Which Seat Do You Choose to Sit Down?
Immediate and Anticipated Personal Space Considerations when Choosing a Seat in a Public Area

Master Thesis

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August 2020

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Abstract

In public areas, people often encounter situations of close proximity to others where it is likely that an individual's personal space (PS) gets intruded. PS is the area surrounding an individual that includes the intimate and personal domain (within 1.50 meters of a person). We aimed to investigate the role of PS in seating behavior and to extend previous research by distinguishing an immediate PS consideration (i.e., considering PS in the immediate situation) from an anticipated PS consideration (i.e., considering PS also in a possible future situation). We conducted an observational study ($N = 237$), an open-ended question study ($N = 40$), and an experimental online study using a mixed-design ($N = 325$) in the context of choosing a seat in a railway station concourse. The results revealed that most participants chose a seat outside their intimate and personal domain. We concluded that people try to safeguard their PS. Furthermore, immediate and anticipated PS considerations both play a role in seating behavior; however, both are merely facets of PS rather than two exclusive concepts. With our results, we hope to extend the theory of PS as well as inform and possibly influence the design of seating arrangements to optimize people's well-being in public areas.

Keywords: Personal space, immediate personal space consideration, anticipated personal space consideration, seat choice, public area

Which Seat Do You Choose to Sit Down?
Immediate and Anticipated Personal Space Considerations
when Choosing a Seat in a Public Area

Imagine the scene: You are waiting for your train and decide to sit down at a table in the station concourse. There are six stools, three on each side of the table. One corner stool is already occupied by a stranger. Which of the other five stools would you choose?

In public areas, people often encounter situations of close proximity to others. In these situations, it is likely that an individual's personal space (PS) gets intruded. PS is the area surrounding an individual and individuals are sensitive to intrusions of this space (Sommer, 1969). A PS intrusion can cause distress (Evans & Werner, 2007; Kaya & Erkip, 1999). As a consequence, individuals try to safeguard their PS (e.g., Sommer, 1969). In light of the predicted rapid increase of the density of urban areas (UN, 2018), the role of PS in public areas and the mechanisms people use to safeguard their PS should be investigated. Hence, the following question emerges: Do PS considerations influence people's seat choice in a public area? Previous studies showed that PS indeed affects people's seating behavior (e.g., Staats & Groot, 2019). We aimed to extend this line of research by asking whether people consider PS only at the moment when choosing a seat or whether they also consider a possible future situation, in which more people might sit with them. We, therefore, investigated the role of PS considerations in seating behavior by distinguishing an immediate PS consideration (i.e., considering PS only in the immediate situation) when choosing a seat in a public setting from an anticipated PS consideration (i.e., considering PS in a possible future situation). To answer these questions, we conducted an observational study, an open-ended question study, and an experimental online study in the context of choosing a seat in a railway station concourse.

Personal Space

PS is defined in differing ways. All definitions concur that PS is an essential element of social behavior because it influences interpersonal interactions as well as interactions with the physical environment (Hall, 1966, 1968; Hayduk, 1983). The classical proxemic theory defines four domains of interpersonal distance: the intimate domain (0 to 45 cm between individuals), the personal domain (45 to 120 cm between individuals), the social-consultative domain (120 to 400 cm between individuals), and the public domain (400+ cm between individuals; Hall 1966, 1968). PS refers to the intimate and personal domain. PS is not only about the distance between individuals, but it is also about other sensory factors like eye-gazing (Lewis, Patel, D'Cruz, & Cobb, 2017).

Factors Affecting Personal Space

Various factors affect PS. First, the type of relationship of the people is important, so being strangers, acquaintances, friends, or partners, affects PS (Evans & Howard, 1973). Also, age matters, as younger people tend to have a closer distance to each other than older people (e.g., Sorokowska et al., 2017). Next, gender may also play a role in PS, but research is inconsistent. Early literature stated that women prefer a closer distance, while a recent cross-cultural review found that women prefer a larger distance, especially towards strangers (Sorokowska et al., 2017). Furthermore, lonelier people (Layden, Cacioppo, & Cacioppo, 2018) as well as individuals with a higher independent relative to an interdependent self-construal (Holland, Roeder, Van Baaren, Brandt, & Hannover, 2004) are more likely to have a larger distance. Research has also examined the relationship between PS and certain personality variables. The findings are inconclusive, yet introversion, trait anxiety, and disgust sensitivity were found to have an influence (e.g., Park, 2015). Social anxiety is another individual difference that influences PS, in as far as social anxious people show reactions to violations of PS, such as looking away, already at a greater distance, even outside the personal domain (Wieser, Grosseibl, Molzow, & Mühlberger, 2010). PS also varies crossculturally, with colder countries preferring a larger distance (Sorokowska et al., 2017). Next to these individual differences, the specific environment and context, such as density or formality, and corresponding norms influence PS (Lewis et al., 2017). Overall, diverse factors affect PS and determine whether someone experiences a PS intrusion or not. If a PS intrusion is experienced, it can have negative consequences (e.g., Evans & Werner, 2007; Kaya & Erkip, 1999).

Personal Space Intrusions

Intrusions into the intimate or personal domain can cause distress, discomfort, withdrawal, or arousal (e.g., Hayduk, 1983). For example, a field study in a men's lavatory demonstrated that the closer a confederate stood, the more arousal was experienced by participants (Middlemist, Knowles, & Matter, 1976). Likewise, PS intrusions also cause stress for the intruder. For instance, participants that walked through the personal domain of two confederates reported less positive mood and displayed avoidant nonverbal behavior, such as eye-closing (Efran & Cheyne, 1975). Varying the amount of eye-contact is a common adaptive behavior to regulate PS intrusions, especially if individuals are not able to change the proximity towards another person (e.g., Efran & Cheyne, 1975). Even when interacting with a virtual person in virtual reality or with robots, participants have PS considerations comparable to real-life (Iachini, Coello, Fassinetti, Senese, Galante, & Ruggiero, 2016; Loth, Jettka, Giuliani, & De Ruiter, 2015; Nassiri, Powell, & Moore, 2010). Moreover, passengers that experienced a PS invasion by a stranger in an airplane reported being annoyed, feeling uncomfortable or irritated, and experiencing anger (Lewis et al., 2017). Passengers not only reported PS intrusions on the physical distance towards another human but also towards objects of another person, and sensory factors, like hygiene (Lewis et al., 2017). Overall, to avoid negative consequences people appear to consider their own and others' PS.

Privacy Regulation and Affiliative Conflict

Different theories predict the importance of PS considerations. Two of these theories are the privacy regulation theory (Altman, 1975) and the affiliative conflict theory (Argyle & Dean, 1965), which were previously used to explain peoples' seating behavior (Staats & Groot, 2019).

Privacy Regulation Theory

Privacy is the selective regulation of access to either oneself or one's group (Altman, 1975). People try to match their desired and achieved privacy. If individuals experience too little privacy, they will experience crowding (Altman, 1975). Crowding leads to withdrawal or negative interpersonal affect. Therefore, it is important for individuals to regulate privacy. For example, Baum and Greenberg (1975) investigated the effects of anticipated crowding and demonstrated that participants, who were expecting nine fellow participants compared to three in an experimental room, rated the room as smaller and the confederates as less positive. Interestingly, the participants also chose a more socially isolated and secure seat within the room. The authors concluded that people who anticipate crowding take preparatory actions to reduce the expected adverse effects of crowding (Baum & Greenberg, 1975). Their results also support the distinction of an immediate and anticipated PS consideration when investigating seating behavior.

Affiliative Conflict Theory

People have two divergent needs, namely the need for intimacy and the need for freedom and individuality (Argyle & Dean, 1965). People strive for a balance among the needs; yet, failing to reach this balance results in distress, anxiety, or loneliness (Argyle & Dean, 1965). PS is a mechanism that individuals use to reach this balance as well as to regulate privacy needs. Therefore, both theories can explain why individuals consider PS when choosing a seat while other people are present or will be present.

Choosing a Seat in a Public Setting

If an individual takes a seat in a public area, such as in a café or while waiting for the train, they might be close to others. When sitting close to a stranger, for example in a train compartment, people have shown to experience distress (Evans & Wener, 2007). Additionally, people avoid seats in a library that are within each other's PS (Eastman & Haper, 1971). People also prefer tables that provide a physical feature, which serves to separate tables from each other, as this offers control over PS (Robson, Kimes, Becker, & Evans, 2011). Staats and Groot (2019) demonstrated that café-goers are sensitive to the amount of eye-contact and physical distance to others at the same table when choosing a seat. The majority of participants preferred a seat in a café setting that provided high privacy, such as seats anchored to a wall and low intimacy, so seats that allow for low or no eye-contact with other people (Staats & Groot, 2019). They concluded that both intimacy (affiliative conflict theory) and privacy (privacy regulation theory) concerns influence seating choice in a public café setting (Staats & Groot, 2019). Thus, individuals indeed seem to choose seats based on how much PS is provided to regulate their privacy and intimacy needs.

