participants indicated that the doors hindered them less in their walking pace ($M=3.10$, $SD=1.89$ versus $M=5.47$, $SD=1.78$, $F(1,450)=188.11$; $p<.001$; $\eta_p^2=.30$) and they could enter the building more easily ($M=4.96$, $SD=1.73$ versus $M=2.99$, $SD=1.77$, $F(1,450)=146.87$; $p<.001$; $\eta_p^2=.25$).

Correlations factors EH-Scale mental ease of access and aesthetics

Table 7.1 shows the overall correlations between the factors of the experience of hospitality scale (EH-Scale), mental ease of access and visual aesthetics. The factors *care*, *comfort* and *inviting* of the EH-Scale are related, but the correlations between the factors are lower than the threshold of .85 (Kline, 2005), indicating discriminant validity. Additionally, all hospitality factors significantly correlate with mental ease of access and visual aesthetics. Based on these correlations, mental ease of access does not seem to relate particularly to the experience of *inviting*, as was expected, but also to the experience of *comfort* and *care*.

Table 7.1. Pearson Correlation between the factors of the EH-Scale, mental ease of access and visual aesthetics.

Variable	1	2	3	4	5
Care					
Comfort	.68				
Inviting	.68	.77			
Overall EH	.93	.87	.87		
Mental ease of access	.59	.73	.73	.73	
Visual aesthetics	.60	.64	.75	.72	.52

Effects of transparency door opening and type of service environment

A 2 (transparency) x 2 (door opening) x 2 (type of service environment) MANOVA was performed to test hypotheses 1 and 2. For transparency the MANOVA was significant (Wilks's $\Lambda=.93$, $F(3,444)=11.97$, $p<.001$, $\eta_p^2=.08$). Univariate ANOVA's showed effects of transparency on all hospitality factors. Transparency positively influenced the *overall EH* ($F(1,446)=13.45$, $p<.001$, $\eta_p^2=.03$), the *inviting* factor ($F(1,446)=30.22$, $p<.001$, $\eta_p^2=.06$), the *comfort* factor ($F(1,446)=12.72$, $p<.01$, $\eta_p^2=.03$) and the *care* factor ($F(1,446)=4.29$, $p<.05$, $\eta_p^2=.01$). As can be seen in Table 7.2, the transparent entrance provided a more hospitable experience compared to the opaque entrance: the organisation was experienced as significantly more *inviting*, *caring* and *comfortable*; the effect of transparency was most pronounced on the *inviting* factor, which corresponds to Hypothesis 1.

However, transparency also significantly affected the experience of the other hospitality factors, which was also suggested by the correlations presented in Table 7.1.

Regarding the door opening, the results did not show any significant effect on any of the hospitality factors, which was in line with the pre-test (p 's $>.10$). This means no support for Hypothesis 2. Also, no interactions were found between transparency and door opening. Because the absence of effects, door opening has not been included in further analyses.

Mediation of mental ease of access and visual aesthetics

Structural equation modelling (SEM) using SPSS AMOS v.26 was used to test whether mental ease of access and visual aesthetics mediated the effects of transparency of the experience of hospitality factors. Separately for the hotel and the dental practice, a structural model was tested using maximum likelihood estimation, with transparency as an exogenous variable, mental ease of access and visual aesthetics as mediators and the experiential factors of hospitality of *inviting*, *care* and *comfort* as endogenous variables. Firstly, full mediation models were tested, based on the findings in the pre-test. For both the dental practice and the hotel, this resulted in a poor model fit. The models were modified by not only assuming full mediation effects but allowing partial mediations as well. Figure 7.6 and 7.7 present the significant (standardized) estimates of the structural models. Examination of the overall fit indices of the structural models indicated a good fit of both models. The criteria of a non-significant Chi-square, CFI > 0.95 , NFI $>.95$, TLI $>.95$ and RMSEA <0.05 for a good model fit (Marsh et al., 2004; Matsunaga, 2010) were met. Details on the fit indices are presented in Table 7.3.

Table 7.2. Effects of transparency on EH-factors.

EH-factor	Mean (SD) transparent	Mean (SD) opaque	F	Significance (p)	Partial Eta Squared
Overall EH	5.26 (.88)	4.90 (1.19)	13.45	.00	.03
Inviting	5.44 (1.06)	4.79 (1.42)	30.22	.00	.06
Comfort	5.31 (1.14)	4.88 (1.42)	12.72	.00	.03
Care	5.16 (.91)	4.95 (1.20)	4.38	.04	.01

Table 7.3. Model Fit indices for both structural models (hotel and dental practice). CFI = Comparative Fit Index; NFI= Normed Fit Index, TLI= Tucker Lewis Index; RMSEA: Root Mean Square Error of Approximation.

Model	χ^2	DF	P-value	CFI	NFI	TLI	RMSEA
Dental practice	.129	2	.94	1.00	1.00	1.02	0.00
Hotel	.741	2	.69	1.00	1.00	1.02	0.00

The models further show that the visual aesthetics of the building and mental ease of access of the organisation in both service environments indeed mediated the effect on the *inviting* factor, providing support for Hypothesis 3 and Hypothesis 4. However, visual aesthetics and mental ease

of access mediated also the effects on the *comfort* factor and the *care* factor. The embodied concept of ease of access may be not only conceptually close to the experience of inviting, but also to the other factors of the experience of hospitality. On second thought, it is plausible that mental ease of access makes you feel invited, but also makes you feel comfortable and provides the experience that the organisation takes care of you. The same accounts for visual aesthetics; an appealing building is not only inviting, but apparently also expresses care and make people feel comfortable.

Furthermore, the models provide support for Hypothesis 6. Figures 7.6 and 7.7 show that a transparent entrance leads to through successively the visual aesthetics of the building and mental ease of access, to an experience of *inviting* (and also *comfort* and *care*). Tables 7.4 and 7.5 show the statistical details of the indirect effects of the models. However, although there is this hypothesised route from visual transparency through successively visual aesthetics and mental ease of access to the three hospitality factors, there appear to be also other routes. This suggests that not only embodied cognition, but also other mechanisms may be involved.

Furthermore, although the effects in the hotel and the dental practice are largely similar, there are some differences. As Figures 7.6 and 7.6 and Tables 7.4 and 7.5 show, the role of the mediators to some extent differs between the two service environments. At the dental practice, the two mediators fully accounted for the effects of transparency on the experience of *care* and *comfort*. However, regarding the effect on *inviting* there was, next to the indirect effect, also a direct effect. At the other hand, in the hotel, the mediators fully mediated the effects on *inviting* and *comfort*, but only partially mediated the effects on *care*. The direct effect on *care* at the hotel is negative, indicating that the transparent entrance increased the experience of *inviting* and *comfort*, but decreased the experience of *care*. A transparent building may feel less sheltered. For the experience of *care*, a more closed environment may be more effective. Apparently, this is more relevant in a hotel lobby than at a dental practice.

Regarding the influence of visual aesthetics, we supposed that it might be more relevant in the environment hotel than in a dental practice (Hypothesis 5). However, the findings provide no evidence for that. Because in a dental practice, visual aesthetics fully mediated the effect of transparency on mental accessibility, while in a hotel it was only partially mediated, visual aesthetics seems even more relevant to a dental practice than to a hotel.

To conclude, regarding the squared multiple correlation for the endogenous variables, the results of the SEM indicated that the model for the dental practice explains 74% of the total variance in *inviting*, 66% in *comfort* and 59% in *care*. For the model for the hotel this was 69%, 51% and 43%, respectively. This implies that visual transparency, visual aesthetics of the building and the mental accessibility of the organisation considerably contribute to the experience of hospitality.

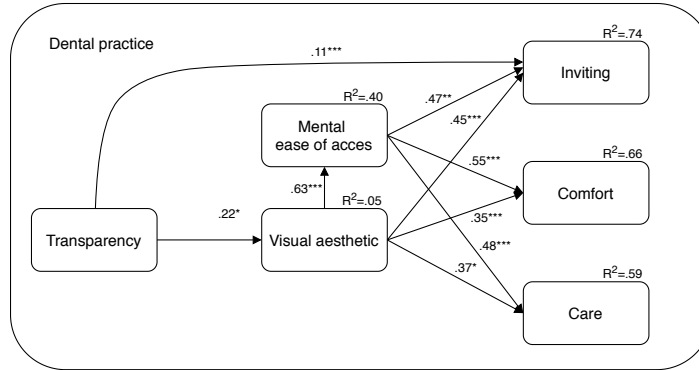


Figure 7.6. Structural model for the mediating effect of mental ease of access and visual aesthetic in the effect of the perceived transparency on the experience of inviting, care and comfort at the dental practice. Standardised regression weights ($^*p < .05$, $^{**}p < .01$, $^{***}p < .001$) and squared multiple correlations are given.

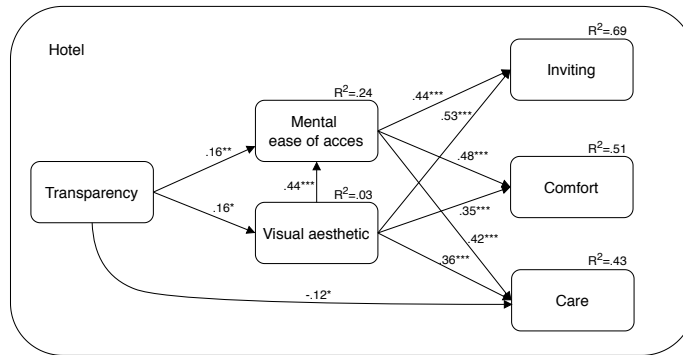


Figure 7.7. Structural model for the mediating effect of mental ease of access and visual aesthetics in the effect of the perceived transparency on the experience of inviting, care and comfort at the hotel. Standardised regression weights ($^*p < .05$, $^{**}p < .01$, $^{***}p < .001$) and squared multiple correlations are given.

To summarise, door opening speed did not influence the experience of hospitality. However, visual transparency positively influences the experience of both *inviting*, *care* and *comfort*. Mental ease of access mediated all effects, albeit that only partly mediation was found for the effect of transparency on the experience of *inviting* at the dental practice, and on the experience of *care* at the hotel. Furthermore, in contrast to our expectations, visual aesthetics seems to be more relevant for the experience of hospitality at a dental practice than at a hotel. Finally, the structural models with appropriate fit showed that visual transparency influences the experience of hospitality through different routes, and also through different mechanisms. Embodied cognition seems one mechanism involved. However, the model also suggests other (disembodied) mechanisms.

Table 7.4. Mediated effects for visual aesthetics + mental ease of access – Dental practice (n=237). Unstandardized effects with standard errors between brackets and bootstrap lower bounds and upper bounds (1000 samples). ***p <.001

Endogenous variable	Standardized indirect effect	Lower bound	Upper bound	Type of mediation
Inviting	.188*** (.053)	.080	.294	Partial mediation
Comfort	.168*** (.063)	.094	.344	Full mediation
Care	.156*** (.110)	.181	.619	Full mediation

Table 7.5. Mediated effects for visual aesthetics + mental ease of access – Hotel (n=217). Unstandardized effects with standard errors between brackets and bootstrap lower bounds and upper bounds (1000 samples). ***p <.001

Endogenous variable	Standardized indirect effect	Lower bound	Upper bound	Type of mediation
Inviting	.166*** (.052)	.091	.296	Full mediation
Comfort	.204*** (.047)	.085	.267	Full mediation
Care	.378*** (.043)	.078	.245	Partial mediation

General conclusion and discussion

The experience of hospitality is still an unexplored area. This research can be seen as one of the first studies examining the influence of environmental factors on the experience of hospitality. With the recent technology of virtual reality, it is possible to perform experiments on variables such as door opening and visual transparency of buildings. This paper shows that design characteristics of an entrance influence people’s experience of hospitality. The results show in particular that transparency of an entrance of a building has an impact on people’s experience of hospitality, whereas the speed of opening doors has no effect. Furthermore, Virtual Reality appears a suitable technique to combine advantages of both field experiments, because they are realistic, and laboratory experiments, because of the controlled environment. Furthermore, VR is capable of manipulating variables, such as visual transparency and door opening speed, which is in practice hardly possible to investigate experimentally.

Based on embodied cognition theory, it was expected that transparency, which is an expression of physical ease of access, would specifically lead to a more inviting service organisation by triggering mental ease of access. In line with these expectations, the effect on the *inviting* factor was indeed the strongest effect. However, transparency also improved, through mental ease of access, the experience of the other hospitality factors *comfort* and *care*. This is understandable; mental ease of access makes you feel invited, but also makes you feel comfortable and provides the experience that the organisation takes care of you and is willing to help you. Ostensibly, the embodied concept of ease of access is conceptually close to the entire concept of hospitality.

The results suggest that embodied cognition is involved in the effect of transparency on people's experience of hospitality, but that it is not the only mechanism. Besides the effects mediated by mental ease of access, the results showed also effects directly impacting the experience of *inviting* (dental practice) or *care* (hotel), and indirect effects via the visual aesthetics of the entrance.

The mechanisms explaining the effects may, amongst others, depend on the service contexts. Transparency seems also directly affect the experience of inviting at the dental practice. While modern hotels tend to be transparent, healthcare environments are usually less transparent, probably for privacy reasons. Transparency at the entrance of the dental practice may have been a surprise directly leading to feeling invited, without firstly triggering mental ease of access. The disembodied effect can also be due to the fact that the organisation simply shows itself without provoking a physical reaction. This may also be inviting.

At the hotel, the transparency directly impacted the experience of hospitality, which involved a negative effect on the experience of *care*. An environment may be caring if it 'embraces' and protects its guests. A transparent facade seems the opposite because it is open and accessible, therefore this may have caused the negative impact on the experience of *care*.

Furthermore, the literature suggested that the aesthetics of the building would be more relevant in a hedonic environment (hotel) than in a utilitarian environment (dental practice), because people in a hedonic environment are more sensitive to the aesthetic qualities because of the pleasure it generates (Wakefield & Blodgett, 1994, 1999; Reimer & Kuehn, 2005). However, the current study suggests the opposite: aesthetics seems to contribute more to the experience of hospitality in the dental practice than in the hotel. Possibly, the attractiveness of the building in this case did not just trigger the pleasure of an appealing environment at the dental practice, as was suggested by the literature. The aesthetics particularly led to a more comfortable and cared-for feeling at the dental practice, which is relevant in a service that people usually do not look forward to. Visual aesthetics was in this study measured by the perceived luxury, modernity, attractiveness and beauty of the building; Luxury and modernity may convey quality and trust, and the beauty of the surroundings may be an indication that the organisation cares for its customers. After all, in the dental practice, the aesthetics had especially more influence on the perception of *care* and *comfort*. Further research is needed to examine how this works in more neutral utilitarian service environments, such as town halls or bank services.

Besides embodied cognition, what other mechanism(s) may be involved? Li, Zhang and Laroche (2019) showed results comparable to our study, but instead of effects of the aesthetics of a building, they found effects of the attractiveness of service employees. An experimental lab study in a restaurant setting and a field study in a Chinese shopping mall showed that the physical attractiveness of service employees predicts customers' social distance perceptions, which in turn affects customer satisfaction and service quality perceptions. These social distance perceptions resemble our construct of mental ease of access, which gives strength to our findings that attractiveness leads to mental ease of access. The studies performed by Li et al. (2019) were amongst others, based on the selective accessibility process model (Mussweiler, 2003). According to that

model, similarity testing takes place by judging how well you and the other fit together, which stimulates a 'move-towards process' (Li et al., 2019). So, more similarity leads to a smaller social distance. Perhaps this also applies to how we relate to the building of an organisation. A transparent building may be more attractive, which increases people's experienced fit with the service organisation and subsequently leads to more mental ease of access.