Overview of the Studies and Hypotheses

People try to safeguard their PS to regulate their needs. Yet, the question remains whether people only consider PS in the immediate situation or whether – when more people are expected – they also consider PS in an anticipated situation. As previous studies have shown that people seem to consider their PS when choosing a seat, we hypothesized:

H1: People try to safeguard their PS by choosing a seat that provides enough distance from another person in the given situation to remain outside their intimate and personal domain (immediate PS consideration).

Since Baum and Greenberg (1975) found that participants expecting more fellow participants chose different seats than those who were not, we hypothesized:

H2: People try to safeguard their PS in anticipation of other people by choosing a seat where it is least likely that an additional person will sit inside their intimate and personal domain (anticipated PS consideration).

We, therefore, predicted that people both have an immediate and an anticipated PS consideration. If individuals consider further persons when choosing a seat, we predicted that they would choose a seat where it is least likely that an additional person is going to sit either directly beside or opposite themselves. Notably, one PS consideration does not exclude the other; specifically, for the anticipated PS consideration, we predicted that the seat choice is still providing enough PS in the immediate situation. On the other hand, some seat choices might only provide PS in the immediate situation, yet not in an anticipated situation, with seats where it is more likely that another person is going to sit either directly opposite or beside someone. We also predicted that one or the other PS consideration is more pronounced depending on the conditions of the specific environment individuals are in, again based on Baum and Greenberg's findings (1975). Specifically, we predicted that, if more people are expected, such as in a busy environment, the anticipated PS consideration is pronounced. Thus, we hypothesized:

H3: In a busy environment relative to a non-busy environment, people are more likely to safeguard their PS in anticipation of other people by choosing a seat where it is least likely that an additional person will sit inside their intimate or personal domain (pronounced anticipated PS consideration).

To test these hypotheses, we conducted three studies, all in a train station setting. The seating arrangement comprised a rectangular table with six stools, three on each side of the table (Figures 1, 4, & 5). We specifically focused on the situations of an empty table, as well as on the situation where a person already occupied one corner seat. Additionally, in the online study, we introduced an experimental manipulation of a busy and non-busy environment. Moreover, we conducted an exploratory analysis to see whether immediate PS and anticipated PS considerations are two facets of PS and whether some other factors than PS predict seat choice. With our results, we hope to extend the theory of PS and additionally inform as well as possibly influence the design of seating arrangements to optimize people's well-being in public areas.

Study 1: Observational Study

Method

In this observation study, we investigated whether people prefer a seat that provides a certain distance from a person already sitting to be outside the immediate and personal domain, relative to other seats.

Participants

The participants in our study were people sitting at tables in the station concourse at Leiden central station. In total, we made 237 observations, of which 191 were solitary persons (104 male, 87 female) and 46 were couples (10 male couples, 12 female couples, and 24 mixed couples). For the purpose of our study, we only focused on solitary persons.

Procedure

We started with a trial observational session. Two observers recorded the same setting. The accuracy of the observers proved to be sufficient and, therefore, we continued the actual observational study with only one observer. The observations were conducted at intervals of 60 to 120 minutes, both during rush hour and less busy times. We observed spontaneously occurring situations and recorded which seats were occupied, where a person chose a seat, and the gender of the person. Observed persons were debriefed afterward.

Setting

In the concourse of Leiden central station are several tables, where passers-by and customers of various dining facilities can sit down (Figure 1). Two tables of low (L), medium (M), and high (H) height are available. Two tables of the same size are adjacent to each other and separated by a trashcan. The highest table has no seats, as it is for standing only. The table of low and medium height has a bench or three stools on each side, respectively. The benches and stools cannot be moved, as they are attached to the floor

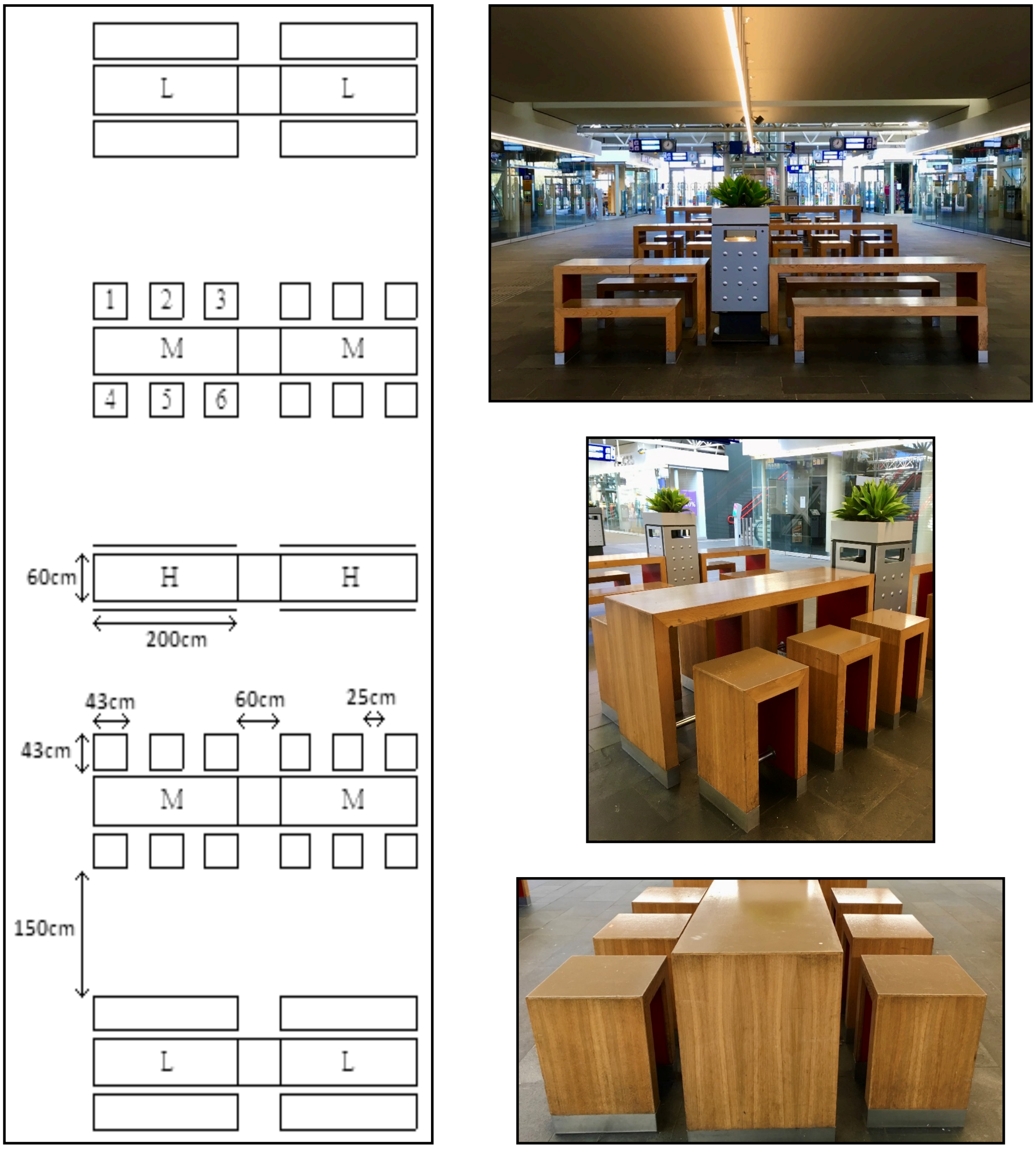

Figure 1. Seating arrangement at Leiden central station

For the purpose of our study, we only documented the seating arrangements at the tables with the stools (M). The measurements of the stools are 43 by 43 centimeters. Two stools are 25 centimeters apart. The distance between two people sitting across from each other is about 60 centimeters and, thus, most likely to be in the personal domain (Hall, 1966, 1968). The largest possible distance between two people at one table is approximately 210 centimeters (the diagonal between stool 1 and 6, Figure 4), which is, according to Hall (1966, 1968), outside the intimate and personal domain. The distance between two people that are sitting diagonally opposite each other (e.g., stool 2 and 6) is approximately 115 centimeters. The distance between two corner stools on the same side (e.g., stool 4 and 6) is also approximately 115 centimeters. A distance of 115 centimeters is on the verge of the personal domain according to Hall's proxemic theory (1966, 1968).

Statistical Analysis

We observed different situations with either an empty table as well as one, two, or three stools already occupied. We inspected frequency statistics and run chi-square tests for the two most common scenarios (empty scenario = no one sitting at table, occupied scenario = one corner seat occupied) with SPSS (IMB Corp., Version 26).

Results

People seem to prefer a seat that is outside their intimate or personal domain: 84.3% of observed people chose a seat that is, if possible, at least one seat apart from either one, two, or three persons already sitting. The settings with an empty table as well as stool 6 already occupied were observed most often (both 37%).

Most participants preferred a corner stool compared to a middle stool (Figure 2) in the empty scenario. Therefore, people did not choose a seat at random when sitting down at an empty table, $\chi^2(1) = 8.63$, $p = .003$ (we adjusted for corner stools being twice as common as middle stools). Thus, in this specific scenario, people choose a stool that also provides anticipated PS, where it is according to our classification least likely that an additional person will either sit directly opposite or beside someone.