Door opening, the other expression of physical ease of access, did not affect the hospitality associated with the service organisation. An entrance that allows to walk through easily appears not more inviting than an entrance that hinders the walking pace. This outcome does not match the results of Ju and Takayama (2009), who found that doors that automatically open are judged as more welcoming. However, Ju and Takayama measured the hospitality (welcoming) of the door itself, while in our studies, the hospitality of the service organisation behind the doors was measured. Additionally, Ju and Takayama asked the participants explicitly to judge the extent to which the door was welcoming, while in our studies, the experienced hospitality was measured implicitly. However, an open question at the end of our main study showed a considerable number of participants who suggested to increase the door opening speed to improve the hospitality, which is in line with the findings of Yu and Takayama (2009). It seems that people are convinced that a smooth opening door is a hospitable gesture, but implicit measures indicate that this belief is not correct. This emphasises the importance to use implicit methods to measure unconscious processes (Dijksterhuis & Nordgren, 2006; Kahneman, 2012).

Furthermore, perhaps the ease with which people enter the building doesn't matter that much when they enter a hotel or a dentist's office. It's imaginable that a quick entry is appreciated if you are in a hurry, or if you are already familiar with the building. However, in our study, participants had no time pressure and visited the virtual building for the first time. Holding back for a while before entering a building in new situations can even be appreciated because then people have some time to absorb the new building they are about to enter. A next step would be to investigate whether door opening might affect the experience of hospitality when people are in a hurry or know the building well.

The exploratory nature of the visit to the virtual service environment, in which participants are primarily asked to form an impression of the atmosphere, may also explain the absence of a moderating effect of people's need for control. In this imaginary situation, one might not need to have control over one's environment, even for those who normally do need control.

In conclusion, the way that a consumer's experience of hospitality is created is a complex process. Multiple processes seem to take place simultaneously. However, although more research is needed to understand further the cognitive processes involved, this study shows that organisations are able to influence the experience of its visitors by characteristics of their building. Manipulation of the transparency and visual aesthetics in general influences the hospitality that visitors experience when entering the building. This is relevant for amongst others architects, designers, marketeers and the service industry in general.

in brief

Chapter 7 was the final chapter of part two of the dissertation, which addressed the experimental research on the effects of environmental cues on the experience of hospitality. Firstly, Chapter 5 showed an embodied effect of warm drinks on the experience of care in a theatre. Secondly, Chapter 6 demonstrated an embodied effect of seating comfort on the experience of comfort in a self-service restaurant. Finally, Chapter 7 showed an embodied effect visual transparency on the experience of both inviting, comfort and care, in both a hotel and a dental practice. Door opening speed did not influence the experience of hospitality. Furthermore, also the visual aesthetics of the building served as a mediator in the effects, especially at the dental practice.

Finally, Chapter 7 showed that visual transparency influences the experience of hospitality through different routes, involving different mechanisms. Embodied cognition seems one mechanism involved. However, the model also suggests other disembodied mechanisms.

In part three, the theoretical and practical contributions of the research are discussed. Chapter 8 reflects on the theoretical implications of the research, and Chapter 9 takes a broader perspective on the role of the environment in the experience of hospitality in services.

part 3

theoretical and
practical
contributions

8. **general discussion**

Introduction

Hospitality is part of our daily lives. It comes close to our basic psychological need to feel connected to other people. Both privately and in business this is important to us. As we saw in Chapter 2, service organisations, both inside and outside the hospitality industry, acknowledge that hospitality is currently an essential element in the delivery of services. However, organisations lack tools to steer on the hospitality they offer to their customers.

Chapter 1 showed that the academic attention for hospitality has been growing in recent decades. Nevertheless, the concept of hospitality is still poorly defined (Brotherton, 1999; Lynch et al., 2011; Ottenbacher et al., 2009). Especially the understanding of the concept from the viewpoint of consumers is very limited. Moreover, the few studies that looked into hospitality from the consumer perspective mainly concentrated on hospitable behaviour of service staff (Ariffin & Maghzi, 2012; Blain & Lashley, 2014; Sim, Mak, & Jones, 2006; Tasci & Semrad, 2016). The contribution of the environment, which constantly and largely unconsciously affects us, has received hardly any attention. This dissertation aims to increase our understanding of the influence of the service environment on the experience of hospitality. A multidisciplinary approach is taken by combining knowledge from the fields of hospitality, services marketing and psychology.

The first aim of the dissertation is to understand and measure what consumers experience as hospitality in service environments. This was addressed in Part 1 of the dissertation (Chapters 1-3). The second aim is to find out what particular environmental service cues of the service environment may contribute to the experience of hospitality and to show whether the effects of these environmental service cues are embodied (Chapters 4-7).

The present chapter gives an overview of our results and discusses the contribution of the thesis to theory. Firstly, the main findings concerning the understanding and measurement of the hospitality experienced by consumers are presented and discussed. Then, the main results of the experimental research on the influence of the environmental service cues on the experience of hospitality are addressed. Specific attention is given to the role of the mechanism of embodied cognition in the experience of hospitality. Then, limitations and directions for future research are discussed. The chapter ends with a general conclusion.

Understanding the experience of hospitality

The scientific attention for the phenomenon of hospitality has grown enormously over the last decades. There is a large body of literature and the subject is approached from various disciplines. However, despite the large number of articles on hospitality, there is hardly any empirical study on what consumers experience as hospitality. We found this remarkable. After all, how can we define hospitality without first understanding what people experience as hospitable?

This lack of understanding may be the reason why organisations are still struggling to implement hospitality properly in their organisations. Chapter 2 shows that, according to service experts,

hospitality is important for the quality of service and that the service sector would benefit from applicable knowledge to improve the hospitality performance of their organisations.

In search for understanding the meaning of hospitality to consumers, qualitative research with both service experts and service consumers of various service environments (Chapter 2) showed that the essence of the experience of hospitality is the feeling of getting personal attention. This personal attention can be experienced through six proposed experiential dimensions of hospitality: *welcome*, *at ease*, *empathy*, *servitude*, *acknowledgement* and *autonomy*.

Through quantitative survey research, presented in chapter 3, which was carried out in different types of service environments, the conceptualization of the experience of hospitality, which originally consisted of the six dimensions, was validated. With help of factor analysis, the six dimensions have been further reduced to three main factors. Aspects that originally belonged to the dimensions *welcome* and *autonomy* have merged into the *inviting* factor. The dimensions *empathy*, *servitude* and *acknowledgement* together formed the *care* factor. Finally, aspects of the dimension *at ease* became the *comfort* factor. To summarise in one sentence, consumers of service organisations experience hospitality when they feel invited, feel comfortable, and experience that the organisation takes care of them.

It was suggested that these three factors are relevant in any service environment, but the relative importance of the three factors may depend on the type of service environment. Chapter 3 confirms this idea by showing that the *inviting* factor was relatively more important for the overall experience of hospitality in a catering company than in a hospital. Conversely, in a hospital the *care* factor was more important than in a catering company.

When comparing our findings with the few empirical studies on the meaning of hospitality to consumers, we find particular similarities with the *care* factor. Tasci and Semrad (2016), for instance came up with aspects such as generous, friendly, polite, courteous and respectful, Ariffin and Maghzi (2012) mention aspects such as 'treated with respect', 'feel like an important person' and 'genuine needs to please and care for their guests'. Furthermore, Blain and Lashley (2012) refer to 'the desire to put guests before yourself', 'the desire to make guests happy' and 'the desire to make guests feel special'.

However, the *inviting* factor, which in our research appears the most influential factor for the total experience of hospitality, is recognised in the literature by the word 'welcome': 'feeling welcome' (Brotherton, 2005), 'welcoming' (Tasci & Semrad, 2016) and 'given a warm welcome at the doorstep' (Ariffin & Maghzi, 2012). Our qualitative studies (Chapter 2) showed that 'welcome' is, together with personal attention, the word most commonly associated with hospitality. We initially expected 'welcome' would be part of the *inviting* factor. However, the quantitative studies described in Chapter 3 showed that welcome not only concerns the *inviting* factor, but also the *comfort* factor and the *care* factor. Welcome is a word that covers much of the meaning of the experience or hospitality. It is thus more synonymous with hospitality than a reference to a particular facet of hospitality.

The *comfort* factor is also scarcely mentioned in other empirical studies. Ariffin & Maghzi (2012) mentioned comfort with regard to the hotel room, which was the only aspect they considered besides the behaviour of the employees. Brotherton (2005, 2008) also mentions comfort as an aspect of hospitality, especially when it comes to physical aspects. Moreover, the literature review in Chapter 1 also showed that comfort was part of some descriptions of hospitality. Hepple et al. (1990) referred to ‘providing psychological and physiological comfort’, King (1995) described hospitality amongst others by ‘enhancing comfort and well-being’. Burgess (1982) describes hospitality as, among other things, ‘the feeling of safety and comfort created by the physical structure’, in which he also refers specifically to physical aspects.

Together this suggests that the factor that we call the *care* factor relates mainly to the hospitality aspects experienced when consumers come into contact with the service staff. The experience of the *comfort* factor, and perhaps also the *inviting* factor, seems to be caused mainly by the physical environment. Our experimental studies indeed show that the *comfort* factor and the *inviting* factor are influenced by aspects of the physical environment. However, we further show that physical aspects also contribute to the *care* factor, indicating that the experience of *care* is not only limited to the behaviour of service employees.

Compared to existing descriptions of the experience of hospitality that are only based on the interaction with service employees, this dissertation offers an enriching definition of the experience of hospitality. In addition to the *care* factor, which is in line with descriptions in previous research, the present research presents the *comfort* factor and an *inviting* factor, which reach beyond just feeling welcome.

In conclusion, this dissertation contributes to the conceptualisation and operationalisation of the concept of the experience of hospitality, which appears a multidimensional construct with different factors. The identification of these distinct facets (*inviting*, *care* and *comfort*), makes the concept more comprehensible. Moreover, the approach of taking a broad perspective by looking for aspects at a more abstract level of the organisation, which not only includes service staff behaviour but also environmental factors, has led to a more complete description of hospitality from the perspective of the consumers of the services.

Measuring the experience of hospitality

Understanding of the concept of the experience of hospitality is a prerequisite for the development of an instrument for its measurement. The detailed amount of aspects that have been related to the experience of hospitality, which were presented in Chapter 2, formed the basis for the development of the EH-Scale. Chapter 3 described the thorough development process of the EH-Scale, which resulted in the validated compact EH-Scale that assesses the experience of hospitality on a corporate level and is applicable in any service setting to measure how consumers experience the hospitality that is offered (Pijls et al., 2017). The scale consists of 13 items on the three experiential factors of the experience of hospitality. *Inviting* refers to the experience of openness, freedom and feeling

invited. *Care* refers to attributes such as experiencing involvement, effort, interest, relief, importance and support. *Comfort* is about feeling at ease, relaxed and comfortable. The three factors together explained 64% of the variance of the overall experience of hospitality, indicating a satisfactory coverage of the construct. The *inviting* factor made the largest contribution and therefore appears the most predictive factor for the experience of hospitality.

Taken together, the series of qualitative and quantitative studies produced an instrument to measure consumers' experience of hospitality in any service context. The EH-scale is unique. It differs from other scales developed to measure hospitality, because those scales are usually specifically developed for the hospitality industry, and are aimed at measuring the hospitable behaviour of employees (Ariffin & Maghzi, 2012; Biswas-Diener, Kushlev, Su, Goodman, Kashdan, & Diener, 2019; Blain & Lashley, 2014; Sim et al., 2006; Tasci & Semrad, 2016).

Furthermore, Chapter 3 demonstrates that although there is some overlap, the EH-Scale also distinguishes itself from other constructs that evaluate service provision, such as satisfaction and behavioural intention.

The EH-Scale is not only a useful instrument for researchers and practitioners but was above all a necessary condition to investigate the effects of environmental manipulations on the perception of hospitality, the second part of this dissertation. It is good to bear in mind, that we therefore aimed for a scale with separate factors that differed as much as possible to cover the width of the construct, and also because we assumed that particular environmental service cues would influence one factor but not another.

Effects of environmental service cues

The experimental studies presented in this dissertation showed that several environmental service cues in the service environment positively impact the experience of hospitality: hot drinks and warm furniture in a theatre (Chapter 5), comfortable seats in a self-service restaurant (Chapter 6) and a transparent entrance of a hotel or dental practice (Chapter 7). However, other environmental service cues did not show to affect the experience of hospitality: the kitchen sounds in the self-service restaurant (Chapter 6) and the door opening at the entrance of both the revolving door at the university building and the double sliding doors in the virtual reality study (Chapter 7).

Which environmental manipulations did and which did not lead to effects on the experience of hospitality? The absence of a hypothesised effect means that the particular cue is either not related to the experience of hospitality or did not show up because of methodological characteristics. A closer look at the manipulation checks of the experiments suggests that the perceived differences between the levels of the independent variables should not only be significant to have an effect on the experience of hospitality but should also be of considerable size (effect size $> .15$). As Figure 8.1 shows, all manipulations in the experiments were significant, however only the temperature of drinks and furniture, the seating comfort and the visual transparency in the VR-experiment the manipulations caused an effect. These are the variables whose manipulations differed the most.

	Independent variable	Manipulation check	Effect size manipulation check	Effect on EH
Study Care Chapter 5	Temperature of drink	Significant difference between perceived temperature of hot and cold drinks ($p < .001$)	$\eta_p^2 = .72$	✓
	Temperature of furniture	Significant difference between perceived temperature of heated and non-heated cushions ($p < .001$)	$\eta_p^2 = .19$	✓
Study Comfort Chapter 6	Seating comfort	Significant difference between perceived comfort of chairs and stools ($p < .001$)	$\eta_p^2 = .17$	✓
	Ambient sound	Significant difference between perceived discomfort of normal and extra kitchen sounds ($p < .05$)	$\eta_p^2 = .02$	✗
Pilot study Inviting Chapter 7	Visual transparency	Significant difference between perceived visual transparency of transparent and semi-transparent door ($p < .01$)	$\eta_p^2 = .06$	✗
	Door rotation speed	Significant difference between perceived hampering of continuation at normal and slow speed ($p < .01$)	$\eta_p^2 = .07$	✗
Main study Inviting Chapter 7	Visual transparency	Significant difference between perceived visual transparency of transparent and opaque entrance ($p < .001$)	$\eta_p^2 = .51$	✓
	Door opening speed	Significant difference between perceived hampering of continuation at fast and slow door opening ($p < .001$)	$\eta_p^2 = .30$	✗

Figure 8.1. Overview of the results of the manipulation check and the presence or absence of an effect on the experience of hospitality (EH) for the independent variable that were studied.

Although the perceived levels of the manipulations of ambient sound were significantly different (Chapter 6), the difference between two levels of ambient sounds was probably not distinctive enough. It is likely that the extra kitchen noise was not loud enough to sufficiently differ from the condition without extra kitchen noise to cause an effect on the experienced hospitality. In the setting of the experiment, the extra kitchen sound was set to a maximum level at which people were unaware that these sounds were artificial. To further explore the influence of ambient noise on people's experience of hospitality, a different type of ambient noise should be chosen, where the noise level can be set higher.

Furthermore, as we already concluded after the pilot study, the manipulations of visual transparency and door rotation speed initially were too subtle. In the main study in which we created an environment in virtual reality, we were able to manipulate both visual transparency and door opening more distinctively. For visual transparency, this resulted in effects on the experience of hospitality. However, for the speed of the door opening, this was not the case, despite the adequate effect size. Thus, the absence of an effect of door speed seems to have no methodological cause. Therefore, door speed seems not related to the experience of hospitality. These findings underline once again that experiments must be carefully designed. The operationalisation of the independent variable, the manipulation, must be chosen and pre-tested carefully.

In addition to a sufficiently distinctive manipulation of the studied attributes, it may also matter whether the attribute is relevant. For example, if people have to concentrate on a task, background noise can quickly become disruptive and unpleasant, whereas during a city walk the background noise level is usually less critical. Or, when you are nervous at the hospital about an appointment

with a doctor, a reassuring glance of the receptionist is more relevant than when you ask the receptionist to make a new appointment. Regarding the door opening, which failed to produce an effect, perhaps the ease with which you enter the building doesn't matter that much when you enter a hotel or a dentist's office. It's imaginable that a quick entry is appreciated if you are in a hurry, or if you are already familiar with the building. However, in our study, participants had no time pressure and visited the virtual building for the first time. Holding back for a while before entering a building in new situations can even be appreciated because then people have some time to absorb the new building they are about to enter. A next step would be to investigate whether door opening might affect the experience of hospitality when people are in a hurry or know the building well.

The variables that did influence the experience of hospitality were sensory sensations that made sense at that particular moment. Hot drinks and warm furniture can be a pleasure when settling down in a theatre, a comfortable chair is a relevant sensation in a restaurant, and a transparent entrance in a hotel or dental practice provides the opportunity to anticipate what is coming. Even though we cannot yet determine with certainty, the results raise the idea that both the distinctiveness and the relevance of the physical sensation determine whether they impact the experience of hospitality.

The role of embodied cognition

Central in this dissertation is the question to what extent embodied cognition is involved in the experience of hospitality. Traditionally, cognitive scientists assumed that the mind works distinct from perception and action of the body. However, there is growing consensus about the idea that our body influences abstract thought. According to this view of embodied cognition, our conceptual understanding is shaped by aspects of our body, such as sensory perceptions and bodily states (Meier et al., 2012; Barsalou, 2008).

Chapter 4 taught us that in the last two decades, literature on embodiment has increased enormously (Leitan & Chaffey, 2014). Many studies provide evidence in favour of the embodied view on cognition. However, there is also criticism; replication studies often fail to replicate results, and for most studies alternative unembodied explanations are available (Casasanto & Gijssels, 2015; Dove, 2016; Dijkstra et al., 2014; Mahon & Caramazza, 2008). Currently, in this relatively new field of research, it is argued that the research should shift from purely descriptive research on the existence of the phenomenon of embodied cognition, to explanatory research focussing on how and under which conditions embodiment occurs (Dijkstra et al., 2014; Landau et al., 2010; Meier et al. 2012; Schubert & Semin, 2009).

The embodied metaphors, which are central in this dissertation, form a specific category within the embodied cognitive approach and relate to the idea that abstract mental concepts acquire meaning by connecting them metaphorically to a physical experience (Lobel, 2014; Murphy, 1996;

Williams, Huang, & Bargh, 2009). The experimental research in this dissertation suggests that embodied metaphors are indeed involved in the experience of hospitality.

The research contributes to the embodied cognition research 1) by linking the phenomenon of embodied metaphors to hospitality and demonstrating its relevance to people's experienced hospitality in service environments, 2) by confirming previous findings regarding the embodied concept of warmth, 3) by introducing evidence for two new embodied concepts, *comfort* and *ease of access*, 4) by showing that embodied effects are not limited to laboratory conditions, but also work in practice, 5) by suggesting that the activation of embodied metaphors depends on the relevance of the bodily sensation, and 6) by providing evidence for the 'hybrid approach' of embodied cognition, assuming that embodied and unembodied effects can both function in parallel.

Independent variable	Effect on inviting	Effect on care	Effect on comfort
Study care Chapter 5			
Temperature of drink		✓ embodied	
Temperature of furniture	✓ only for men	✓ only for men	✓ only for men
Study comfort Chapter 6			
Seating comfort		✓ only for low desire to sit	✓ embodied only without extra sound
Study inviting Chapter 7			
Visual transparency	✓ (partly) embodied	✓ (partly) embodied	✓ (partly) embodied

Figure 8.2. Overview of the significant effects of the experimental studies on the factors inviting, care and comfort. The 'check' indicates an effect, 'embodied' means the effect seems to be embodied and white indicates that the effect is only valid for specific target groups.

Figure 8.2 summarises of the effects of the experimental studies and shows for which effect support was found for embodied cognition as underlying mechanism. Below, the results of the studies are discussed on the basis of the above mentioned six contributions to the field of embodied cognition. First of all, this dissertation introduced embodied cognition theory in the field of hospitality research. The embodied metaphors *warmth*, *comfort* and *ease of access* all contribute to the hospitality people experience in service organisations. We showed that hot drinks activated mental warmth which positively impacted the experience of *care* (Chapter 5). Furthermore, seating comfort triggered mental comfort and in turn the *comfort* factor of hospitality (Chapter 6, Pijls et al., 2019). Finally, visual transparency activated mental ease of access and subsequently increased

the experience of all factors of hospitality (Chapter 7). Research had already shown that embodied metaphors have an impact on the judgement of other people (IJzerman & Semin, 2009; Williams & Bargh, 2008a) and people's (intended) behaviour (i.e. Belkin & Kouchaki, 2017; Chiou & Cheng, 2013; Miyajima & Meng, 2017), but the impact on the experience of an organisation is new. However, the research also showed effects that cannot, or only partially, be explained by embodied cognition. Further on in this chapter, we will consider possible explanations.

The second contribution of this dissertation to the embodiment literature is the additional evidence for the widely studied embodied metaphor of warmth. It confirms previously found evidence that hot drinks provide mental warmth (IJzerman & Semin, 2009; Williams & Bargh, 2008a). However, recently, Chabris et al. (2019) failed to reproduce these effects. They argued that this might be due to the differences in the experimental context. While Williams and Bargh (2008a) and IJzerman and Semin (2009) both performed laboratory studies with students, Chabris et al. (2019) conducted their experiment on pedestrians in an outdoor environment, arguing that the embodied effects of hot beverages might not apply outside the laboratory. However, our study does suggest an embodied effect of hot drinks in the natural setting of a theatre, in which we could not control many of the variables that are controllable in a laboratory setting. As Chabris et al. (2019, p.132) state "only the cumulative results of multiple, independent, replications will provide an unbiased estimate of the actual size of an effect". Our study is the first to show an embodied effect of hot drinks on mental warmth in a field setting. Moreover, our research shows that the effects of physical warmth extends to the assessment of the organisation. We encourage further research into the effects of hot beverages, using different settings and different dependent variables.

Thirdly, two new embodied metaphors are introduced: *comfort* and *ease of access*. The literature provided some indications that *physical comfort* is related to *mental comfort* (da Silva Menegon et al., 2017; Slater, 1985) and that *physical ease of access* is related to *mental ease of access* (Ju & Takayama, 2009; Stamps, 2010; Vilnai-Yavets & Koren, 2013). However, this dissertation presents to the best of our knowledge the first empirical evidence for the embodied basis of these concepts and shows their involvement in people experience of hospitality. We have shown that physical seating comfort provides mental comfort, and that visual transparency (an expression of physical ease of access) provides mental ease of access to a service organisation.

The fourth contribution to embodiment is the evidence for the functioning of embodied metaphors in practice. The vast majority of studies on embodiment have been laboratory studies, which has limited value (Littlemore, 2019). Controlled laboratory settings are suitable to explore whether conceptual metaphors are grounded in sensory experiences and bodily states. However, it provides no understanding of the mechanism of embodied cognition in the real world. Our research is an addition to the few studies performed in real-life settings (e.g. Belkin & Kouchaki, 2017; Chabris et al., 2019; Zwebner et al., 2013) and adds evidence for the mechanism of embodied cognition in various real service environments. We found that mental warmth was triggered by serving hot drinks in a theatre, and mental comfort was activated by providing comfortable seats in a self-service restaurant.

Additionally, we showed that a transparent entrance of a hotel and a dental practice activated mental ease of access (Chapter 7, Pijls et al., under review). This final study was carried out in virtual reality, allowing us to control many variables in a realistic environment. Technological innovations such as virtual reality offer the opportunity to perform experimental studies in semi-real environments with the advantages of a controlled laboratory setting. Therefore, in addition to more studies in the real world, as suggested by Littlemore (2019), we also propose this type of advanced Virtual Reality studies, which are laboratory experiments that approach real-life.

Fifthly, although our research provides evidence for embodied effects, also effects were found that could not be explained by embodiment. Chapter 5 showed an embodied effect of warm drinks, but the effect of warm furniture seemed to be not embodied. Warm drinks activated the mental metaphor of warmth, while heated seating cushions did not. The heated cushions increased the hospitality experienced for men, but without triggering mental warmth, which suggests a disembodied mechanism underlying the effect. Furthermore, in the virtual reality study (Chapter 7) the transparency increased the experience of *inviting* at the dental practice both via an embodied and a disembodied route. In contrast, at the hotel, the effect on inviting was totally embodied.

Perhaps, embodied effects on the experience of hospitality only occur when the bodily sensation is relevant in that specific situation. When just arrived at a theatre, a warm drink is a treat for the body that applies in that specific context. Heated seat cushions can also be pleasant, but are not yet common, certainly not indoors. On an outdoor terrace a heated cushion may have more value for your body. Maybe in that situation the effect will be embodied. Comfortable sitting is also specifically important in a restaurant. Offering a transparent entrance is also functional, because the consumers' eyes are given the opportunity and the pleasure to look inside.

The extra direct (disembodied) effect of the transparency of the entrance of the dental practice on the experience of inviting may be due to the fact that for a dental practice, a transparent facade is less usual. Modern hotels are generally transparent, while in the healthcare sector this is usually not the case, probably for privacy reasons. The transparency of the dental practice in the experiment may have been a surprise directly leading to feeling invited. Another explanation is that by offering visual transparency, the organisation simply shows itself without provoking a physical reaction. This may also be a reason why the organisation looks inviting.

All in all, we showed that some of the physical sensations we studied activated the conceptual metaphors that were expected to be associated with the sensations, but others did not, or only partially. The findings show that an expected triggering of embodied metaphors does not always happen; cognition is not always embodied. This was already known for abstract metaphors that have no direct physical basis, such as *beauty*, *patience*, *democracy* and *truth* (Dove, 2016; Mahon & Caramazza, 2008). However, this dissertation suggests that under particular circumstances this also applies to the so-called primary metaphors which are derived from real world experiences, such as *warmth* and *ease of access*. As we saw, it may play a role here whether the physical sensation is relevant in that particular context.

Apart from activation of embodied metaphors, stimuli also lead to abstract thought through other mechanisms. This leads to our sixth contribution to embodied cognition research. The findings in this dissertation address the opinion of several authors that instead of just looking for evidence for the involvement of sensorimotor systems in cognitive processes, it is now time to examine under which condition embodied cognition is involved (Dijkstra et al., 2014; Landau et al., 2010; Meier et al. 2012; Schubert & Semin, 2009). According to Gibbs (2009), we need to focus more on what the embodied cognition can and cannot explain. This dissertation does show that there are situations in which embodiment occurs, and situations in which embodiment does not occur. Above we stated that this might be due to the relevance of the service cues for the body. The more appropriate the sensation is, the more likely it is that embodied cognition is (one of) the mechanisms underlying the effect on people's hospitality experience.

Furthermore, we provide evidence for the hybrid approach, which proposes both embodied and disembodiment mechanisms (Barsalou, 2016; Dove, 2016; Mahon, 2015; Mahon and Caramazza, 2008). Concerning the effects of physical warmth on the experience of hospitality, we found that hot drinks affected the experience of *care* by activating mental warmth (embodied effect), whereas the warm cushions affected the experience of hospitality without activating mental warmth (disembodied effect). Also, at the virtual dental practice visual transparency affected the experience of hospitality by both embodied and disembodied routes.

Apart from embodiment, what other mechanisms may be involved in the process from the perception of environmental information to the experience of hospitality? Chapter 4 described that people intuitively infer meanings about the service from the physical service environment (Baker et al., 1996; Berry et al, 2006; Cherulnik, 1991). Activation of embodied metaphors is one way to make such inferences from environmental service cues about the service organisation.

However, environmental inferences can also be based on the direct transfer of meanings or emotions from the environment to the service. The halo-effect (Thorndike, 1920), which is the phenomenon that people transfer their feeling about one attribute to other, unrelated attributes, belong to this type of inferences. According to these direct inferences, the service firm is assessed as being of the same quality as the service environment. A pleasant environment can, for example, lead to the experience that the service will also be pleasant, and a nice scent or nice music in the environment can lead to enhanced evaluation of the service (Spangenberg, Crowley, & Henderson, 1996; Turley & Milliman, 2000).

This mechanism may explain effects that are not embodied. For example, the direct route of the effect of visual transparency through attractiveness on the experience of hospitality in the dental practice (Chapter 7). A transparent entrance is attractive and the positive emotions associated with that attractive entrance are transferred to a positive appraisal of the organisation, in this case by associating the organisation with *inviting*, *care* and *comfort*. Also, the effects of the heated seat cushions could be explained by direct inferences. The heated cushions may have given men a positive feeling, which also made them experience hospitality in a more positive way. This may also

explain why the temperature of the furniture not only affected the *care* factor, which was hypothesized based on embodied cognition theory, but affected all three hospitality factors.

Inferences can also be the result of spreading activation, which is explained by the Associative Network Theory (Anderson, 1983). Whereas direct transfer effects relate to the direct projection of environmental characteristics onto characteristics of the organisation as a whole, associative processes are the result of activating connections between concepts that are linked in memory based on previous experiences. According to Associative Network Theory, the information in memory consists of individual pieces of information called nodes. These nodes make up a network of associations that are formed over time. By stimulation of a node, associated nodes are also automatically activated (Raaijmakers & Shiffrin, 1981). Information about service environments is also stored in such associative networks. For example, people usually associate environmental cues such as silverware and large wine glasses in a restaurant with luxury or prestige (Verhoeven, 2009). Although embodied effects also rely on the specific association between the physical sensation and the mental metaphor, Associative Network Theory implies activation of a more extensive network of nodes around a concept.

In line with ideas of authors who have a critical attitude towards embodied cognition (e.g. Dove, 2016; Mahon, 2015; Mahon & Caramazza, 2008), spreading activation could be an alternative explanation for at least some of the effects that we have assumed to be embodied. Based on our experience that coffee and tea are often provided when you are received somewhere, a cup of coffee or tea may trigger associated nodes in your memory, such as welcome, a kind gesture, cosiness, indulgence and caring. In this way, both mental warmth and the experience of *care* could be activated in our study. The effect could be caused by the symbolic meaning of coffee and tea, rather than by the temperature of the drinks.

However, if spreading activation is the mechanism underlying the effect, one would expect that the coffee or tea would influence not only the experience of *care* but also the related experience of *comfort* and the *inviting* because these aspects are expected to be connected in an associative network. The fact that this was not the case argues in favour of embodiment as a processing mechanism. The effect of seating comfort could also be explained by spreading the activation; comfortable seats often go with taking time to sit and feelings of relaxation, which means that these are connected in the memory. Moreover, the study on the effect of visual transparency (Chapter 7), incorporating not only mental ease of access but also attractiveness as mediator, suggest several paths from visual transparency to the experience of *inviting*, *care*, and *comfort*. Mental ease of access, transparency, inviting, care and comfort may be some of the nodes in the associative network around visual transparency. Therefore, spreading the activation could also be an alternative explanation for the indirect effects found in this study.