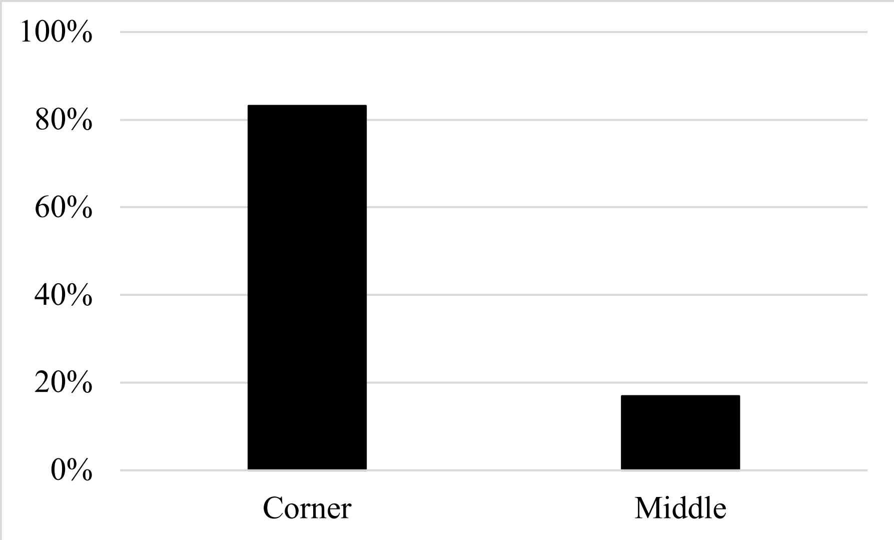

Figure 2. Observed seat choices in empty scenario. Corner = 83.10%, Middle = 16.90%

In the occupied scenario, the seat furthest away, stool 1, was most common. Followed by stool 4, and stool 2, while stool 3, so the stool directly opposite a person, was least likely (Figure 3). We did not observe someone sitting on stool 5, while stool 6 was occupied.

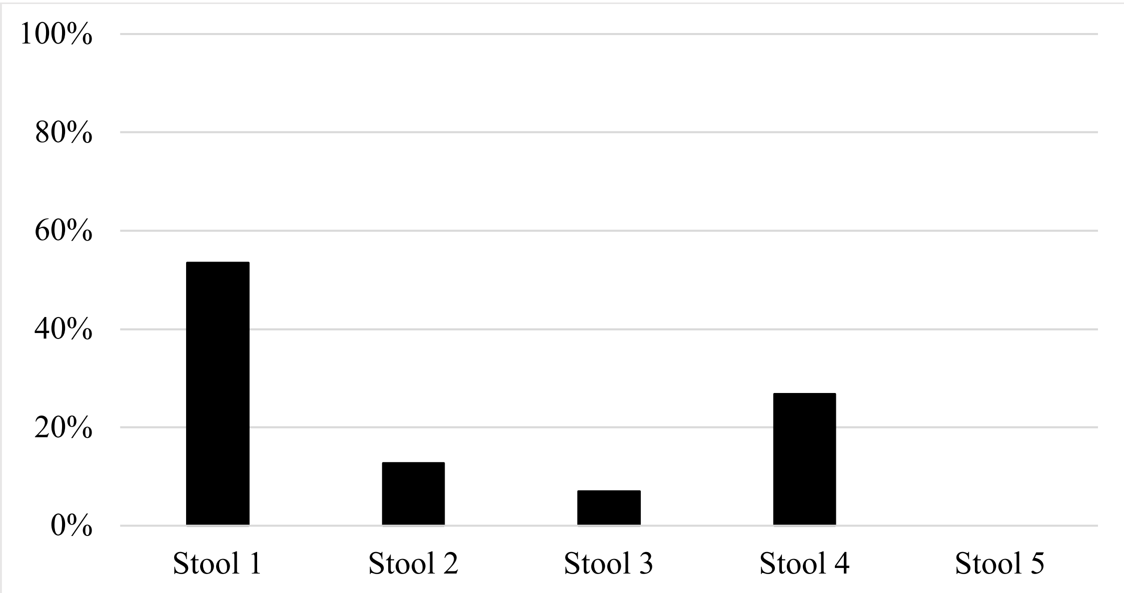

Figure 3. Observed seat choice in occupied scenario (stool 6 occupied). Stool 1 = 53.5%, Stool 2 = 12.7%, Stool 3 = 7%, Stool 4 = 26.8%, Stool 5 = 0%

Therefore, people do not choose a seat at random, $\chi^2(3) = 36.66$, $p < .001$. According to our classification, 39,4% chose a stool that provides, next to immediate, also anticipated PS characteristics (stool 2 and 4).

We observed some situations, where more than one stool was already occupied. In these situations, we observed that more than half of the persons turned around (53,4%). It seems that if a person cannot control for the physical distance towards another person, they adjust by reducing eye-contact.

Overall, the results support our first and second hypothesis because people try to safeguard their personal space as it was more likely that they chose a seat outside their intimate and personal domain if possible. According to our classifications, we can also see that people chose seats that can be classified as having additional anticipated characteristics, especially in the empty scenario, where immediate PS is provided. Yet, as this study is purely observational we cannot say what the motivations or reasons are for a certain seat choice. We, therefore, conducted an open-ended question study.

Study 2: Open-Ended Question Study

Method

We observed, that people prefer seats that provided a larger distance towards persons that already sit. With this study, we wanted to find out what people are thinking when they reflect on choosing a seat and whether they mention the PS concept.

Participants

Forty participants (34 women, M_{age} = 21) were recruited in the hallways of the faculty of behavioral and social science at Leiden University. Participants were randomly assigned to one of two versions of the study (empty scenario, occupied scenario).

Procedure and Materials

This study was a paper-and-pencil questionnaire. After participants read and signed an informed consent, they were asked to imagine that they are at Leiden central station waiting for the train and deciding to buy something to eat, and, therefore, to sit down at one of the tables that are at the station. Participants, thus, had to imagine the same setting as we had in our observational study. Next to the short introduction, we provided a simplified graphic of how one of the tables with six stools looks like (Figure 4).

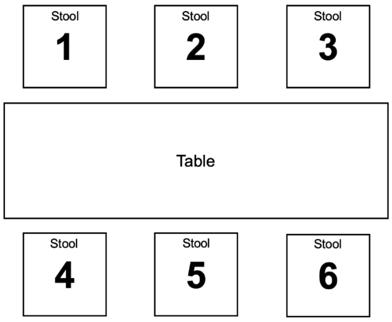

Figure 4. The seating arrangement at Leiden central station of the empty scenario

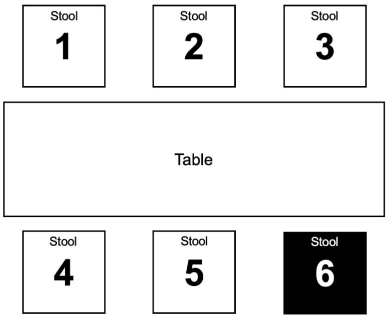

Figure 5. The seating arrangement at Leiden central station of the occupied scenario

We had two different versions of the scenario. In the first version, the table was empty (Figure 4) and participants were asked to answer the following open question: *"Would you choose stool **x**? Why? Why not? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think."* Participants were asked about stool 1 and 2. We kept the question quite open to prevent biasing participants about our hypotheses. In the second version, stool 1 was occupied (Figure 5), and participants were asked the same question about stool 2, 3, 4, 5, and 6. Notably, it is the same scenario as in the other two studies, just that stool 1 is occupied instead of 6; nevertheless, the same predictions apply. Half of the participants received the empty scenario, and every other participant received the occupied scenario. In the end, participants were asked to indicate their age, gender, familiarity with the seating arrangement, and which stool they would choose to sit down in the specific setting. Finally, participants were thanked for their participation.

Statistical Analysis

Two researchers, one of them blind to the study's aim and hypotheses, coded the answers of the open questions by counting how often the following concepts were mentioned in the answers. The concepts were: (personal) space for self and others (such as having enough space or too close to a stranger), privacy, feeling disturbed, norm (i.e., the norm of not sitting too close to others), certain seat position/characteristics preferred (e.g., corner over middle stool), comfort, feeling of control, psychological ownership, other concepts, eye-contact (only for the occupied scenario), and anticipation, so whether they mentioned people that might sit down at the same table as they are in a possible future setting. We chose these concepts because they are either facets of PS or closely related concepts (e.g., Altman, 1975). Notably, the questionnaires were in Dutch, thus, all answers were translated into English (see Appendix B). The counts of both coders were averaged.

Results

Eighty percent of our participants were (very) familiar with the seating arrangements at Leiden central station. In the empty scenario, 13 participants chose the corner stool, while three chose the middle stool, and four were indifferent. In the occupied scenario, 16 out of the 20 participants chose stool 6, while the remaining four chose stool 4.