In conclusion, this dissertation has introduced embodied cognition in the context of hospitality. Evidence was found that embodied cognition is involved in people's experience of hospitality in service environments. A series of experimental studies on the role of the embodied metaphors that are close to the concept of hospitality -*warmth*, *comfort* and *ease of access* - provided evidence for

embodied cognition as one of the mechanisms involved in how people form impressions about the hospitality offered by service organisations. However, although these are strong indications for embodied cognition, we do not offer closing evidence. As with previous studies, there are also alternative explanations. Furthermore, embodied cognition seems only one of many ways in which elements of an organisation's environment influence the perceived hospitality. Also, other mechanisms seem to be involved, such as direct inference and spreading activation.

In addition, the findings suggest that sensations have only impact on the experience of hospitality when they are sufficiently pronounced and when they are relevant in their context. The role of embodiment in the effect on the experience of hospitality may be related to whether consumers experience a physical sensation as an intention of the organisation to make its guests feel good. We are still at the beginning of the understanding of the conditions under which embodiment does or does not occur. Future research should further address the question of *when* and *how* embodiment takes place.

Applied research methods

Psychological research in general, and research on concepts such as the experience of hospitality in particular, heavily rely on subjective measures in trying to understand perception, cognition, emotion and behaviour. Apart from measuring brain activity, psychologists gather data from observing people's behaviour and asking them questions about matters that people are usually not aware of.

In addition, the influence of environmental factors on people's perception of hospitality is a mainly unconscious process. Psychologists developed methods to try to overcome this problem. The experimental research presented in this dissertation is an example of such a method. Because people are not aware of the aim and manipulation in the experiments, it is possible to identify causal relationships between variables without asking people explicitly about these relationships. Moreover, by operationalising the temperature, physical comfort and physical ease of access in different ways, and by including mediators and moderators in the experimental design, we responded to the need for more explanatory research and developing theories on when and how embodiment occurs (Dijkstra et al., 2014; Landau, Meier, & Keefer, 2010; Meier et al. 2012; Schubert & Semin, 2009).

Despite the use of experiments specifically designed to measure implicit effects, we relied on the measurement of the experience of hospitality by a questionnaire. Questionnaire research implies that people consciously think of how they experienced various aspects that are related to hospitality. Although people were instructed not to think too long and rely on their first impressions, people unavoidably think explicitly about elements of the service delivery that they usually process unconsciously. Moreover, although the wording of the questions was carefully chosen and tested, the formulation of the questions may have influenced the outcome. These are disadvantages of survey research. So far, however, this is the best way to examine customer experience quantitatively.

Perhaps in the future, technology will be available to overcome these problems, for example, by using advanced neuroimaging techniques to recognize emotions. However, thus far, such techniques are not sophisticated enough to be able to distinguish between subtle differences such as the experience of *inviting*, *care* and *comfort*.

The experiments in this thesis were carried out in real-life settings, using field studies and one virtual reality study. There are two reasons for performing research in real-life settings. Firstly, hospitality in service organisations is a phenomenon that is difficult to create in laboratory settings. Secondly, so far, there is little evidence for embodied cognition in practice. The advantage of a field study is that it directly shows whether an environmental manipulation works in practice, thereby enhancing the external validity of the results. However, disadvantages are the amount of time it takes to design and organise a field experiment, the dependence on the cooperation of external parties, limitations in manipulating the environment and the impossibility to control all variables. Results might be undesirably influenced by factors such as fellow customers, employees or weather conditions. Although we tried to prevent the influence of such factors as much as possible through the design of the experiments, in a practical setting, it remains impossible to exclude external factors.

The virtual reality study was designed because, in contrast to a practical setting, it enabled us to manipulate visual transparency and the door rotation speed in a suitable way. Moreover, it offered the opportunity to compare the effects of certain manipulation in different service settings. Advanced Virtual Reality technology provided the possibility to create a virtual environment that approached reality. Participants could actually walk around in the virtual environment and the environment responded to them when the door opened and the employees behind the counter welcomed them when they arrived. Accompanying sounds - outside sounds, door opening sounds and background music inside the building - made the experience even more realistic. Although the costs of creating such an environment are high, the environmental elements can easily be manipulated, tested and adapted once the virtual environment has been created. Virtual environments are especially suitable to manipulate environmental characteristics. Research into human interaction in virtual reality is more difficult, although technological developments are also making progress in this area. A disadvantage of studies using virtual reality is that people have to get used to walking around with VR glasses on and have to trust the researchers that they can move safely. Our experience, however, was that people get used to this quickly, probably also because the environment seemed so realistic to them.

All in all, this type of virtual reality studies offers a good alternative to traditional laboratory studies, because they are much more realistic, but still keep other variables constant. This is especially an opportunity for applied research in which it is important to stay close to reality.

Besides the experimental research measuring cognitive judgements that follow particular sensations, as performed in the research described in this dissertation, also other types of experimental research are applied to study embodiment. Examples are reaction time studies and studies focussing on the effects of stimuli on intended and actual behaviour (described in Chapter 4). Likewise, linguistic

research examines what language people use when talking about abstract concepts. Another type of research that provides further understanding of embodied cognition is the use of Magnetic Resonance Imaging (MRI), which is used to measure neural activity in specific brain areas involved in the processing of sensory and motor information and in the processing of abstract concepts.

Directions for future research

Our exploration of the meaning and measurement of the experience of hospitality concentrated on the service sector in general. However, the experimental studies showed effects that are applicable in a specific context of service provision, with associated specific visitor population. Therefore, the results cannot be simply generalised to service organisations in general.

Although it was not the main aim of this dissertation, we provided some evidence that service context and individual characteristics of people matter. Firstly, Chapter 3 showed that the importance of the factors *inviting*, *care* and *comfort* depended on the type of organisation. Secondly, Chapter 7 showed differences in the effects of transparency at the hotel and the dental practice. The research presented in this dissertation also provided evidence that individual differences matter. Chapter 5 showed that the effect of warm furniture in the theatre only applied to men, and Chapter 6 showed that the effects of seating comfort depended on people's desire to sit. Further research is necessary on contextual, individual and cultural variations in the experience of hospitality and on the service cues that influence the experience of hospitality.

We demonstrated that our body has a considerable role as an interface between the service environment around us and our experience of hospitality inside us. Embodied cognition seems one of the mechanisms affecting how we experience hospitality. However, each sensory attribute was experimentally studied only once, in some cases twice. Replication studies often do not reproduce the results that were previously found. Our experiments also need to be replicated to strengthen the evidence of the results found. Replication is particularly crucial because most studies have been performed in a real-life setting, which at the one hand increases the external validity of the results, but which on the other hand, suffers from external influences.

We further encourage research on the conditions under which embodiment occurs. We noticed that some sensory stimuli do and others do not activate a conceptual metaphor. Why do some sensory cues activate an associated conceptual metaphor, whereas other sensory cues do not activate the metaphors that were expected to link to that sensation? Is the pleasantness of the sensations offered by the organisation relevant here, as suggested? And does this depend on where you are and who you are? More research is required to answer these questions.

The complexity of the type of studies that have been performed and the duration of a PhD research project allowed us to study the impact of a limited number of environmental cues on the experience of hospitality. However, there are many more service aspects that influence people's experience of hospitality. Other environmental characteristics may also influence the experience of hospitality, such as scent, colour, shape lighting, music and surface materials. Our research suggests that the

distinctiveness of environmental cues and their contextual relevance may be aspects that influence whether environmental cues improve or degrade the experience of hospitality in service-oriented environments. Future research will reveal whether this also accounts for other type of cues, such as scent, music, colours and lighting.

Furthermore, aspects related to human behaviour may also be embodied. For example, research has shown that casual interpersonal touch between servers and customers enhances tipping rate in restaurants (Hornik, 1992), and interpersonal distance induces mental distance (Lobel, 2014; Williams & Bargh, 2008b).

However, all research on the effects of service cues on how consumers experience hospitality, including the research in this dissertation, has been performed before the Covid-19 pandemic. The pandemic will have an impact on what we experience as hospitality. The meaning of the concept of hospitality experience seems not likely to change; the hospitality experience will probably continue to consist of the factors *inviting*, *care* and *comfort*. However, particular service cues that make us experience hospitality are likely to change. For example, we will no longer associate shaking hands with hospitality and the casual interpersonal touch between servers and customers, as mentioned above, will probably no longer increase the tipping rate in a restaurant. Additionally, hygiene is likely to become a more critical condition for a hospitable service environment.

Furthermore, it is likely that the role of virtual service environment, which was already growing, will increase even faster. What doesn't have to take place on location shifts to online, such as buying tickets, takeaways, shopping and business meetings. Also, in online services, people experiencing *inviting*, *care* and *comfort* through for example web- and app-layout, availability of information and customer service.

To conclude, the research described in this dissertation is a first step in understanding how the service environment influences its consumers' experience of hospitality. Based on this research, we conclude that a service setting may contribute to a feeling of hospitality by offering physical warmth, comfortable seating and a transparent entrance. Hopefully, many more studies will follow that will add service elements to this list, including understanding of how and when these elements will impact the experience of hospitality.

Conclusion

Our research bridges the gap between, on the one hand, the field of hospitality, where the link between the physical environment and hospitality is barely addressed, and, on the other hand, the fields of environmental psychology and service marketing, where the influence of environmental variables are extensively studied but not yet concerning hospitality.

Despite the complexity of the phenomenon, this dissertation succeeded in clarifying the meaning of the experience of hospitality. The identification of the factors *inviting*, *care* and *comfort* not only operationalised the experience of hospitality but also resulted in the EH-Scale that is validated in

various service environments and can be used to measure the experience of hospitality in any service environment.

Moreover, this dissertation offers empirical support for the contribution of the service environment to people's experience of hospitality. The research demonstrates that particular environmental service cues affect the experience of hospitality. Besides, it provides empirical support for embodied cognition as one of the mechanisms involved in processing sensory perceptions of the environment that lead to an experience of hospitality. Altogether, this dissertation increases our understanding of the experience of hospitality by enabling us to measure both the concept itself and the effects of particular sensory cues in service environments.

The following final chapter takes a broader perspective on the influence of environmental factors on the experience of hospitality in service organisations. The chapter shows which environmental cues, in addition to a transparent entrance, hot drinks and furniture, and comfortable seating, may further influence people's experience of *inviting*, *care* and *comfort*.

in brief

Chapter 8 discussed the academic contribution of the research, starting with the multidisciplinary approach, the unravelling of the concept of the experience of hospitality, and the development and validation of the EH-Scale.

Moreover, this dissertation offers empirical support for the contribution of the service environment to people's experience of hospitality. The research demonstrated that particular environmental service cues affect the experience of hospitality. Besides, it provides empirical support for embodied cognition as one of the mechanisms involved in processing sensory perceptions of the environment in the experience of hospitality.

In Chapter 9, the final chapter, we look ahead to how the knowledge now available can help to design hospitable service environments. It is explored which environmental service cues, next to a transparent entrance, warm drinks and furniture, and comfortable seats may further influence people's experience of inviting, care and comfort.

9. designing hospitable service environments

Introduction

This dissertation increases our understanding of the experience of hospitality. By introducing the three factors of the experience of hospitality, *inviting*, *care* and *comfort*, we now have insight into what consumers experience as hospitality. Furthermore, the EH-Scale offers researchers and service professionals an instrument to measure how the hospitality provided by their organisation is experienced. Moreover, the conceptualisation of the experience of hospitality can, and in some cases already does, help educational institutions such as hospitality business schools to enrich lesson materials on hospitality.

This dissertation further showed how concrete environmental service attributes contribute to the experience of hospitality of its consumers. Thus, physical characteristics of a building and its objects are able to convey hospitality. Based on the findings of the present research, service practitioners and designers may consider using warm and comfortable objects and visual transparency to support the hospitality performance of an organisation. However, also other environmental variables that may relate to the experience of hospitality came across during the PhD period, either through literature or through the experts and consumers who participated in the research.

This last chapter explores what other environmental service cues may also contribute to the perception of consumer hospitality. It's not an exhaustive list of potentially relevant cues, but some initial ideas that seem worth exploring further. This chapter serves as inspiration for service experts and designers for designing hospitable environments. It further sets the research agenda for applied research into the influence of environmental service cues on the experience of hospitality in service environments.

A hospitable service environment

Architects, interior designers and service experts understand that the buildings we visit influence our thoughts, feelings and behaviour. Based on intuition and experience, designers are able to create pleasant places for us. However, social scientists are increasingly giving the intuitive selections of design elements an empirical basis. This dissertation contributes to these empirical foundations for hospitality design. We showed that environmental cues contribute to the hospitality attributed to an organisation. The experimental studies demonstrate that at least a transparent and appealing entrance, a comfortable seat and warm drinks and warm furniture create a hospitable atmosphere. The PhD project enabled us to reveal some cues that influence consumers' experience of hospitality. The cues that have been studied were selected based on their expected role in relation to embodied cognition theory. However, undoubtedly also other environmental cues and psychological processes influence how people evaluate hospitality at an organisation. Academic literature scarcely discusses the contribution of environmental aspects to hospitality in general. However, aspects like colours, shapes, lighting, layout and scent may be expected to set expectations about the hospitality of the organisation. Now that we know that hospitality consists of the

factors *inviting*, *care* and *comfort*, cues can be found that seem relevant to these sub aspects of hospitality. In addition, the service experts and consumers who participated in our studies (e.g. Chapter 2) also shared their thoughts on which sensory aspects contribute to hospitality. Of course, further research is needed to demonstrate whether these cues indeed impact people's experience of hospitality.

Environmental service cues promoting *care*

To begin with, service cues that affect the experienced hospitality may also affect hospitality beyond the specific circumstances in which they have been studied. Maybe not only warm drinks and warm furniture but also other perceptions of physical warmth give a hospitable feeling. For instance, warm ambient temperatures may also lead to the experience of hospitality. Or a heater or blankets on a terrace of a restaurant or café; because these cues may be experienced as salient and relevant on a chilly evening, the effects may also be embodied.

Materials also differ in how warm they physically feel, dependent on their thermal conduction. Wood and plastic, for example, are perceived as warmer than metal or glass, even when both materials are at room temperature (Fenko, Schifferstein, & Hekkert, 2010; Wastiels, Schifferstein, Heylighen, & Wouters, 2012). Therefore, touching wood or plastic in a service environment may lead to the experience of more *care* compared to touching metal or glass. Think in this context of materials for stair railings, counters, tables or armrests of chairs. If salient enough, these physical perceptions of warmth or coldness may affect the experience of *care* via the mental warmth associated with the organisation, which would suggest embodied effects.

Not only physical temperature perceptions but also colours are associated with warmth. Red, yellow and orange are considered 'warm' colours, whereas blue, green and violet are 'cold' colours. Bennett and Rey (1972) stated that 'cold' hues lead to the perception of cooler temperatures, while 'warm' hues lead to the perception of higher temperatures. Several studies providing support for this idea (e.g. Fenko et al., 2010; Wexner, 1954; Winzen, Albers, & Marggraf-Micheel; 2014). However, others did not find support (e.g. Bakker & van der Voordt, de Boon, & Vink, 2013). Warm colours (red, orange, yellow) are also associated with warmth in the figurative sense (Choi, Chang, Lee, & Chang, 2016; Fenko et al., 2010; Nielsen, Friberg, & Hansen, 2018, our research presented in Chapter 3). Nielsen et al. (2018) studied the effect of coloured illumination in architecture. They asked people how the space affected them when a room was illuminated in a particular colour. A red lit room was associated with, amongst others, womb, warm, enclosed, soft and care. An amber lit room was associated with carrying, caress, hug and friendly. Effects of warm colours can also be embodied through the warmth-metaphor; Choi et al. (2016) showed, in line with the effect of hot drinks of Williams and Bargh (2008a), that an anonymous person against a warm colour background (as opposed to a neutral and cold colour background) is seen as someone with a warmer personality.