Empty Scenario

Two concepts emerged most often, namely: "a certain seat position is preferred" and "(personal-) space" (Table 1). Most participants mentioned that they prefer a corner seat over a middle seat. Some participants elaborated further on why they prefer a corner stool and, interestingly, herein participants considered people that might come by to sit at the same table in a future setting. An additional person that might sit at the same table was especially considered when asked about the middle stool (9 out of 20 participants anticipated). For example: *"(..)Someone might sit next to me if I choose a middle seat."* or *"No because you would sort of keep stool 1 and 3 occupied.", "Others are less likely to sit if I choose a middle* *seat".* Yet, one of the participants preferred the middle stool because here it is *"easier to talk to other people".*

When asked about the corner stool, six participants took a future scenario into account. For example, *"If others come they are less likely to sit close by."*, *"Corner provides more personal space if someone else is going to sit down"*, or *"(...) If a stranger comes by, I prefer a corner seat. This gives a feeling of privacy."*

Table 1

Counts of mentioned concepts

Concept	Corner Stool	Middle Stool
(Personal) space for self or others	8	0
Enough space		
Not enough space	0	0
	0	3
Privacy	1	1
Feeling disturbed	0	1
Norm	1	2
Certain seat position preferred	10	8
Comfort		
Comfortable	3	0
Uncomfortable	0	3
Feeling of control	4	1
Psychological ownership	1	3
Other concepts		
Oversight	1	1
Speak with others	1	1
Anticipation?	6	9

To sum up, most participants prefer a corner seat, especially when anticipating other persons to sit down.

Occupied Scenario

In the occupied scenario (i.e., stool 1 already occupied) participants were asked about five different seat options. Overall, a larger variety of concepts were mentioned in the occupied scenario. The concept most often mentioned was "space". More specifically participants mentioned "personal space", "(not) having enough space", or "being too close to a stranger" (Table 2).

Table 2

Counts of concepts in occupied scenario

Concept	Stool 2	Stool 3	Stool 4	Stool 5	Stool 6
(Personal) space for self or others	9	7	5	11	15
Enough space		5	2	6	11
Not enough space	6	1	2	1	
Too close to stranger	4		1	1	
Don't want to sit beside/opposite stranger	5		7		
Privacy		2		1	1
Feeling disturbed	4	2	4	1	
Norm	2	1	2		
Certain seat position preferred	2	1	1	2	3
Comfort					
Comfortable		3		2	2
Uncomfortable (or intimidating)	2		2		
Eye-contact		2	4	1	1
Feeling of control	1	2			1
Psychological ownership					
Other concepts					
Quiet		1	1		1
Other stools are still free so would not choose the given stool	2				
Asking for conversation		1	1		
Too noisy	1				
Prefer to sit alone	1	1			
Do not want to bother another person		1	1	1	
Anticipation?				3	1

Stool Choices

Stool 2. None of the participants would choose stool 2, mostly because they do not want to sit too close to a stranger as well as feeling to not have enough space or invade someone's personal space. For example, *"I value my personal space and think that this is the same for others, therefore, I do not directly sit next to someone"*. One participant also mentioned a norm *"You are supposed to not sit next to someone"*. Others mentioned that this choice would be intimidating, too noisy, or in general, wondered why they should choose stool 2 when other stools are unoccupied.

Stool 3. The majority of the participants indicated that this stool provides enough space and they would feel comfortable sitting on this stool. For example, *"Have more space* *and do not feel like invading someone's personal space", "I have more room and privacy here"*, *"(...) no uncomfortable eye-contact is possible".*

Stool 4. For this choice, a lot of participants simply stated that they do not want to sit opposite a stranger. Others mentioned the concept of eye-contact and that they would feel uncomfortable with the thought of having direct eye-contact. One participant even mentioned that *"on this stool, you constantly look at someone and to avoid this eye-contact I would have to turn around"*. One participant also mentioned that this stool would mean to *"ask for a conversation"*.

Stool 5. Most participants are comfortable with this stool as it provides enough space. For example, *"I have more room and privacy here."* Three participants considered future persons that might sit down at the table and where they would sit. For example, *"(...) If I chose this chair, I have the feeling someone will not sit on 4 and 6"*.

Stool 6. This is the stool nearly all of the participants chose, with the majority mentioning that this stool provides enough and the most space. Additionally, some mentioned that they would feel most comfortable with this choice. For example, *"This stool provides enough space to not feel uncomfortable"*. One participant mentioned that this stool is quiet, while another mentioned that this choice would provide enough space for future persons that would like to sit at the same table.

Overall, this gives support for our first hypothesis that people try to safeguard their PS. Additionally, we have some support for our second hypothesis: In the empty scenario, people also seem to think about a possible future scenario where other people come to sit at the same table. For the participants, the corner stool provides anticipated PS, as here it is least likely that another person might sit directly beside or opposite someone. Yet, anticipated PS consideration is less obvious in the situation where there is already one seat occupied. Therefore, it is interesting to see whether a certain environmental characteristic leads people to consider PS only in the immediate situation or additionally in a possible future situation.

Therefore, we conducted an experimental online study, in which we introduced a busy and non-busy environment.

Study 3: Experimental Online Study

Method

People may indeed think about the concept of personal space when choosing a seat. As an additional step, we ran an online study with an experimental manipulation of the environment to test all three hypotheses. In particular, we presented busy or non-busy scenarios to see whether we can make a distinction between immediate and anticipated PS considerations; and whether one of the considerations is more pronounced in a busy versus non-busy environment.

Participants and Design

Three-hundred-twenty-five participants agreed to participate in our online study (female = 200, male = 114, other = 6; age range: 18 – 88 years, $M_{age} = 32.5$, $SD_{\text{age}} = 14.7$; nationality: German speaking countries = 76.9%, Dutch = 5.5%, Southern Europe = 4.3%, British = 2.8%, Eastern Europe = 1.8%, other = 8.6%). Participants were recruited via a lecture, surveyswap (an online provider where researchers can exchange their questionnaires), social media (Facebook and Instagram), and direct message (WhatsApp or E-Mail). Participation was compensated with the option to enter a lottery to win one of two 15€ Amazon gift cards. This online study had a mixed design: Participants were randomly assigned to either a busy ($N = 108$), a non-busy ($N = 104$), or a control ($N = 113$) condition (between-participant factor). All conditions were presented with two scenarios (empty scenario = empty table, occupied scenario = stool 6 already occupied; within-participant factor).

Procedure

The online questionnaire started with an informed consent. If participants agreed to participate, they were introduced to a seating arrangement at a train station and were asked for familiarity and usage of this seating arrangement. Thereafter, participants read about the occupied scenario (presented in the busy, non-busy, or control condition) followed by the empty scenario. The scenarios were followed by the Liebowitz Social Anxiety Scale (LSAS; Heimberg et al., 1999). In the end, participants had to indicate some demographic data, namely gender, age, nationality, and occupational level. Participants were also asked whether the instructions and questions were clear. They also had the option to leave a comment. Finally, participants were debriefed and thanked for their participation and provided with a link to the online lottery for the Amazon gift cards.

Materials

The questionnaire was programmed with Qualtrics both in English and German language.

Introduction of Setting

Participants were introduced to a seating arrangement at a train station. We described the same arrangement as can be found at Leiden central station and also used the same graphics (Figures 4 & 5). We, however, did not mention, that it is at Leiden central station because the majority of participants were unfamiliar with this station.

Scenarios and Motivations

In the occupied scenario, stool 6 was already occupied by a person (Figure 5). Participants were asked to imagine the following situation as good as possible: *"You are waiting for your train. You want to eat something while you wait and, therefore, decide to sit down at one of the tables. The color white stands for an empty stool, while black stands for an occupied stool. Therefore, in this scenario stool 6 is occupied by a person."* Depending on the condition it was either described as being rush-hour with a lot of people at the train station (busy), outside rush-hour with not a lot of people at the train station (non-busy) or not specifically mentioned whether it is busy or not (control). After this introduction, participants were asked which stool they would choose to sit down and which they would not choose to sit down in this scenario (choice between 1-5). Afterward participants had to answer on a 5-point Likert scale ranging from 1 (*disagree*) to 5 (*agree*) on how much they agree with statements. The statements all started with *"I chose stool x, because…".* Each of the 13 statements belonged to one of six concepts: immediate PS consideration (e.g.: *" ...I feel undisturbed"*), anticipated PS consideration (e.g.: *"...if an additional person will sit at the same table, as I and the person on stool 6 do, I still feel undisturbed."*), considering others PS (both momentary and anticipated, e.g*.:" ...I do not disturb someone else."*), normative behavior (*"...it is not polite to sit beside or opposite another person."*), feeling of control (*"...I have a feeling of control over the situation."*), and psychological ownership (e.g.: *"...the person, who sits first, 'owns' the table in a way."*). To note, the meaning of psychological ownership differs in both scenarios. In the empty scenario, it is phrased as such that the participant has privilege over the table as they sit first. In the occupied scenario, someone is already sitting so it is phrased as so they think the other person has privilege over the table. Additionally, we added two manipulation checks. After asking about their seat choice, participants were also asked to rate the items for the stool they did not choose *("When sitting on a stool x*…"). Of course, a lot of different motivations can influence a seat choice. We, however, only asked for the proposed PS considerations and concepts that are closely related to PS (e.g., Altman, 1975).