Together, the findings suggest that warm colours (red, orange, yellow) may convey more *care* than cool colours (blue, green). Service environments with warm colours may, therefore, be experienced

as more hospitable than service environment with cool colours. To further explore the effect of colour on the experience of hospitality, not only hue but also the brightness and saturation of colours should be considered. Brighter and less saturated colours are more relaxing to view while less bright and more saturated ones are more energizing (Valdez & Mehrabian, 1994). Furthermore, research is needed to examine whether embodied effects also occur when warmth is perceived indirectly, in this case via colour.

Also, certain shapes seem related to the experience of *care* and *comfort*. People associate organic, curved shapes and roundness with youth, nature and the human body, which provide people with feelings of warmth, protection, harmony and comfort (e.g. Hsiao & Chen, 2006; Salingaros, 1998). Furthermore, curvilinear forms are experienced as pleasant and stress-reducing (Madani Nejad, 2007). Dazkir and Read (2012) asked people to rate pictures of rooms that contained either mainly rectilinear or curvilinear furniture. The findings showed that pleasant-unarousing emotions such as feeling relaxed, peaceful and calm, were associated with the curvilinear settings, while the unpleasant-arousing emotional states such as the feeling of stress, annoyance and anger were more associated with the rectilinear settings. Thus, curves shapes may contribute to the experience of hospitality both by providing care and making people feel comfortable. An expert consulted for Study 1 (Chapter 3) expects that curved shapes can also be applied to the shape of rooms. “Why are corners of a room always angular? Rounded corners of a room are more likely to give a sense of shelter and intimacy.”

In addition to warm temperatures, warm colours and curved lines, it can be imagined that also soft materials produce feelings of *care*. A soft couch, a carpet, velvet curtains or a soft plaid may also contribute to the experience that the organisation takes care of you. Because softness has both a physical and a mental component, embodiment can play a role here, especially in situations where softness is a relevant sensation, such as soft pillows on a sofa in a hotel lounge. Further, although people generally feel comfortable in spacious environments with high ceilings (Baird, Cassidy & Kurr, 1978), smaller rooms in for example hotels and restaurants may be experienced as more sheltered and secure. Furthermore, music can provoke feelings of warmth, tenderness, empathy (Saarikallio, Maksimainen, & Randall, 2018). Finally, offering something tasty, such as coffee, tea, a candy, a bottle of water or fruit, could also be experienced as a generous gift from the organisation. Since these products are intended as pleasant sensations for the body, they can positively influence hospitality through embodiment, at least when the sensation is relevant in the context.

Environmental service cues promoting *comfort*

From this dissertation we know that physical seating comfort influences the hospitality experienced in a self-service restaurant. This may work also in other service situations that involve sitting, such as waiting areas in hospitals, hotels and railway stations. Also, the physical comfort of workplaces and meeting rooms, or furniture in theatres, concert halls and cinemas may affect the hospitality associated with the organisation.

Next to seating comfort also other types of physical comfort may affect the experience of hospitality. Spatial comfort is another aspect that influences whether people feel physically comfortable. Hall (1966) distinguished between four interpersonal distances: intimate distance (0-45 cm), personal distance (45-120 cm), social distance (120-350 cm) and public distance (more than 360 cm). When an unknown person enters someone's personal or intimate space, it feels uncomfortable. Since the Covid-19 pandemic this physical discomfort may be even higher. In service situations where consumers are forced to be close to other consumers, for example in queues, public transport or other crowded places, this may have a negative impact the *comfort* factor of the experience of hospitality. Chang and Wu (2014) examined interpersonal comfort at different layouts of seats in a waiting area at a railway station in Taipei. They showed that shorter distances were most comfortable when seats are positioned back-to-back, followed by face-to-face and side-by-side. Side-by-side arrangement required a minimum distance between the seats of 114 cm to ensure user comfort. Also, acoustic comfort may influence whether people feel comfortable. At the one hand, high noise levels may cause discomfort because of the high cognitive load. This was the effect we expected but did not find (Chapter 6, Pijls et al., 2019), probably because the sound levels were not uncomfortable enough. On the other hand, low acoustic privacy may also cause physical discomfort during privacy-sensitive conversations because of the absence of background noise or the absence of a soundproof room. Acun and Yilmazer (2018), for example, found that for employees, environments that are too quiet are just as stressful as environments where the noise level is above the desired level. Thus, sounds may cause physical discomfort and may therefore be experienced as less hospitable. However, sounds may also positively contribute to hospitality. Relaxing background music, at a comfortable sound level, is likely to enhance people's hospitality. Music often promotes relaxation (Juslin, Liljeström, Västfjäll, Barradas, & Silva, 2008; Zentner & Scherer, 2008). Moreover, because music can evoke both physical and emotional reactions (e.g. Sloboda, 1991), effects of music may also have an embodied basis. Furthermore, comfort related to air quality, such as thermal comfort and olfactory comfort, may influence how comfortable we physically and mentally feel. Therefore, also these types of comfort may influence our experience of hospitality. Organisations that offer a chilly service environment or bad odours - if not intentionally - will probably appear less hospitable than organisations that offer comfortable warmth and pleasant fragrances. Fragrances also have a strong effect on our emotions and could therefore also contribute to a feeling of hospitality. Literature suggest that lavender (e.g. Field et al., 2005; Nakamura, Fujiwara, Matsumoto, & Abe, 2009), ylang-ylang (Hongratanaworakit & Buchbauer, 2006; Moss, Hewitt, Moss, & Wesnes, 2008), lemon (Nakamura, Fujiwara, Matsumoto, & Abe, 2009) and rose (Hongratanaworakit, 2009) have relaxing effects by reducing heart-rate, blood pressure and breathing rate. Presence of these odours in the service environment may increase the experience of the comfort factor of hospitality. Also, these types of physical comfort (interpersonal, acoustic and olfactory) may cause embodied effects by activating the comfort factor of the experience of hospitality via mental comfort.

As we have already seen above, curved shapes may not only contribute to *care*, but also to *comfort*. Curved forms and roundness make us feel calm and relaxed, probably because of its associations with nature. Several studies, predominantly performed in healthcare settings and working environments, suggest that viewing nature, real nature but also images of nature, makes us feel at ease (e.g. Colenberg, Jylhä, & Arkesteijn, 2020; Felsten, 2009; Lohr, Pearson-Mims, & Goodwin, 1996; Yin, Zhu, MacNaughton, Allen, & Spengler, 2018). According to Kaplan (1995), this may be the result of a restorative effect on the mind of looking at natural scenes. Watching videos of nature also leads to positive emotions, and also lower heart rates and blood pressure (Ulrich et al., 2008; Zijlstra, Hagedoorn, Krijnen, van der Schans, & Mobach, 2017). Also, the colour green, the colour of nature, has in itself relaxing effects. Green and blue are calming and relaxing colours (e.g. Jacob & Suess, 1975; Stone, 2001).

Besides, lighting may contribute to the *comfort* factor of the experience of hospitality. For example, street lighting contributes to the perceived personal safety (Haans & de Kort, 2012; Nasar & Jones, 1997). Furthermore, especially cove lighting - which is a form of indirect lighting in a cove that provides a uniform, diffuse light - provides feelings of relaxation (Durak, Camgöz Olguntürk, Yener, Güvenç, & Gürçınar, 2007).

Other environmental cues that are supposed to be related to the *comfort* factor of hospitality are cues that provide clearness, cues that contribute to the feeling that you know what to expect. A well-designed layout of an environment that provides a good overview of the service environment may make consumers feel comfortable. For example, Orth and Wirtz (2014) found that visual complexity reduces a service environment's attractiveness and pleasantness. Furthermore, an exploratory study in which hotel guests created collages including images they associated with comfort (Pijls & Groen, 2012) revealed that comfort is associated with rooms where you can stay for more extended periods, such as lounges, living rooms and bedrooms. Furthermore, comfort was associated with squared shapes with rounded edges, a lot of daylight, natural colours, and multiple layers of fabric, such as carpets, plaids and cushions. These findings are in line with Gifford (1988), who has already long ago stated that a more homely setting is not only more physically comfortable, but also more psychologically comfortable, evoking a sense of refuge and unguardedness associated with home.

Environmental service cues promoting *inviting*

As Chapter 7 showed, a transparent entrance is inviting, but it also provides *care* and *comfort*, both in a hotel and a dental practice. The (embodied) influence of visual transparency should be further explored. Does transparency at other places in the interior service environment also convey hospitality? Stamps (2010) studies atmospheric permeability of an environment, which refers to the abilities to see through or move through the environment. For example, spaciousness and horizontal lines of sight create atmospheric permeability. A permeable environment may attract people to come further, thereby creating an inviting atmosphere. The opposite of permeability is enclosure, which may give a feeling of protection and therefore seems more connected

with *care* than with *inviting*. Furthermore, spaciousness and high ceilings activate feelings of freedom (Meyers-Levy & Zhu, 2007). As freedom is also part of the inviting-factor of the experience of hospitality, high ceilings may appear inviting to people.

The collage-study performed by Pijls et al. (2012) also explored what environmental cues are associated with inviting. The findings confirm that areas with long lines of sight, such as corridors, or places where you can look outside are experienced as inviting. Furthermore, colourful accents in bright colours appeared inviting, such as bright-coloured green cushions, clear blue vases, pink flowers and colourful paintings. Tantanatewin and Inkarojrit (2018) showed that people indicated that they were most likely to enter a restaurant scene with bright and warm-tone colours. Research by Belizzi et al. (1983) showed that respondents felt more physically attracted to warm tones but perceived the environment in warm colours as less pleasant. Warm colours seem successful when it comes to bringing people in (*inviting*), but less so when it comes to putting people at ease (*comfort*). Also, lighting may be used to create an inviting environment. Countryman (2001) performed two exploratory studies on lighting in visual design. She found that people tend to move towards the light. People preferred chairs that were close to the lighting to chairs that were further away from the lighting. Another study showed that people tend to walk in an illuminated part of a hallway. In the context of retail, Summers and Hebert (2001) found that consumers touched and picked up more items when display lighting was used than when it was not used. Thus, lighting seems to attract people, which suggests that it may be an environmental cue that can be experienced as inviting. Because of the approach behaviour towards the light, this effect might also be embodied. Because the *inviting* factor of the experience of hospitality concerns capturing the attention of consumers, fragrances may also be a means to do that. An appropriate scent, such as a fresh scent in a sports centre, or the smell of coffee or bread at the bakery or a grand café, may make you feel more attracted to go inside. Because people generally only briefly smell a fragrance at the beginning of the exposure (because of the effect of adaptation), a fragrance seems a suitable cue to foster the experience of *inviting*, which seems especially important at first impressions. Furthermore, music can be energetic by provoking feelings of joy, positivity and enthusiasm (Saarikallio, Maksimainen, Randall, 2018), which may also relate to the *inviting* factor of the experience of hospitality.

Contextual dependency

In what situation is which cue appropriate? It may depend on the type of service environment, the moment in the service process and the consumer. Is a relaxing effect (*comfort*) especially relevant in situations where people may experience stress, such as in healthcare or in an aeroplane? Is *inviting* especially important in hedonic service environments - such as hotels, restaurants and shops - where commercial organisations try to attract customers? Furthermore, *inviting* may be particularly relevant during orientation and entrance of a service environment, whereas *care* is expected to play a more significant role in later phases of the service process.

Finally, people may differ in what cues they experience as hospitable. Although it was not the primary goal of this dissertation, we showed that individual differences matter: gender moderated

the effect of heated cushions, and people's desire to sit in the effect of seating comfort. Also, other individual characteristics may be relevant, such as cultural background or sensory preferences. For people who predominantly orientate on visual cues, the use of colour, layout and transparency may have more effect on the experienced hospitality than for people who are more guided by for example their sense of touch. For them, room temperature, surface materials and seating comfort may be cues that are especially relevant for their experience of hospitality.

The interplay of service cues

Because of the focus on the role of embodied metaphors, we studied specific relationships between environmental cues and the experience of hospitality. The above suggestions of cues that may relate to *inviting*, *care* and *comfort* are also described in terms of one-to-one relationships. By studying the impact of specific environmental cues, it appears that some environmental cues are supposed to contribute to all factors of hospitality, such as curved lines. However, other cues may work out differently on *inviting*, *care* and *comfort*. For example, Chapter 7 shows that a transparent entrance of a hotel may increase the experience of *inviting* but decreases the experience of *care*. A transparent entrance is inviting, but when guests stay in a hotel lobby behind the transparent front, the transparency may make them feel exposed and vulnerable.

Contradictory effects also apply to colour: warm tones seem to contribute to *care* and *inviting*, while cool tones make people feel relaxed and comfortable. Because the inviting factor of the hospitality experience relates to attracting people, making them curious to enter, stimulating (high arousal) environmental cues may be beneficial. On the other hand, in creating *comfort*, and perhaps also *care*, calming cues (low arousal) may be more appropriate. Designers should carefully decide, at which point in the service process, which cues are suitable to create the desired experience.

However, besides processing of separate cues, people process their environment holistically (see also Chapter 4). The emotional effects of environmental cues combine in our mind into an overall experience of hospitality. Schifferstein and Desmet (2008) mention that consumers tend to prefer products for which different pieces of sensory information are coherent in a way that they duplicate or complement one another. Presumably, this is also true for service environments. The sensory coherence of cues may even in itself be inviting. A study on processing fluency showed that processing fluency in advertising moderates the relationship between value fit and attraction to an organisation. Highly fluent advertisements create a higher sense of attraction to organisations than those that are less highly fluent (McGinley, Zhang, Mattila, & O'Neill, 2015).

However, the downside of coherence is that the predictability may evoke boredom. A limited degree of conflict between cues may be experienced as surprising. However, sensory discrepancies only improve consumer evaluations when the discrepancies are relatively small (Schifferstein & Desmet, 2008). When a service environment is designed in orange and yellow colours, round shapes, and soft materials, a warm fragrance such as sandalwood fits better than fresh peppermint. However, a subtle colourful 'cold' accent in turquoise may be experienced as a pleasant surprise that fit within

the boundaries of what consumers appreciate. Knowing this, designers and service experts can play with the orchestration of cues to convey a desired (hospitality) experience.

Environmental factors may also foster hospitable behaviour of people, in this way indirectly affecting the experience of hospitality. Chapter 5 presented literature that shows that physical warmth leads to more helping behaviour, and Liljenquist, Zhong, and Galinsky (2010) found that people are more generous when they are in spaces that smell clean. Furthermore, a furniture barrier between people at a meeting, such as a table, increases the psychological distance between people, which reduces the emotional connection between them (Sundstrom & Sundstrom, 1986). In addition, a closer physical proximity increases the likelihood of encounters and thus the probability and frequency of face-to-face interactions. In the working environment, employees can be more brought into contact with each other by lowering physical barriers between cellular workspaces, placing desks opposite each other or offering one large worktable to work on (Khazanchi, Sprinkle, Masterson, & Tong (2018).

Environmental cues are one type of service cues that can be used to foster hospitality. However, the composition of cues to create hospitable service goes beyond the environmental cues. Consumers unconsciously build up their experience of hospitality based on all types of service clues of the organisation throughout the entire service process. As Chapter 1 has already shown, descriptions of hospitality in the literature indicate that organisations provide all kind of hospitality-related aspects, such as products (e.g. food and drinks), accommodation, entertainment, and courteous and generous hosts (see Table 1.2). Furthermore, Chapter 4 explained that consumers, next to the service itself, evaluate services based on environmental and social cues. Virtual servicescape and technological service cues are also contributing more and more to the way consumers experience services (e.g. Vilnai-Yavetz, I., & Rafaeli, 2016). Thus, the hospitality performance of an organisation depends on the total composition of all types of cues.

Next steps

This chapter shows that the hospitality of a service organisation can be defined as providing the orchestration of environmental, service, social and technological service cues, in such a way that consumers experience an optimal mix of *inviting*, *care* and *comfort*. This makes the abstract concept of the experience of hospitality more tangible. Within these boundaries, hospitality is a somewhat fluid concept: both the optimal blend of *inviting*, *care* and *comfort*, and the appropriate service cues that contribute to that desired experience of hospitality depend on factors such as the type of service environment, the kind of consumers and the moment in the hospitality journey.

This chapter took a general view on the influence of environmental service cues on the experience of hospitality in service environments. Figure 9.1 provides an overview of the environmental cues that, based on our empirical research, turned out to have an effect on the experience of *inviting*, *care* and *comfort* (marked in black). Additionally, the environmental cues are shown

that according to the literature may also contribute to the experience of hospitality (marked in grey).

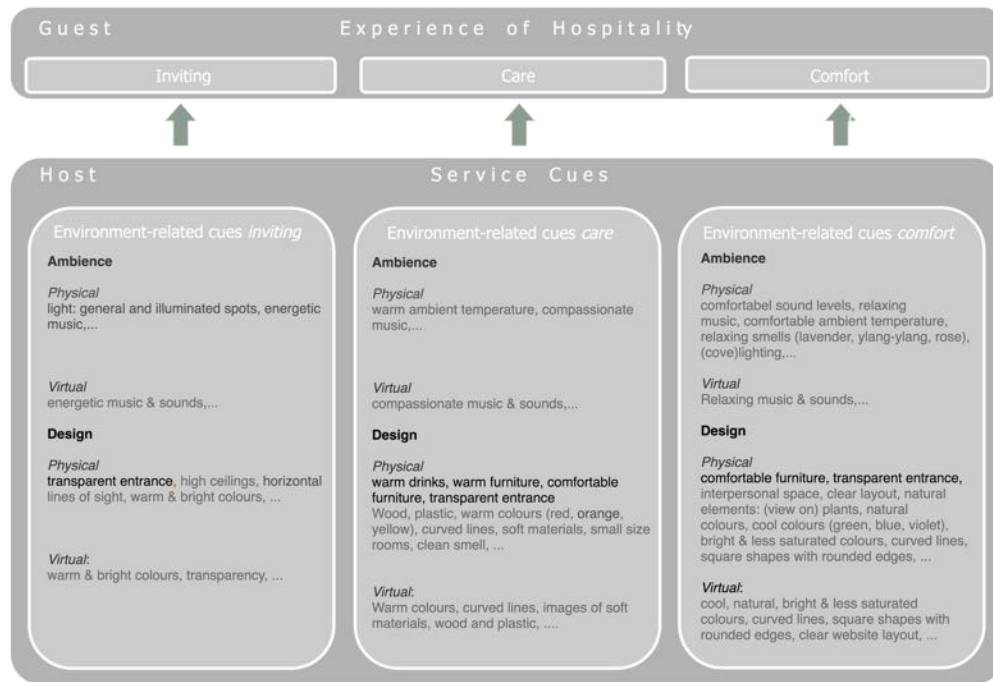


Figure 9.1. Overview of environment cues related to the three factors of the experience of hospitality (inviting, care and comfort) based on empirical evidence (black) or suggested by the literature (grey).

The ambition is to further complete Figure 9.1 by providing further empirical evidence for these environmental cues that seem to promote the experience of hospitality. In the future, we will hopefully be able to convert the grey-marked cues, which at this stage are still hypotheses based on the literature and ideas of experts and consumers, into orange-marked cues, which implies that there is empirical evidence for the effect. Furthermore, other environmental cues may be added to the list.

Moreover, also other types of service cues (service-related, social, virtual, and technological cues) need attention to control the hospitality performance of organisations further. We encourage academics, practitioners, architects and interior designers, to collaborate and contribute to expanding the knowledge in this area. In this way, the hospitable service provision can be professionalised to serve consumers in a pleasant, hospitable manner.

Concluding remarks

This dissertation offers service providers and designers some guidance for the design of hospitable services. Furthermore, it may assist educators in delivering up-to-date hospitality professionals. Finally, it provides scientists with a theoretical basis for research aimed at gaining more understanding of how different types of service cues contribute to a consumers' experience of hospitality.

All the effort to grasp the abstract concept of hospitality, for which this dissertation provides the first step, will help us to manage hospitality in the provision of services. Because most service organisations are quite complex, consisting of multiple touchpoints at which the organisation wants to be hospitable to the guests, the hospitality performance will improve when we can to a certain extent control the experience of hospitality. Over time, we will build up further scientific knowledge about the relationships between service cues and the experience of hospitality in various service contexts, and about the psychological processes involved. This will strengthen the foundations for designing hospitality.

Hopefully, this thesis will inspire service professionals, designers, teachers, researchers and anybody interested in hospitality, to pay attention to hospitality by stimulating the senses of guests in a pleasant way so that they feel invited, cared for and comfortable.

in brief

This final chapter places the knowledge that was obtained in this dissertation in a broader perspective. It is explored which environmental service cues, next to a transparent entrance, warm drinks and furniture, and comfortable seats may further influence people's experience of inviting, care and comfort. This overview serves as a basis for the design of hospitable service environments and for future research on the impact of environmental aspects on consumers' experience of hospitality.

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appendix

The experience of Hospitality Scale (EH-Scale)

Inviting	Organisation X feels inviting. Organisation X feels open. During my visit I experience freedom.
Care	Organisation X provides support to me. Organisation X is involved in me. I feel as I am treated like a king/queen. Organisation X does its best to take care of me. Organisation X relieves me of tasks or worries. Organisation X is interested in me. I feel important at organisation X.
Comfort	I feel at ease at organisation X. I feel comfortable at organisation X. I feel relaxed at organisation X.
Overall Experience of Hospitality	Overall, I experience organisation X as hospitable.

summary

Aim of the research

Hospitality applies to everyone. It comes close to our basic psychological need of feeling connected to other people. Personal attention, respect, being in touch and taking care of others are all aspects that are essential for our well-being. Also crucial for our well-being is the enjoyment of sensorial sensations, such as feeling the sun on your skin, enjoying delicious flavours, hearing lovely music, smelling delightful scents and seeing beautiful nature, buildings, art and people. Our body serves as the intermediary between the outside world that we perceive with our senses, and the inside world, where those perceptions are transformed into feelings and thoughts. The central theme of this dissertation is how our body acts as a conduit between the outside world of a service environment and the inner world of the experience of hospitality.

The provision of services is nowadays inextricably linked to hospitality. Service organisations, both inside and outside the hospitality industry, agree that hospitality is an essential element in the delivery of services. However, the concept of hospitality is still ill-defined. Especially the understanding of the concept from the viewpoint of the consumer is limited. Although there is a large body of academic literature on hospitality from various academic perspectives, we do not yet understand what people experience when they experience hospitality. The few studies that looked into hospitality from the consumer perspective concentrated on hospitable behaviour of service staff. However, customer experience is not only based on interaction with service staff but also on the interaction with the environment where the service takes place. The environment continuously affects us by stimulating our senses, but we are hardly aware of its influence.

Moreover, the physical environment has a significant function in providing a first impression of the service (Berry, Wall & Carbone, 2006). It is therefore very likely that environmental factors also are supposed to be involved in people's experience of hospitality. The influence of the environment on the experience of hospitality has received hardly any scientific attention. Consequently, the service industry lacks knowledge and tools to improve its hospitality by creating hospitable spaces.

People process information from the environment by using various mechanisms. Although people process their environment holistically (i.e. Bitner, 1992; Kim & Moon, 2009) there are on a detailed level also presumed one-to-one relationships between specific sensory attributes of the environment and the experiences that these elements evoke. The theory of embodied cognition assumes such one-to-one relationships. This theory states that bodily sensations affect our interpretation of the world. According to embodied cognition theory, thoughts, feelings, and behaviours have their origin in bodily interaction with the environment (Lobel, 2014). This theory served as a starting point for the research. Particular attention is paid to whether physical sensations,

resulting from sensory perceptions of the service environment, activate mental concepts related to hospitality and thereby improve the hospitality people experience.

The research aimed 1) to contribute to a better understanding and measurement of what consumers experience as hospitality in service environments and 2) to demonstrate that particular sensory cues of the service environment may contribute to the hospitality experienced at an organisation, and 3) to show whether the effects of the sensory stimuli on the experience of hospitality are embodied. The research brings together the academic field of hospitality, which has not yet connected the physical environment to the concept of hospitality, and environmental psychology and service marketing, where the effects of environmental variables are extensively studied but not yet concerning hospitality.

Defining and measuring the experience of hospitality

Part one contains the operationalisation of the concept of the experience of hospitality and the development of an instrument to measure it. The research starts in Chapter 1 with a global overview of scientific literature on the concept of hospitality. Four perspectives on hospitality are introduced: the historical perspective, the moral perspective, the exchange perspective, and the individual perspective (host or guest). This categorisation enables us to place the current research in the broad context of literature on hospitality. The present research belongs to the individual perspective of the guest. Chapter 1 further shows that, despite a large number of articles on hospitality, surprisingly little hospitality research has been done from the perspective of the guest. Although the literature has already provided starting points for what people may experience when they experience hospitality, empirical research is necessary to determine what consumers experience as hospitality in service environments.

Chapter 2 explores what hospitality means according to service practitioners and consumers. The chapter shows that the service industry needs a better understanding of hospitality. Two qualitative studies with both service experts and service consumers succeeded in making the abstract concept of hospitality more tangible. The qualitative studies revealed that the core of the concept of hospitality is personal attention for the guest. This personal attention may be expressed in six dimensions. Hospitality is about feeling welcome and invited (welcome), feeling comfortable and relaxed (at ease), and feeling that the organisation understands your needs (empathy). Hospitality also means feeling appreciated, important, acknowledged and respected (acknowledgement), and refers to a sincere willingness to help and meet consumer needs (servitude). Finally, experiencing hospitality has to do with being able to influence the course of events yourself, the freedom to determine how things go (autonomy).

Chapter 3 shows us that this detailed description of the experience of hospitality can be summarised in three key-words: *inviting*, *care* and *comfort*. Thus, people experience the hospitality of an organisation when they receive personal attention because they *feel invited*, *feel comfortable* and have the feeling that the organisation takes *care* of them. Furthermore, a compact questionnaire is

presented to measure the experience of hospitality in service environments. The Experience of Hospitality Scale (EH-Scale) was developed and validated in different types of service organisation, resulting in an instrument that is applicable to all types of service organisations. The EH-Scale measures the experience of the three discriminating factors with 13 items. The three factors *inviting*, *care* and *comfort* together explain 64% of the variance of the overall experience of hospitality, indicating an adequate coverage of the construct. The studies suggest that all three aspects of hospitality play a role in every service organisation, but their importance varies from organisation to organisation. Chapter 3 shows, for example, that *inviting* is more relevant for the experience of hospitality in a catering company than in a hospital. Contrary, in a hospital, the experience of *care* is more relevant than in a catering company. Making the concept of hospitality more concrete by defining its components not only ensures that we know better what we are talking about, but also offers the opportunity for improving our hospitality performance. The EH-Scale is a necessary condition to examine the effect of environmental manipulations on the experience of hospitality.

Influencing the experience of hospitality

Part two contains the experimental research on the effects of particular physical sensation in the service environment on the experience of hospitality. The experimental research aims to show whether environmental service cues in a service environment contribute to the experience of hospitality, and to show to what extent the effects of these service cues on the experience of hospitality can be explained by embodied cognition theory.

Chapter 4 outlines the theoretical approach by explaining the focus on environmental service cues and introducing the theory of embodied cognition. According to the embodied cognition theory, one's body and mind are connected; a particular physical sensation will activate a corresponding mental metaphor. For example, people physically perceiving weight associate this with quality or something important (e.g. Ackerman et al., 2010). People perceiving physical warmth mentally associate this with a warm person or prosocial behaviour (Williams & Bargh, 2008a; Zwebner et al., 2014).

In the chapters 5, 6 and 7, for each of the three experiential factors of hospitality (*inviting*, *care* and *comfort*) an experimental study is performed. The experiments are carried out as much as possible in real-life settings because that is where hospitality occurs. Chapter 5 explores the role of the embodied concept of warmth by investigating the effects of warm drinks and warm furniture, specifically on the experience of the *care* factor. A real-life experiment in a theatre shows that warm drinks activate warmth, which in turn leads to an increased experience of the care factor of hospitality in the theatre foyer. Hence, embodied cognition is suggested to be the most likely mechanism involved. Warm furniture is also suggested to affect all factors of the experience of hospitality, but only for men. In contrast to what was expected, this effect seems not embodied. Different manipulations of physical warmth may affect the experience of hospitality by different

mechanisms. The embodiment of the effect may be related to whether the physical sensation is appropriate in the service situation. Having a hot drink is a logical sensation in a theatre, while heated cushions are unusual in a theatre foyer, especially at rather high ambient temperatures.

Chapter 6 describes a study on the role of the embodied concept of comfort. We show that in a self-service restaurant of a large furniture chain seating comfort influences the *comfort* factor of the experience of hospitality. Mental comfort mediates the effect, also suggesting embodied cognition as the underlying mechanism. Moreover, the effect of seating comfort depends on acoustic comfort and on the extent to which people had the desire to sit. Besides this specific one-to-one embodied relationship between physical seating comfort and mental comfort, also more complex effects apply, in which variables interact.

Chapter 7 presents a pre-study and an innovative virtual reality experiment on the influence of the embodied concept ease of access on the experience of *inviting*, by manipulating visual transparency and door opening at the entrance of a building. The virtual service environment is framed either as a hotel or a dental practice. Door opening does not affect the experience of hospitality, but visual transparency increases the experience of both *inviting*, *comfort* and *care*, in both a hotel and a dental practice. Mental ease of access mediates the effect, suggesting that embodied cognition is involved. Furthermore, besides mental ease of access, also the visual aesthetics of the building mediates the effects, especially at the dental practice. Furthermore, Chapter 7 shows that visual transparency influences the experience of hospitality through different routes, involving different mechanisms. Embodied cognition seems one mechanism, but the model also suggests disembodied mechanisms. Likely, several mechanisms are involved in the transfer of a visually transparent entrance to the experience of hospitality associated with the organisation. Moreover, these mechanisms, to some extent, depend on the service context (hedonic or utilitarian).

Theoretical and practical contributions

Part three reflects on the theoretical and practical contributions of the research. Chapter 8 discusses the academic contribution of the research, starting with the multidisciplinary approach (combining knowledge from hospitality, services marketing and psychology), the unravelling of the concept of the experience of hospitality, and the development and validation of the EH-Scale.

Moreover, this dissertation offers empirical support for the contribution of the service environment to people's experience of hospitality. The research demonstrated that particular environmental service cues affect the experience of hospitality. Besides, it provides empirical support for embodied cognition as one of the mechanisms involved in processing sensory perceptions of the environment the experience of hospitality.