Next was the empty scenario (Figure 4). Participants had the same introduction (adapted to the given scenario and condition) and then had to choose if they would choose a corner- or middle-seat. Afterward they again had to rate the same statements (slightly adapted to the given scenario) for their chosen and not chosen option.

Liebowitz Social Anxiety Scale

The LSAS measures peoples' self-reported social anxiety on two subscales (avoid, fear, or anxiety). We only used the avoidance subscale. Here participants had to rate on 24 items how often (*never, occasionally, often, almost always*) they avoid certain situations (e.g., "*I avoid telephoning in public*" or "*I avoid talking with people you don't know very well.*"; Heimberg et al., 1999).

Statistical Analysis

First, we excluded participants that gave the same answer on the seat choice and non-choice ($N = 17$), as well as participants that did not finish the questionnaire ($N = 64$). We inspected descriptive statistics, frequencies, correlations, cross-tabulations, chi-square tests, and McNemar's test to assess whether there are differences between seat choice and condition but also differences between the two scenarios. We additionally run ANOVAs and t-tests to examine whether there are differences in motivations between conditions and seat choice. Next, in a more explorative part, we run two principal component analyses to see whether the different motivations are just facets of a component or if they are exclusive concepts. Finally, we run a binary and multinomial logistic regression to see which factors (specifically a busy and non-busy condition as well as PS considerations) predict a certain seat choice. We used SPSS (IBM Corp., Version 26) to analyze the data. The significance level was specified to an alpha level of 0.05.

Categorization of Personal Space Considerations

In the empty scenario, the outcome variable has two categories, namely corner and middle stool. Notably, we predicted that the corner stool has anticipated PS, as here it is least likely that other persons will sit either directly beside or opposite oneself. In the occupied scenario, we categorized the seat choice into three categories: stool 3 and 5 are the category with "small distance" while stool 2 and 4 are the category "medium distance", and finally stool 1 has the category "large distance". To note, stool 2 and 4 not only have a "medium distance" but are also categorized as having anticipated PS consideration. According to our prediction, here it is least likely that an additional person will sit either directly opposite or beside someone. This, however, does not mean that stool 2 and 4 are identical. Rather both are psychologically different because on stool 4 it is unlikely that people have eye-contact with a stranger, while this could be possible on stool 2. On the other hand, stool 1 has the largest distance to the person already sitting, but only immediate PS consideration according to our prediction. Therefore, we would predict that in a busy environment a stool choice of the “medium distance” (stool 2 & 4) is more likely to be taken by participants than of “large distance” (stool 1). Stool 3 and 5 are closest to the stranger, yet even though they both are in the “small distance” category we are not suggesting that they are psychologically identical, rather on stool 3 one is directly facing a stranger, while this is not the case for stool 5.

Results

Hypotheses Testing

We hypothesized that people try to safeguard their personal space by choosing a seat that provides enough physical distance towards other persons to remain outside their intimate and personal domain. Additionally, we hypothesized that people consider PS in a possible future setting by choosing a seat where it is least likely that an additional person is going to sit outside their intimate and personal domain. We specifically predicted the latter to be pronounced in a busy compared to a non-busy environment. We found support for the first and second hypotheses, yet, inconclusive support for the third hypothesis.

People Try to Safeguard Their PS Irrespective of Condition

No significant differences between the three conditions are observed in the descriptive statistics (Table 3). When comparing only the busy and non-busy condition we see a difference in anticipated PS for the occupied scenario, $t(210) = 2.26$, $p = .025$.

Participants that chose a corner stool in the empty scenario scored higher on all PS considerations (immediate, anticipated, and other people), while scoring lower on psychological ownership (Table 4). The corner stool scoring higher on anticipated PS consideration is in line with our predictions.

Table 3

Descriptive statistics per condition

		Busy		Non-Busy		Control	
		M	*SD*	*M*	*SD*	*M*	*SD*
Empty scenario	Immediate PS	4.39	0.79	4.45	0.76	4.35	0.90
	Anticipated PS	4.42	0.73	4.41	0.83	4.35	0.92
	Others PS	3.98	1.06	4.04	1.12	4.02	1.15
	Psy. ownership	2.10	1.07	2.28	1.08	2.33	1.07
	Feeling of control	3.72	1.25	3.88	1.15	3.70	1.33
Occupied scenario	Immediate PS	4.39	0.73	4.15	1.06	4.28	0.89
	Anticipated PS	4.13	0.89	3.81	1.11	3.87	1.12
	Others PS	3.67	1.06	3.67	1.15	3.66	1.20
	Psy. ownership	2.12	1.03	2.22	1.12	3.94	1.05
	Feeling of control	3.54	1.24	3.38	1.30	3.46	1.33
	Norm	3.27	1.41	3.25	1.52	3.31	1.43
Familiarity		1.81	1.13	2.14	1.26	2.10	1.27
Usage		2.17	0.75	2.26	0.87	2.24	0.78
LSAS		50.44	11.60	49.35	12.24	49.52	12.87

Note. Psy. = Psychological

Table 4

Descriptive statistics empty scenario per seat choice

	Corner stool		Middle stool				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Immediate PS	4.43	0.80	4.11	0.92	2.17	323	.031
Anticipated PS	4.46	0.77	3.89	1.11	3.92	323	.000
Others PS	4.14	1.02	2.96	1.24	6.32	323	.000
Psychological ownership	2.19	1.07	2.67	1.06	-2.56	42.804	.014
Feeling of control	3.76	1.25	3.80	1.23	-0.19	323	.853

Table 5

Descriptive statistics occupied scenario (seat 6 occupied) per seat choice

	Medium distance (stool 2 & 4)		Large distance (stool 1)				
	M	*SD*	*M*	*SD*	*t*	*df*	*p*
Immediate PS	4.25	0.85	4.32	0.94	-0.67	305	.501
Anticipated PS	3.80	1.08	4.00	1.04	-1.59	305	.113
Others PS	3.61	1.15	3.70	1.12	-0.66	305	.513
Psychological ownership	1.96	0.95	2.24	1.13	-2.18	305	.030
Feeling of control	3.27	1.43	3.43	1.41	-0.90	305	.368

Participants choosing a stool with larger distance compared to the medium distance in the occupied scenario scored higher on psychological ownership. Yet, contrary to our prediction there is no difference in reported anticipated PS consideration (Table 5).

Table 6

Descriptive statistics of choice and non-choice

		Choice		Non-Choice				
		M	*SD*	*M*	*SD*	*t*	*df*	*p*
Empty scenario	Immediate PS	4.23	0.94	2.05	1.10	22.72	251	.000
	Anticipated PS	3.94	1.09	2.29	1.20	20.37	251	.000
	Others PS	3.71	1.13	2.70	1.07	14.13	251	.000
	Psy. ownership	2.24	1.10	2.32	1.22	-1.93	251	.055
	Feeling of control	3.46	1.30	2.12	1.12	12.04	251	.000
Occupied scenario	Immediate PS	4.40	0.82	4.40	0.82	22.72	251	.000
	Anticipated PS	4.40	0.85	2.61	1.18	15.59	251	.000
	Others PS	4.03	1.11	2.63	1.20	11.05	251	.000
	Psy. ownership	2.22	1.14	2.36	1.16	-1.50	251	.135
	Feeling of control	3.76	1.28	2.47	1.28	12.62	250	.000
	Norm	3.31	1.50	3.40	1.48	-1.04	251	.301

Note. Psy. = Psychological

When comparing the descriptive statistics of the considerations of the chosen and non-chosen stools, we see that participants scored the non-choice in the empty scenario as lower on anticipated PS, others PS, and feeling of control. No difference was observed on psychological ownership and immediate PS. In the occupied scenario participants scored the non-choice lower on immediate PS, anticipated PS, others PS, and feeling of control. No difference was observed on psychological ownership (Table 6).

In the busy conditions, a few more people chose a seat with anticipated characteristics (corner stool and middle distance), yet the difference between the groups was only small, $\chi^2(32) = 1.01$, $p = .590$ (empty scenario), $\chi^2(4) = 4.02$, $p = .403$ (occupied scenario).

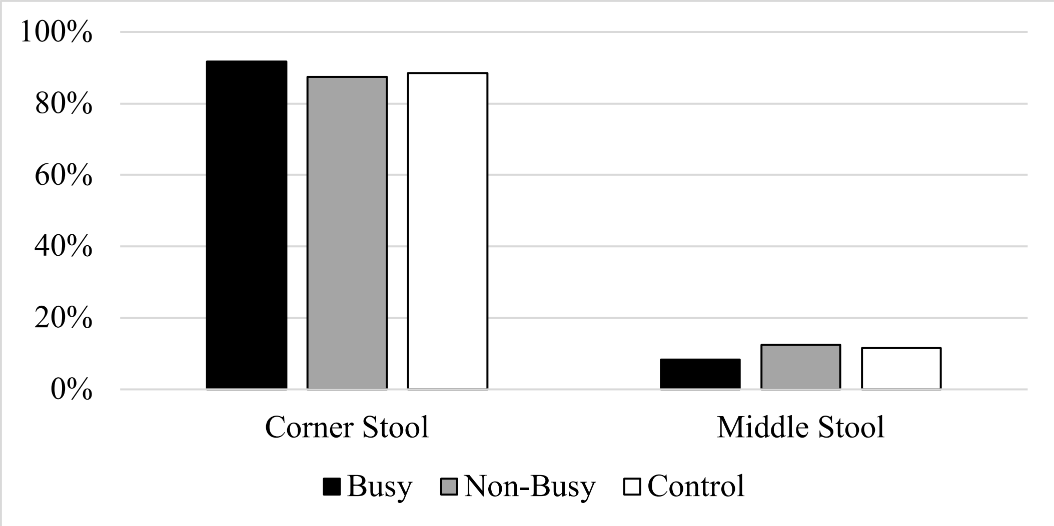

Figure 6. Seat choice distribution in empty scenario. Corner stool: busy = 91.7%, non-busy = 87.5%, control = 88.5%; middle stool: busy = 8.3%, non-busy = 12.5%, control = 11.5%

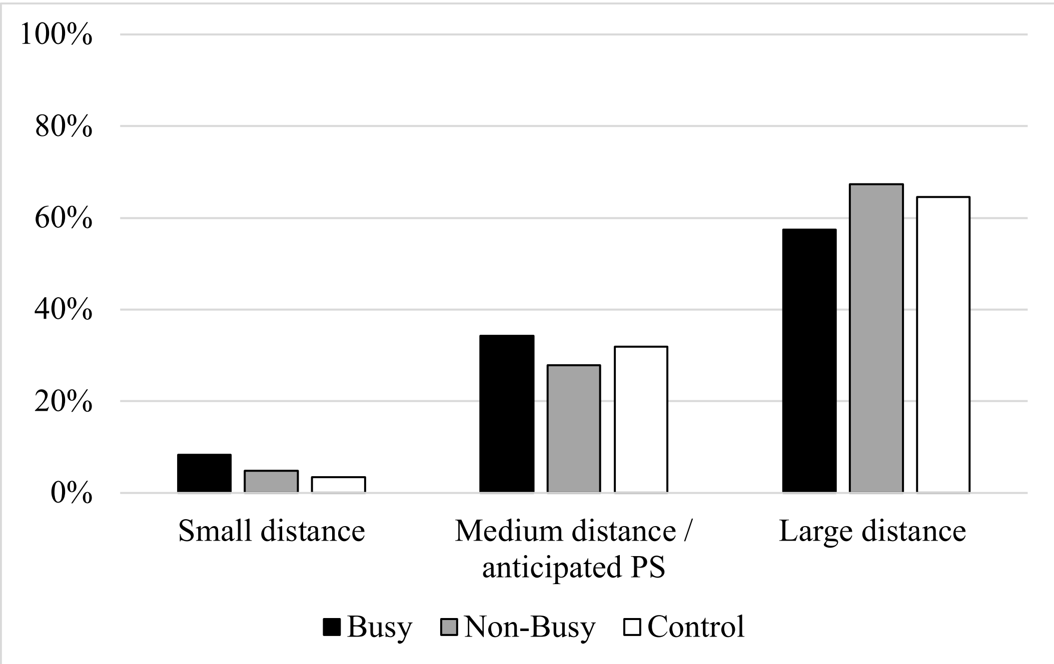

Figure 7. Seat choice distribution in occupied scenario (seat 6 occupied). Small distance = Stool 3 & 5, busy = 8.3%, non-busy = 4.8%, control = 3.5%; medium distance = stool 2 & 4, busy = 34.3%, non-busy = 27.9%, control = 31.9%; large distance = stool 1, busy = 57.4%, non-busy = 67.3%, control = 64.6%

Inspecting the frequencies of the occupied scenario in detail, we see that most people prefer stool 4 (busy: 25.9%; non-busy: 19.2%; control: 18.6%) over stool 2 (busy: 8.3%; non-busy: 8.7%; control: 13.3%) in the "medium distance" category and stool 3 (busy: 7.4%; non-busy: 4.8%; control: 3.5%) over stool 5 (busy: 0.9%; non-busy: 0%; control: 0%) in the "small distance" category. On the other hand, when participants were asked about non-choice in the occupied scenario, most of them would not choose stool 5 (busy: 52.8%, non-busy: 53.8%, control: 51.3%) in all conditions, followed by stool 3 (busy: 22.2%, non-busy: 19.2%, control: 18.6%).

In a further step, we analyzed the within-factor to see whether there is a difference in choosing a middle or a corner seat between the two scenarios (empty table vs. stool 6 occupied). To note, for this we recategorized the seat choices of the occupied scenario into corner and middle, irrespective of whether they have a rather small or large distance to the person already sitting. The McNemar's test determined that there was no differences in the distribution of seat choice between the empty and occupied scenario when layering by condition, $p = .523$.

In the empty scenario seat choice (corner stool as reference category) correlates positively with immediate PS ($r = .12$), anticipated PS ($r = .21$), and others PS ($r = .33$), while it correlates negatively with psychological ownership ($r = -.14$) and nationality ($r = -.13$). Most of the motivations of seat choice correlate with each other, especially immediate and anticipated PS have a high positive correlation ($r = .71$). In the occupied scenario seat choice (large distance reference category) correlates negatively with norm ($r = -.22$) and gender ($r = -.12$); and again, most of the motivations correlate with each other with a high correlation for immediate and anticipated PS ($r = .64$). Correlation tables of the seat choices for both scenarios and the predictors are in Appendix A.

In sum, most people try to safeguard their PS by choosing a seat with enough physical distance to remain outside the intimate and personal domain, which supports both our first and second hypotheses. Yet, in a busy compared to a non-busy environment people are not more likely to choose a seat where it is least likely that an additional person is going to sit either directly beside or opposite them; therefore, our third hypothesis is not supported. Albeit we did not observe a difference in seat choice distribution between the conditions, we found that participants in the busy compared to the non-busy condition scored higher on the anticipated PS motivation in the occupied scenario.

Explorative Analysis

Immediate and Anticipated PS are Overlapping Facets

As the motivations are correlating with each other and to see whether the different motivations are rather facets of one concept or actually different concepts we run a principal component analysis with oblimin rotation based on eigenvalues greater than one. All the prerequisites for running a PCA hold: no extreme means or standard deviations, a satisfactory amount of high and low correlation, Kaiser-Meyer-Olkin measure of sampling adequacy was .79 (empty scenario) and .79 (occupied scenario), as well as Bartlett's test of sphericity was significant, $\chi^2(36) = 869.39.063$, $p < .001$ (empty scenario); $\chi^2(45) = 724.73.063$, $p < .001$ (occupied scenario).

In the empty scenario, the variance in all items is represented by the three components that explain 65.44% of total variance. The pattern matrix (Table 7) demonstrates that the motivations are loading to either be directly connected to PS (e.g., immediate PS consideration) or other closely related concepts (e.g., psychological ownership). Following the analysis, we decided for theoretical reasons to categorize the motivations into two components, rather than three, with component one being facets of PS, while component two are other closely related psychological concepts. These two components explain 53.98% of total variance.

In the occupied scenario, the variance in all items is represented by two components that explain 53.98% of total variance. The pattern matrix (Table 8) again shows that items either load on a PS component or other closely related psychological concepts.

Table 7

Pattern matrix empty scenario

	Component		
	1	2	3
immediatePS_1	0.80	-0.04	0.09
immediatePS_2	0.80	-0.03	0.18
othersPS_3	0.52	0.37	-0.44
anticipatedPS_4	0.79	-0.12	-0.11
anticipatedPS_5	0.84	-0.09	0.00
othersPS_6	0.51	0.42	-0.48
psychownership_7	-0.04	0.73	0.40
psychownership _8	-0.16	0.74	-0.12
feelingcontrol_9	0.42	0.27	0.62

Note. Component 1 = PS, component 2 = other concepts

Table 8

Pattern matrix occupied scenario

	Component	
	1	2
immediatePS_1	0.74	-0.04
immediatePS_2	0.77	-0.05
othersPS_3	0.48	0.37
anticipatedPS_4	0.80	-0.17
anticipatedPS_5	0.81	-0.11
othersPS_6	0.51	0.20
psychownership_7	-0.10	0.79
psychownership _8	-0.12	0.70
norm_9	0.11	0.66
feelingcontrol_10	0.33	0.30

Note. Component 1 = PS, component 2 = other concepts

Overall, immediate and anticipated PS considerations are two overlapping facets of PS rather than two different concepts. Furthermore, we decided to do two sum scores for further analysis, namely, a sum score of the PS motivations (immediate PS, anticipated PS, others PS) and of other psychological concept motivations (psychological ownership, feeling of control, norm for the occupied scenario).