Chapter 9 places the knowledge that was obtained in this dissertation in a broader perspective. It is explored which environmental service cues, next to a transparent entrance, warm drinks and furniture, and comfortable seats may further influence people's experience of *inviting*, *care* and *comfort*. This chapter serves as inspiration for service experts and designers to

create hospitable environments. Furthermore, the chapter provides starting points for future research into the influence of environmental variables on the experience of hospitality. Hopefully, this thesis will inspire service professionals, designers, teachers, researchers and anybody interested in hospitality, to pay attention to hospitality by stimulating the senses of guests in a pleasant way so that they feel invited, cared for and comfortable.

samenvatting

Doel van het onderzoek

Gastvrijheid is een essentiële universele waarde. Zowel het bieden van gastvrijheid als het ontvangen van gastvrijheid is onderdeel van het menselijk bestaan. Gastvrijheid raakt aan de psychologische basisbehoefte van mensen om zich verbonden te voelen met andere mensen. Persoonlijke aandacht, respect en contact zijn aspecten die essentieel zijn voor ons welzijn.

Daarnaast zijn ook zintuiglijke prikkels van groot belang voor ons welzijn. Het voelen van de warmte van de zon op de huid, het genieten van lekkere smaken, het horen van mooie muziek, het ruiken van heerlijke geuren en het zien van prachtige natuur, gebouwen, kunst en mensen geven het leven betekenis. Ons lichaam dient als intermediair tussen de buitenwereld die de mens met zijn zintuigen waarneemt en de binnenwereld, waar die waarnemingen worden omgezet in gevoelens en gedachten. Het centrale thema van dit proefschrift is hoe mensen de buitenwereld van dienstverlenende organisaties innerlijk vertalen naar een beleving van gastvrijheid.

Dienstverlening is tegenwoordig onlosmakelijk verbonden met gastvrijheid. Zowel binnen als buiten de gastvrijheidsindustrie is gastvrijheid zelfs een essentieel onderdeel van de dienstverlening. Consumenten hechten steeds meer waarde aan de manier waarop diensten worden verleend. Zowel organisaties als consumenten benoemen dat gastvrijheid gaat over zaken zoals aandacht, welkom, respect, empathie en vriendelijkheid. Daar blijft het vaak bij. Er is nog onvoldoende bekend over wat een organisatie precies gastvrij maakt.

Ondanks de grote hoeveelheid literatuur over gastvrijheid is nauwelijks onderzoek gedaan naar gastvrijheid vanuit het perspectief van de gast. Uit de omgevingspsychologie en service marketing-literatuur is bekend dat klanten de kwaliteit van de dienstverlening beoordelen op basis van het product of de dienst zelf, het contact met medewerkers en de omgeving van de organisatie. Met betrekking tot gastvrijheid is het gedrag van servicemedewerkers cruciaal. Dit krijgt zowel in de literatuur als in de praktijk ook de meeste aandacht. De rol van de omgeving in de gastvrijheidsbeleving krijgt echter nauwelijks aandacht, terwijl de omgeving ons voortdurend beïnvloedt door de zintuigen te prikkelen. Continu registreert het menselijk lichaam prikkels zoals geuren, kleuren, geluiden, licht, beweging, temperatuur en textuur. Echter, omdat de verwerking van deze zintuiglijke prikkels voornamelijk onbewust plaatsvindt, zijn we ons nauwelijks bewust van de invloed ervan.

Mensen verwerken informatie uit de omgeving met behulp van verschillende mechanismen. Zij verwerken hun omgeving holistisch (i.e. Bitner, 1992; Kim & Moon, 2009), waarbij alle waarnemingen samensmelten tot één algemene indruk. Daarnaast zijn er ook specifieke één-op-één-relaties tussen bepaalde sensorische aspecten en de ervaring die deze elementen oproepen. De theorie van de *embodied cognition* heeft betrekking op dergelijke één-op-één-relaties. Deze theorie stelt dat lichamelijke sensaties onze interpretatie van de wereld beïnvloeden. Veel gedachten,

gevoelens en gedragingen hebben hun oorsprong in lichamelijke interactie met de omgeving (Lobel, 2014). Dat zien we ook in onze taal, in uitdrukkingen zoals ‘een warme persoonlijkheid’, ‘een zware beslissing’ en ‘het licht zien’. Een lichamelijke sensatie activeert de mentale metafoor die daarbij hoort of andersom. Zo wekt een zwaar boek de indruk dat de inhoud ook ‘zwaar’, dus belangrijk is (Jostman et al., 2009). Het geluid van het sluiten van een autoportier geeft een indruk van de degelijkheid van de auto (Bezat et al., 2014); het portier van een Volvo klinkt zwaarder dan het portier van een Dafje. Deze theorie van *embodied cognition* dient als uitgangspunt voor het onderzoek. Centraal staat de vraag of bepaalde lichamelijke sensaties in de dienstverlenende omgeving de bijbehorende mentale metafoor die gerelateerd is aan gastvrijheid activeren en zo bijdragen aan een gastvrije ervaring.

Het onderzoek heeft als doel om 1) bij te dragen aan het begrijpen en meten van de gastvrijheidsbeleving in dienstverlenende organisaties, 2) aan te tonen dat zintuiglijke kenmerken van de omgeving bijdragen aan de gastvrijheidsbeleving en 3) te onderzoeken of de effecten van de zintuiglijke kenmerken op de gastvrijheidsbeleving verklaard kunnen worden door de *embodied cognition*theorie.

Het onderzoek combineert inzichten op het gebied van gastvrijheid, waar nog nauwelijks aandacht is voor de omgeving, met inzichten uit de omgevingspsychologie en dienstenmarketing, waar veel kennis is over de rol van de omgeving in dienstverlening, echter nog niet in relatie tot gastvrijheid.

Het begrijpen en meten van gastvrijheidsbeleving

Het eerste deel van het proefschrift betreft de operationalisatie van het begrip gastvrijheidsbeleving en de ontwikkeling van een instrument om dit te meten. Hoofdstuk 1 geeft een globaal overzicht van de wetenschappelijke literatuur op het gebied van gastvrijheid. Het hoofdstuk introduceert vier perspectieven van waaruit gastvrijheid wordt bestudeerd: het historische perspectief, het morele perspectief, het uitwisselingsperspectief en het individuele perspectief (gastheer of gast). Deze indeling maakt het mogelijk om het huidige onderzoek te plaatsen in de brede context van de literatuur over gastvrijheid. Dit promotieonderzoek bekijkt gastvrijheid vanuit het individuele perspectief van de gast. Hoofdstuk 1 laat verder zien dat ondanks de grote hoeveelheid literatuur over gastvrijheid, verrassend weinig onderzoek is gedaan naar gastvrijheid vanuit het perspectief van de gast. Hoewel de literatuur aanknopingspunten biedt voor wat mensen mogelijk ervaren als gastvrij, is empirisch onderzoek nodig om beter te begrijpen wat consumenten als gastvrijheid beschouwen.

Hoofdstuk 2 gaat in op de betekenis van gastvrijheid volgens servicemedewerkers en consumenten. Kwalitatief onderzoek met zowel service-experts (studie 1) als met serviceconsumenten (studie 2) resulteerde in het concreter maken van het abstracte begrip gastvrijheidsbeleving. De kern van dit begrip is het ervaren van persoonlijke aandacht. Deze persoonlijke aandacht kan in zes verschillende dimensies van gastvrijheidsbeleving tot uitdrukking komen. Persoonlijke aandacht kan worden ervaren door een welkom en uitnodigend gevoel (dimensie *welkom*). Gastvrijheid betekent ook dat

je je comfortabel en ontspannen voelt (dimensie *op gemak*) en het gevoel hebt dat de organisatie jouw wensen en behoeften begrijpt (dimensie *begrip*). Gastvrijheidsbeleving is daarnaast je gewaardeerd, belangrijk, erkend en gerespecteerd voelen (dimensie *erkenning*) en de ervaring dat de ander het jou oprecht naar de zin wil maken (dimensie *dienstbaarheid*). Ook heeft gastvrijheid te maken met zelf invloed hebben op de gang van zaken, de vrijheid om zelf (gedeeltelijk) te bepalen hoe dingen gaan (dimensie *autonomie*).

Hoofdstuk 3 laat zien dat de gedetailleerde beschrijving van de zes dimensies van de beleving van gastvrijheid kan worden samengevat in drie kernwoorden: *inviting*, *care* en *comfort*. De eerste factor, *inviting*, geeft aan hoe uitnodigend, open en vrij een organisatie overkomt. De tweede factor, *care*, heeft betrekking op de ervaren zorg van de organisatie. Voelt de gast zich begrepen en gesteund? Doet de organisatie moeite om hen te helpen en is zij werkelijk geïnteresseerd in haar gasten? De derde factor, *comfort*, gaat over het gevoel van de gast. Voel je je als gast ontspannen en op je gemak? Op basis van deze drie factoren is vervolgens een compacte vragenlijst ontwikkeld om de beleving van gastvrijheid in service-omgevingen te meten. De *Experience of Hospitality Scale* (EH-Schaal) is ontwikkeld en gevalideerd in verschillende typen dienstverlenende organisaties, met als resultaat een instrument dat toepasbaar is op alle typen dienstverlenende organisaties. De EH-schaal meet de ervaring van de drie discriminerende factoren met 13 items. De drie factoren *inviting*, *care* en *comfort* samen verklaren 64% van de variantie van de totale ervaring van de gastvrijheid. Dit betekent dat de 13 vragen van de schaal de gastvrijheidsbeleving voor 64% kunnen voorspellen. Dat is een goede score voor een vragenlijst. Verder blijken de drie factoren op iedere organisatie van toepassing, alleen verschilt de relevantie van de factoren per organisatie. De factor *inviting* blijkt bijvoorbeeld relevanter voor de gastvrijheidsbeleving in een cateringbedrijf dan in een ziekenhuis. Echter, in een ziekenhuis blijkt de *care* factor juist meer van belang.

Het concretiseren en meetbaar maken van het begrip gastvrijheid zorgt niet alleen voor meer inzicht in wat gastvrijheid betekent voor gasten, maar biedt ook aanknopingspunten om de gastvrijheid van organisaties te verbeteren. De EH-Schaal is bovendien een noodzakelijke voorwaarde voor het tweede deel van het proefschrift, waarin de effecten van omgevingsaspecten op de beleving van de gastvrijheid worden onderzocht.

Het beïnvloeden van gastvrijheidsbeleving

Het tweede deel van het proefschrift bevat de experimentele studies naar de effecten van zintuiglijke kenmerken van de dienstverlenende omgeving op de gastvrijheidsbeleving. Dit experimentele onderzoek heeft tot doel om aan te tonen dat omgevingsaspecten in een service-omgeving bijdragen aan de beleving van gastvrijheid. Daarnaast wordt onderzocht in hoeverre de effecten van deze omgevingsaspecten op de beleving van gastvrijheid kunnen worden verklaard door *embodied cognition*.

Hoofdstuk 4 licht de focus op omgevingsaspecten van dienstverlenende organisaties nader toe en introduceert de theorie van *embodied cognition*. Volgens de *embodied cognition*theorie zijn lichaam

en geest met elkaar verbonden. Bepaalde fysieke sensaties activeren de bijbehorende mentale metafoor. Bijvoorbeeld, iets wat hoog gepositioneerd is komt machtiger over dan iets wat laag is gepositioneerd (o.a. Zanolie et al., 2012). Op een organogram staan niet voor niets de meest machtige personen bovenaan in het schema. Organisaties met aanzien zijn vaak gehuisvest in gebouwen met een grote statige trap naar de ingang, die daardoor hoger ligt. Ook leidt fysieke warmte tot mentale warmte. Mensen die een warm drankje vasthouden beoordelen een onbekende als een warmer persoon dan mensen die een koud drankje vasthouden (Williams & Bargh, 2008a; IJzerman & Semin, 2009).

In de hoofdstukken 5, 6 en 7 is voor elk van de drie factoren van de gastvrijheidsbeleving (*inviting*, *care* en *comfort*) een experiment uitgevoerd. De experimenten vinden zoveel mogelijk plaats in de praktijk. In hoofdstuk 5 staat de metafoor *warmte* centraal, waarbij gekeken wordt of fysieke warmte leidt tot mentale warmte en daarmee positief bijdraagt aan de gastvrijheidsbeleving (*care* factor). Fysieke warmte is gemanipuleerd door de temperatuur van drankjes en (wel/niet) verwarmde kussens op de stoelen in een theaterfoyer. Het experiment laat zien dat een warm drankje inderdaad leidt tot mentale warmte, wat vervolgens resulteert in een verhoogde beleving van *care* in de foyer van het theater. *Embodied cognition* lijkt inderdaad het onderliggende mechanisme van dit effect te zijn. De verwarmde stoelkussens hebben ook een positieve uitwerking op de gastvrijheidsbeleving, maar alleen voor mannen. In tegenstelling tot wat verwacht werd, lijkt dit effect niet *embodied* te zijn. Verschillende manipulaties van fysieke warmte kunnen de ervaring van gastvrijheid dus op verschillende manieren beïnvloeden. De *embodiment* van het effect kan gerelateerd zijn aan de vraag of de fysieke gewaarwording past bij de specifieke situatie. Het drinken van een warme drank past in een theater, terwijl verwarmde kussens daar ongebruikelijk zijn, vooral in deze situatie waarin de omgevingstemperatuur al relatief hoog was.

Hoofdstuk 6 beschrijft een studie naar de rol van de metafoor *comfort*, waarbij gekeken wordt of fysiek comfort leidt tot mentaal comfort en daarmee positief bijdraagt aan de gastvrijheidsbeleving (*comfort* factor). Fysiek comfort is gemanipuleerd door zitcomfort en akoestisch comfort in een zelfbedieningsrestaurant van een grote meubelketen. Zitcomfort blijkt inderdaad van invloed op de *comfort* factor van de beleving van de gastvrijheid. Mentaal comfort medieert het effect, hetgeen ook hier wijst op *embodied cognition* als onderliggend mechanisme van het effect. Daarnaast blijkt het effect van zitcomfort afhankelijk van het akoestisch comfort en van de mate waarin mensen de behoefte hebben om te zitten. Dus naast deze specifieke één-op-éénrelatie tussen fysiek en mentaal comfort, spelen ook complexere interacties tussen variabelen een rol.

Hoofdstuk 7 beschrijft een pilotstudie en een innovatief virtual reality-experiment naar de rol van de metafoor *toegankelijkheid*. Hierbij wordt gekeken of fysieke toegankelijkheid leidt tot mentale toegankelijkheid en daarmee positief bijdraagt aan de gastvrijheidsbeleving (*inviting* factor). Fysieke toegankelijkheid is gemanipuleerd door de visuele transparantie van de ingang en door de snelheid waarmee de toegangsdeuren tot het gebouw opengaan. De virtuele service-omgeving van een ontvangstruimte wordt gebruikt als hotellobby en als tandartspraktijk.