PS Considerations Influence Seat Choice

For the empty scenario, our outcome variable had two categories (corner, middle). So, we decided to run a binary logistic regression with the confirmatory method ('Enter'). In the first step, we entered the covariates to control for: age, gender, nationality, LSAS, and the sum score of psychological ownership and feeling of control. In the second step, we entered the predictors condition and PS consideration. The key assumptions of multicollinearity and linearity of logit are met, while we detected one outlier in the standardized residuals, which was also an influential point in cook's distance. We exclude this case from further analysis. The model is significant, $\chi^2(7) = 33.59$, $p < .001$, in comparison to the null-model and baseline-model with only the control variables. 33.7 %, (Nagelkerke $R^2 = .337$; -2 log-likelihood 88.36), of variance in seat choice is explained by the condition and PS considerations, when controlled for gender, age, nationality, social anxiety score, and other considerations. Furthermore, this model has a good fit, Hosmer and Lemeshow test: $\chi^2(8) = 12.74$, $p = .121$. PS considerations predict the seat choice, while a busy or non-busy environment does not. In specific, participants that indicated to highly consider PS when choosing a seat are more likely to choose a corner seat. On the other hand, participants that indicated to consider other reasons, like psychological ownership, for their seat choice are more likely to choose a middle seat (Table 9). To note, we also run a logistic regression model, where we controlled for the seat choice in the previous scenario, yet the results did not change.

Table 9

Variables in the equation table: empty scenario

								95% C.I.for EXP(B)	
		B	*S.E.*	Wald	*df*	*p*	Exp(B)	Lower	Upper
Step 1	Gender	0.15	0.62	0.06	1	.809	1.16	0.34	3.93
	Age	0.50	0.03	2.81	1	.093	1.05	0.99	1.11
	Nationality	0.00	0.85	0.00	1	.999	1.00	0.19	5.28
	LSAS	-0.2	0.03	0.63	1	.428	0.98	0.92	1.04
	Other considerations	-2.12	0.74	8.14	1	.004	0.12	0.03	0.52
	Condition	0.22	0.60	0.13	1	.719	1.24	0.38	4.00
	PS considerations	3.24	0.79	16.86	1	.000	25.47	5.43	119.44
	Constant	-0.07	2.22	0.00	1	.975	0.93		

For the occupied scenario, we run the same model, so gender, age, nationality, LSAS, and other considerations (now also including norm in addition to feeling of control and psychological ownership) as the covariates, while condition and PS considerations as the main predictors. Yet, as our outcome variable has three categories (stool 3 & 5 = "low distance", stool 2 & 4 = "medium distance" plus anticipated characteristics, stool 1 = "large distance") we run a multinomial logistic regression analysis. The key assumptions of multicollinearity, linearity of logit, and no outliers or influential points, are met. The model is not significant, $\chi^2(14) = 22.51$, $p = .069$, in comparison to the null-model. 12.8 %, (Nagelkerke $R^2 = .128$), of variance in seat choice is explained by condition, PS considerations, gender, age, nationality, social anxiety score, and other considerations.

Table 10

Parameter estimates of the occupied scenario

							95% C.I.for EXP(B)		
		B	*S.E.*	Wald	*df*	*p*	Exp(B)	Lower	Upper
Small distance	intercept	0.12	2.89	0.00	1	.966			
	Gender	0.88	0.63	1.95	1	.162	2.42	0.70	8.33
	Age	0.00	0.02	0.00	1	.952	1.00	0.97	1.04
	Nationality	0.26	0.18	2.28	1	.131	1.31	0.92	1.85
	LSAS	0.30	0.03	1.02	1	.313	1.03	0.97	1.09
	Other cons.	-1.61	0.54	8.93	1	.003	0.20	0.07	0.57
	Condition	-0.72	0.63	1.30	1	.255	0.49	0.14	1.68
	PS cons.	0.13	0.85	0.02	1	.881	1.14	0.22	6.00
Medium distance	intercept	2.65	1.52	3.06	1	.080			
	Gender	0.02	0.34	0.00	1	.962	1.02	0.53	1.96
	Age	0.00	0.01	0.12	1	.728	1.01	0.98	1.02
	Nationality	-0.09	0.12	0.53	1	.467	0.92	0.72	1.16
	LSAS	-0.01	0.02	0.26	1	.611	1.00	0.96	1.02
	Other cons.	0.01	0.26	0.00	1	.976	1.01	0.60	1.69
	Condition	-0.31	0.32	0.95	1	.329	0.73	0.39	1.37
	PS cons.	-1.11	0.44	6.43	1	.011	0.33	0.14	0.78

Note. Reference category: large distance; cons. = considerations

Although, the model is not significant, it has a good fit for the data set: Pearson: $\chi^2(394) = 373.82$, $p = .760$; Deviance: $\chi^2(394) = 321.87$, $p = .997$. Overall, PS considerations, $\chi^2(2) = 7.03$, $p = .030$, as well as other considerations, $\chi^2(2) = 10.82$, $p = .004$ have a significant contribution to the model. Specifically, participants that scored higher on other psychological considerations were less likely to choose a stool with a low distance compared to a stool with large distance. Additionally, participants that scored higher on PS considerations were less likely to choose a stool with a medium distance compared to a stool with large distance (Table 10).

Discussion

We aimed to extend previous research on the role of PS in seating behavior by distinguishing an immediate PS consideration from an anticipated PS consideration. Firstly, we hypothesized that people would try to safeguard their PS by choosing a seat that, in the given situation, provides enough distance from another person to remain outside their intimate and personal domain. All three studies confirmed this hypothesis. While in the empty scenario (i.e., situation with an empty table) immediate PS is assumed, the preference for a seat with a certain distance from a person already sitting becomes especially evident in the occupied scenario (i.e., one corner seat occupied). The majority of participants, whether observed in an actual train station or presented with a graphic with a description of the situation, chose the seat with the largest distance from the person already sitting. The second most frequent choice was a stool with medium distance from the person already sitting; only a minority of participants chose a seat directly beside or opposite a stranger. Hall’s (1966, 1968) classical proxemic theory underlines this distribution. He defined the intimate domain as roughly between zero and 45 centimeters and the personal domain between 45 and 120 centimeters. Both domains together comprise a person’s PS. While the stool with the largest distance is clearly outside a person’s PS, the stools with a medium distance are still in some people’s PS, as these stools are about 115 centimeters distant from the person already sitting. This might be one reason why most participants preferred the stool with the largest distance. Furthermore, our results are similar to the findings of Staats and Groot (2019). In their study in a café setting, the majority of participants chose a seat that provided high privacy and low intimacy.

That is, adjusting physical distance from and eye-contact with others are ways to regulate privacy and intimacy needs (Altman, 1975; Argyle & Dean, 1965). Thus, the seat with the largest distance from a person who is already sitting might provide more privacy and less intimacy. Additionally, this is a possible explanation for why stool 4 is preferred to stool 2 in the scenario where stool 6 is already occupied. Both stool 4 and stool 3 are 115 centimeters from the person already sitting, but a person sitting on stool 4 would be very unlikely to have eye contact with the stranger, meaning that stool 4 might provide more privacy and less intimacy than stool 2.

Secondly, we hypothesized that people would try to safeguard their PS in anticipation, by choosing a seat where it would be least likely for an additional person to sit inside their intimate and personal domain. We indeed found this to be the case for the empty scenario. In this empty scenario immediate PS is already assured, so people were thinking about additional people to come, as was found in our open-ended question study. People also replied that if they sat in the corner seat it would be less likely for someone subsequently to sit down either directly opposite or beside them. This is also supported, in the online study, by participants scoring higher on the anticipated PS consideration when choosing a corner seat rather than a middle seat. In the occupied scenario, we predicted that stool choice 2 and 4 would have anticipated PS characteristics. We observed people choosing these seats, but they did not report higher anticipated PS consideration compared to the stool with the largest distance. Maybe when people anticipate others arriving at the same table they choose the seat that is the most isolated, which in our scenario might be the seat diagonally opposite the stranger. Similarly, in Baum and Greenberg’s study (1975), participants that expected to be joined by a large number of fellow participants chose a more socially isolated and secure seat.

Thirdly, we hypothesized that in a busy environment relative to a non-busy environment, people would be more likely to safeguard their PS in anticipation of other people by choosing a seat where it is least likely that an additional person would sit inside their intimate and personal domain. This hypothesis was not confirmed, as people in the busy condition were not significantly more likely to choose the corner stool in the empty scenario, or stool 2 or 4 in the occupied scenario. Participants also did not self-report higher anticipated PS considerations in the busy condition in general (only for the occupied scenario). One reason might be, as mentioned above, that in the occupied scenario the seat with the greatest distance might be the most isolated seat and therefore some people might also perceive it as providing anticipated PS. Moreover, it is perhaps difficult to see a fine-tuned distinction in how immediate and anticipated PS considerations influence seat choice, as we found in our exploratory analysis that they are both overlapping facets of the PS concept.