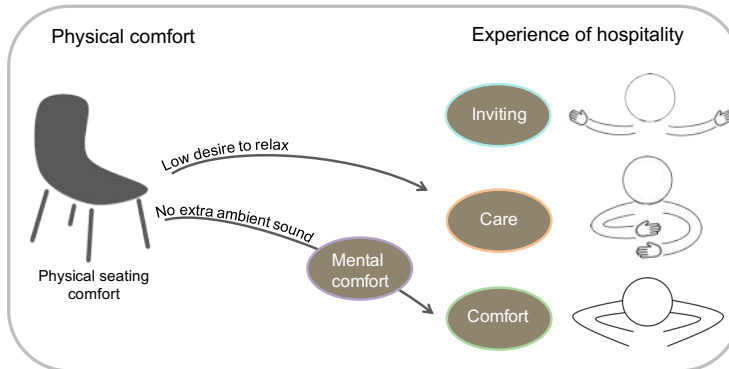
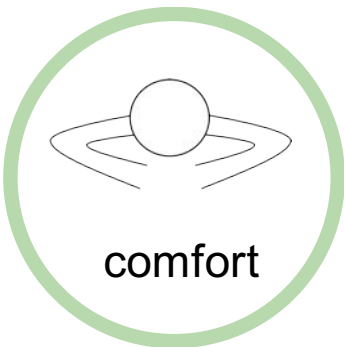
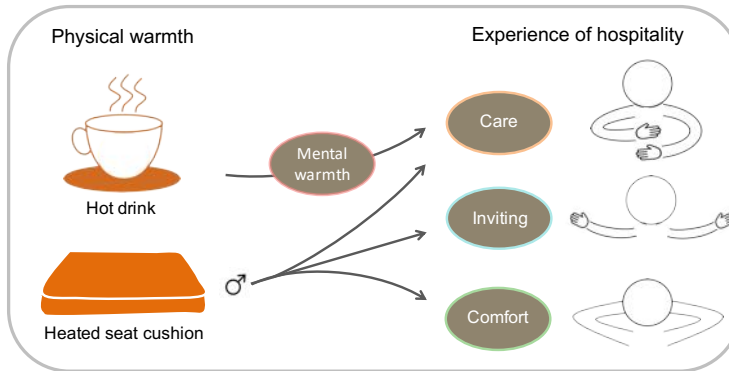
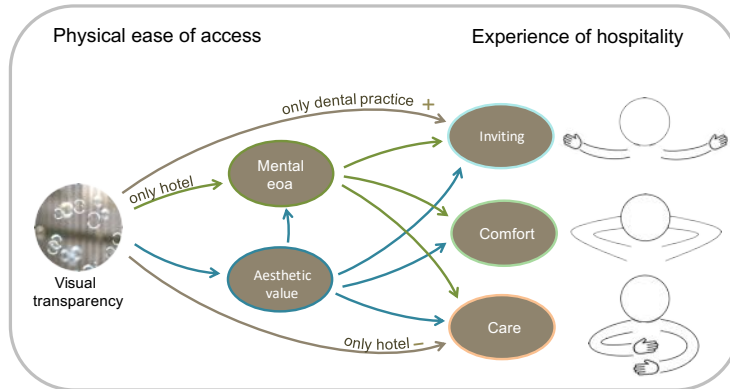
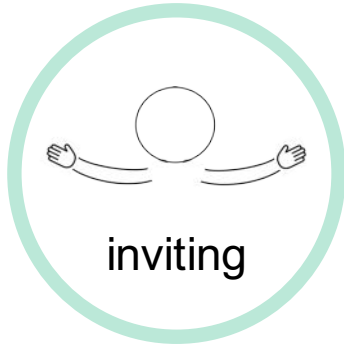
De snelheid van de deuren blijkt geen invloed te hebben op de gastvrijheidsbeleving. De visuele transparantie daarentegen verhoogt de beleving van zowel *inviting*, *care* en *comfort*, én in een hotel én in een tandartspraktijk. De effecten liepen (deels) via de mentale toegankelijkheid van de organisatie, wat suggereert dat ook hier sprake is van *embodied cognition* als verklarend mechanisme. Echter, naast de mentale toegankelijkheid blijkt ook visuele aantrekkelijkheid van het gebouw van invloed op de gastvrijheidsbeleving, met name in de tandartspraktijk. De visuele transparantie blijkt gastvrijheidsbeleving via verschillende routes te beïnvloeden, waarbij ook verschillende mechanismen betrokken zijn. *Embodied cognition* is er één van, maar ook andere mechanismen spelen een rol bij de verwerking van visuele transparante tot een indruk over de gastvrijheid van de organisatie, waarbij associatieve netwerktheorie een mogelijke verklaring zou kunnen zijn. Bovendien kunnen deze mechanismen verschillen afhankelijk van het type organisatie.

Theoretische en praktische implicaties

Het derde deel van het proefschrift gaat in op de theoretische en praktische implicaties van het onderzoek. Hoofdstuk 8 bespreekt de theoretische bijdrage van het onderzoek, te beginnen met het ontrafelen van het concept gastvrijheidsbeleving en de ontwikkeling en validatie van de EH-Schaal. Daarnaast toont het proefschrift door middel van empirisch onderzoek aan dat omgevingsfactoren van invloed zijn op de gastvrijheidsbeleving van bezoekers van dienstverlenende organisaties. Daarnaast biedt het onderzoek ondersteuning voor de theorie van *embodied cognition*. In de praktijk van dienstverlening leidt fysieke warmte (warme drankjes) tot mentale warmte, fysiek comfort (comfortabele stoelen) tot mentaal comfort en fysiek toegankelijk (transparante ingang) tot mentale toegankelijkheid. Daarnaast laat het onderzoek zien dat deze *embodied* effecten kunnen doorwerken in een oordeel over de organisatie, in dit geval een oordeel over de gastvrijheid van die organisatie. Tevens laat het onderzoek zien dat naast *embodied cognition* ook andere mechanismen een rol spelen bij het verwerken van omgevingsaspecten tot een indruk van de gastvrijheid van een organisatie. Associatieve netwerktheorie is mogelijk één van die mechanismen.

Hoofdstuk 9 plaatst de kennis die dit proefschrift heeft opgeleverd in een breder perspectief. Beschreven wordt welke omgevingsaspecten, naast een transparante entree, een warm drankje, verwarmd meubilair en comfortabele stoelen, mogelijk nog meer bijdragen aan de beleving van *inviting*, *care* en *comfort*. Dit laatste hoofdstuk dient als inspiratie voor service experts en ontwerpers om gastvrije omgevingen te ontwerpen. Verder biedt het hoofdstuk aanknopingspunten voor toekomstig onderzoek naar de invloed van omgevingsvariabelen op de beleving van gastvrijheid. Hopelijk inspireert dit proefschrift service professionals, ontwerpers, docenten, onderzoekers en iedereen die geïnteresseerd is in gastvrijheid, om aandacht te besteden aan gastvrijheid door de zintuigen van gasten op een prettige manier te voeden, zodat zij zich welkom, ontzorgd en comfortabel voelen.

visual summary



dankwoord

Dit proefschrift presenteert de resultaten van 6.5 jaar onderzoek. Het was een bijzondere periode, ik heb ervan genoten. Naast de inhoud was het proces naar dit proefschrift zeker ook van waarde. Hoewel het doen van promotieonderzoek een individueel traject is, heb ik mij hierin nooit alleen gevoeld. Velen hebben mij gedurende deze periode geholpen door te inspireren, te motiveren, te faciliteren, te bekritisieren, te adviseren, te waarderen, mee te leven en te relativeren.

Allereerst gaat mijn dank uit naar Saxion. Dankzij de promotieregeling voor docent-onderzoekers op het HBO heb ik de gelegenheid gehad om deels binnen werktijd te werken aan het promotieonderzoek. Dank ook aan het management van de HBS voor de steun en ruimte die jullie mij hiervoor hebben gegeven. Ook dank aan voormalig lector Thomas Thijssen, die mij in de voorbereiding van het project heeft gestimuleerd en gefaciliteerd.

Mijn bijzondere dank gaat uit naar mijn promotor Ad Pruyn en mijn dagelijkse supervisors Mirjam Galetzka (UT) en Brenda Groen (Saxion). Wat een luxe was het dat jullie zoveel tijd hebben genomen om met mij mee te denken, mijn stukken te lezen en van waardevolle feedback te voorzien. Ad, toen ik jou voor het eerst ontmoette wist ik dat er bij een eventueel promotieonderzoek maar één mogelijke promotor was, en dat was jij. Jouw deskundigheid op het gebied van experimenteel onderzoek en zintuiglijke perceptie, in combinatie met jouw oog voor de praktische toepasbaarheid van wetenschappelijk onderzoek maakte jou de aangewezen persoon om mij te begeleiden in dit traject. Je stelde de kritische vragen die ik nodig had om verder te komen, hield mij op het rechte pad (of in ieder geval zo recht mogelijk) en tussen de regels door peilde je hoe het met me ging.

Mirjam, jouw enthousiasme voor het onderwerp, rijke onderzoekservaring en grote kennis van de literatuur hebben mij enorm geholpen. Blij was ik iedere keer met jouw gedegen feedback op mijn stukken. Bovendien gaf jij mij, en dat is niet onbelangrijk voor een promovendus, het gevoel dat het uiteindelijk allemaal wel goed zou komen. Brenda, ook jouw tips en commentaren waren zeer waardevol, zowel inhoudelijk als wat betreft de Engelse taal. Daarnaast bewaakte jij dat het werken aan mijn proefschrift te combineren bleef met mijn werkzaamheden voor Saxion. Ook onze treinreizen van Amersfoort naar Enschede karakteriseren de promotieperiode.

Daarnaast wil graag de leden van de promotiecommissie bedanken voor de tijd en moeite die zij hebben genomen voor het lezen van mijn proefschrift.

Ook wil ik alle organisaties bedanken die het onderzoek hebben mogelijk gemaakt: Deventer Schouwburg, IKEA Amsterdam, Virtual Dutchmen, Het Concertgebouw, Deventer Ziekenhuis, Appèl bedrijfs catering, NS, NH Hotels, CitizenM, ABN AMRO, Monuta, gemeente Deventer, Vakbeurs Facilitair, Asito en Menzis. Zonder jullie was dit onderzoek niet mogelijk geweest; gastvrijheid vindt immers plaats in de praktijk.

Een aantal studenten van de Hospitality Business School heeft mij in de eerste fase geholpen te onderzoeken wat gastvrijheid voor gasten betekent. Anouk Hölzken, Ellen van Limbeek, Femke Breukers, Mare Burggraaff, Mirte Metz en Susanne van den Hoek: zonder jullie had ik nooit zo grootschalig kwalitatief onderzoek kunnen doen naar de betekenis van gastvrijheid.

Daarnaast had mijn onderzoek niet kunnen plaatsvinden zonder alle 1928 mensen die hebben deelgenomen aan de verschillende studies, van de service experts die hun expertise en ervaring hebben gedeeld tot de gasten van de uiteenlopende organisaties die de tijd hebben genomen om hun persoonlijke indruk van de gastvrijheid te geven.

Warme betrokkenheid heb ik ervaren van de collega's van HBS en IDS die mijn onderzoek en het wel en wee dat daarbij hoort met belangstelling hebben gevolgd. Blij verrast was ik bovendien toen al bij de eerste resultaten collega's interesse toonden in de uitkomsten. Al snel zijn de inzichten in gastvrijheid op verschillende plekken in het onderwijs beland, via gastlessen maar ook als fundament voor een aantal modules. En dan zijn er mijn collega-Saxion promovendi. Eerst Michiel en Xander, die mij voorgingen en mij van nuttige tips hebben voorzien. Daarna Cindy, Leanne en Kim, wat was het fijn om ons lief en leed als promovendae met elkaar te delen. Helaas is in deze periode ook een aantal lieve collega's ons ontvallen: Frederiek (als er iemand gastvrijheid was...), Martine ("probeer vooral te genieten van de verdediging") en Petra (wat een aanstekelijk enthousiasme).

Ook Joren bedankt voor die keren dat ik gebruik mocht maken van jouw scherpe en associatieve geest bij het verkennen van mogelijkheden voor de experimentele studies. Ik hoop dat we dit in de toekomst kunnen blijven doen. En Merit, dankzij jou is er dit mooi vormgegeven boekje. Wat bijzonder dat onze vriendschap van vroeger zo een vervolg heeft gekregen.

En alle lieve vrienden (waaronder B7-NSO '96, de Buufjes+Ajeto's en de PV), dank voor jullie warme betrokkenheid bij de mooie en bij de soms wat mindere momenten in deze periode. In het bijzonder dank ik mijn paranimfen. Eefje, wij hebben samen veel meegemaakt, zoals samen op het terras tijdens de examenperiode, gratis drankjes in de kroeg (over gastvrijheid gesproken) en vele goede gesprekken. Ook bij mijn onderzoek dacht en leefde je mee. Hester, als warme, enthousiaste en sprankelende collega inspireer je mij steeds weer. Vaak dacht je met mij mee als ik een nieuwe fase van het onderzoek inging. Ik kon dan vol enthousiasme weer verder.

En natuurlijk mijn familie. Steven, Jonna, Joost, Margarethe en Lydian, dank voor jullie interesse tijdens dit traject. Henk, Gerda en Monique, ook jullie warme belangstelling en adviezen hebben mij goed gedaan. En mijn tantes Sjoukje en Dineke, veel dank voor jullie wijze woorden.

Papa en mama, jullie hebben mij meegegeven erop te vertrouwen dat alles altijd goed komt. En zo is het. Papa, jouw vertrouwen in mijn kunnen heeft mij gesterkt, zeker wanneer ik mij wel eens wat onzeker voelde (want ja, dat hoort ook bij promoveren). En mama, fysiek ben je er niet meer, maar ik voel nog altijd jouw warmte en steun.

Tot slot Maarten en de kinderen. Jelle, Willemien en Jet, jullie hielpen mij het promotie-onderzoek te relativiseren en vroegen belangstellend naar het aantal proefpersonen dat ik weer eens had gehad, of waarom ik met plakplastic en verwarmde kussens naar mijn werk ging, of wat er zou gebeuren als het allemaal niet zou lukken. Ook gaven jullie mij voldoende de ruimte om tijdens de corona-tijd, toen we vaak allemaal thuis waren, de laatste hoofdstukken van het proefschrift af te maken. En dan Maarten, wij hebben eigenlijk geen woorden nodig, maar toch. Jij brengt mij wanneer nodig terug naar de essentie, en zorgt voor humor, luchtigheid en plezier in het leven. Tijdens de totstandkoming van dit proefschrift kon jij vaak met een enkele opmerking mijn gedachten helpen structureren. Bedankt voor je liefde en steun.

Ik blik terug op een bijzonder leuke en leerzame periode, met de ups en downs die daar natuurlijk bij horen. De uitdaging en vrijheid van een groot onderzoeksproject op een thema dat mij na aan het hart ligt, de deskundige begeleiding, ik ga het zeker missen. Wel kijk ik ernaar uit om weer meer tijd te hebben voor anderen dingen. Met nieuwsgierigheid en vertrouwen kijk ik uit naar een nieuwe fase.

about the author

Ruth Pijls-Hoekstra (1973) studied psychology at the University of Amsterdam. She specialised in applied cognitive psychology and wrote her master thesis on the memory for odours.

After her graduation in 1997, Ruth started her career at the Netherlands Institute for the Study of Crime and Law Enforcement (NSCR) in Leiden, performing research on the reliability of eye-witness testimonies. In 1999 she joined the National Aerospace Centre (NLR) as a human factors psychologist, where she worked on human-centered aircraft maintenance procedures and human-machine interaction in the cockpit. From 2003 to 2009 she worked as project manager at Senta Multisensory Concepting, a marketing research and consultancy firm specialised in multisensory experience.

Since 2010 Ruth has been working at Saxion University of Applied Sciences as a researcher. She is currently a researcher in the research group Hospitality. At Saxion Hospitality Business School she teaches hospitality, customer experience, human-centered interior design and research methods in bachelor and master programmes.

In February 2014 Ruth started her PhD research on the experience of hospitality in service environments at the research group Communication Science, University of Twente, in cooperation with Saxion University of Applied Sciences. She presented her research at several national and international conferences, such as EuroCHRIE, FMIC and QUIS. In 2017 she won the EuroCHRIE Best Poster Award. In 2020 she won a Sage Concept Grant for innovative software tools for social research, to develop a tool that enables real-time measurement of consumer experiences in VR. This tool elaborates on the VR tool that was built for one of the experiments presented in this dissertation. Ruth's research interests include sensory perception, hospitality and customer experience.