In our explorative analysis, we also considered a few other factors that influence seat choice. One of these is psychological ownership. This concept might also explain the difference between people choosing a corner seat over a middle seat. While people that chose a corner seat considered PS, people that chose a middle seat considered other factors, like psychological ownership. So, in a sense, choosing a middle seat in the empty scenario means that that person "owns" the table and wants to discourage people from sitting at the same table; as one participant stated, *"If I choose a middle seat, others are less likely to sit"*. This in itself seems like a preparatory mechanism to safeguard one's PS. However, our results do not explain why a minority of people chose a seat directly beside or opposite another person. Interestingly, in a study about choosing a seat in a café when alone, the majority of participants preferred a seat at a reading table (for which sociability was not the norm); a minority of the participants, however, deliberately did not choose the reading table (Staats & Van der Jagt, in prep.). The authors concluded that this difference was probably explained by other factors, like personality differences; it would thus be interesting to investigate this further (Staats & Van der Jagt, in prep.).

A limitation of our work is that, in our third study, we did not use a validated questionnaire to record people's self-reported motivations for a seat choice. Nevertheless, the questions we developed turned out to load on one component of PS. Second, we cannot be sure how effective our experimental manipulation of a busy and non-busy environment was, due to the descriptive nature of the manipulation. This might be an additional reason for why we did not observe the predicted difference between the conditions on anticipated seat choices. In future research, it would be interesting to compare a busy and non-busy environment in an observational study.

Further research could also observe other seating arrangements. In this line of research, we already conducted a pilot and an observational study in a university environment. The specific seating arrangement we observed consisted of seating booths: here too there were six stools on each side, yet the seating booths were closed at the sides, top, and back. The closed nature of the booth was a factor that influenced participants' seat choice. Nevertheless, we found quite similar patterns of seat choice in the seating booths relative to the train station seating arrangement (methods and results in Appendix C).

Notably, our data were collected before Covid-19. In times of social distancing, people have become very aware of their relation to and distance from others (Tingley, 2020). It would be interesting to investigate whether the recommended safety rules, such as one-and-a-half to two meters distance between people (e.g., BZgA, 2020), shape people's sense of PS. For example, one-and-a-half meters is, according to Hall (1966, 1968), already in the social constructive domain. Is it possible that people are currently quicker to feel that their PS has been invaded, even at a larger distance? The situation might, however, equally be the other way around, in as far as people may feel abandoned at not being allowed to come close to others. Designers and architects are also thinking about how designs could be adapted to the current situation (Tingley, 2020). One example of this could be the "corona bench" (see title page). The bench provides a seat on the right and on the left, yet has a gap in the middle. Such a bench possibly satisfies people's needs, since both this study and previous research found that the middle seat is rather unpopular (Evans & Wener, 2007).

All in all, people consider PS when choosing a seat. Not only do they consider it in the immediate situation, but there is also support that people consider possible future scenarios when choosing a seat. So, which seat will you choose? Probably one that is not too close to another person.

Acknowledgement

Thanks to Martine Robbe for collecting and providing the data for the observational study at Leiden Centraal (in 2011). Thanks to my supervisor Dr. Henk Staats for his patience and support during this extensive project. The picture of the "corona bench" on the title page was made in Grünstadt, Germany, in June 2020.

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Appendix A: Correlation Tables

Table 11

Correlations empty scenario

	Seat Choice	Condition	immediatedPS	anticipatedPS	others PS	Psyownership	Feeling Control	Gender	Age	Nationality	LSAS
Seat Choice	1										
Condition	-.012	1									
immediatedPS	.120	.051	1								
anticipatedPS	.213	.027	.708	1							
othersPS0	.332	.007	.462	.49	1						
Psyownership	-.140	-.021	.086	.013	.225	1					
FeelingControl	-.010	.057	.352	.289	.199	.210	1				
Gender	.001	-.045	-.005	-.090	-.069	.079	.005	1			
Age	.059	.007	-.083	-.013	-.111	-.109	-.092	-.068	1		
Nationaltiy	-.131	-.033	-.160	-.184	-.065	.105	-.114	.256	-.043	1	
LSAS	-.058	-.005	.110	.015	.039	.160	.068	.130	-.024	.198	1

Note. Corner stool reference category

Table 12

Correlations occupied scenario

	Seat Choice	Condition	immediatedPS	anticipatedPS	others PS	Psyownership	Norm	Feeling Control	Gender	AgeS	Nationality	LSAS
Seat Choice	1											
Condition	-.007	1										
immediatedPS	-.086	-.054	1									
anticipatedPS	-.063	-.020	.637	1								
othersPS	-.035	.003	.376	.424	1							
Psyownership	-.097	-.015	.056	-.014	.205	1						
Norm	-.221	-.017	.186	.123	.253	.377	1					
FeelingControl	-.059	-.023	.264	.228	.241	.173	.192	1				
Gender	-.116	-.045	-.225	-.196	-.126	.029	-.106	-.123	1			
Age	.073	.007	-.051	.075	-.014	-.105	-.124	-.003	-.068	1		
Nationaltiy	-.028	-.033	-.315	-.203	-.059	.134	.012	-.144	.256	-.043	1	
LSAS	-.060	-.005	-.039	-.011	.070	.269	.134	.071	.130	-.024	.198	1

Note. Large distance reference category

Appendix B: Open Question Answers

Table 13

Answers empty scenario

Participant ID	Stool 1	Stool 2
1	Yes, I want space for people who are at least two	No. Often people are sitting on 1 & 3, so I would feel uncomfortable sitting between them
3	Nice to sit by the side and so one further person can sit here	I would not mind, but I prefer a seat at the side
5	Easy to slide in and out here. Good oversight of whole room here	Here it is not so easy to exit as it is in the middle, especially if someone else is sitting by the sides.
7	If a following person is going to sit, I would have one seat apart	No, because there you would sort of also keep chair 1&3 occupied
9	I do not see a difference between the stools. I can be ready to get a train without getting in the way of someone	Different situation. If someone sits on the other seats then it is annoying. I always try to get those on the corners.
11	A corner seat is nice	No, I prefer the corner
13	Stool 1 is a nice stool, by the side so that I can put my bag next to me and I can leave quickly when I have to leave	I would not choose stool 2. The middle gives me less space for my bag. If a stranger comes by I prefer the corner seats. This gives a feeling of privacy.
15	I cannot speak with people in char 3 or 6, therefore would choose 2 or 5	Yes, here I can speak with others
17	Yes, there is no barrier here	No, I have to go through others when sitting here
19	I prefer the corner seat, as I here can easily exit and do not have to go through something	I think the corner stool is more practical. But all choices are good
21	More personal space if someone else is going to sit down	Stranger might sit next to you then
23	I prefer a corner seat. Also, if someone else sits they can sit on 3.	If I want to sit alone a middle seat is less chilled
25	If others come by it is less likely that they sit close by	Other people should not sit close to me
27	On the one hand people walk by very closely; yet, on the other hand, you leave space for other people	People that come after you are less likely to sit down.
29	Yes, because here you sit at the corner	No, because if a group comes by they have to sit apart.
31	Yes, because it is at the corner	No, because it is in the middle. Feels unpractical.
33	No, I prefer to sit in the middle	Yes, it is chilled to sit in the middle
35	Yes, because it's the corner	No, I prefer the corner
37	No, I prefer to sit in the middle, as it gives more space	Middle seat gives more space
39	Yes. Room for others that come and don't need to walk in someone's way	No.

Table 14

Answers occupied scenario

Participant ID	Stool 2	Stool 3	Stool 4	Stool 5	Stool 6
2	There is enough space to also sit somewhere else. I don't want to sit next to strangers	Here is space for myself and other person.	Here is too close to stranger.	Enough space to stranger to not feel uncomfortable	Enough space to not feel uncomfortable
4	There are also other stools free, which I would prefer to sit on	This stool is not directly next to the occupied seat and therefore I feel somewhat more comfortable	Here I have enough space, as there is a table between me and the occupied seat	Here is enough space	I value space between myself and a stranger if possible, considering personal space.
6	I automatically do not sit where there is no seat in between me and another person. If there is enough space at the table, I like to give the rest and myself the room	Here is one chair in between	Here is opposite of stranger	Here is enough space	Here is the most space
8	It is intimidating if someone sits so close to me, also do not want to do this to other people	Depending on where I walk from	Intimidating if opposite of unknown person	Yes, enough personal space here. Someone else can sit on 4-6 then.	Sure, there is place for others
10	It is not uncomfortable / inconvenient to sit here. Yet, do not prefer it. Psychological inconvenience	There is some space. Nothing is inconvenient here.	Very uncomfortable, due to eye-contact, especially since there are more spots free.	Sit at the opposite and therefore have enough room	This is the ideal stool. You don’t have that space on any other seat and you are not looked at.

12	Close to someone else, therefore uncomfortable for myself and also feel uncomfortable for other person	More space do not have the feeling of invading someone's personal space	That's not what I want, opposite of other person, which means asking for eye-contact and starting of conversation	Enough space and not wired if you don't talk to the person	Satisfying space to not have an unintentionally uncomfortable situation
14	Would choose another seat as I have more room for myself there.	I have more room and privacy here	Here I have still more room than stool 2	Enough room and privacy here	More enough room
16	I value my personal space and think that that's the same for others, therefore I do not directly sit next to someone.	Yes, here I can sit as you don't have the feeling of directly sitting on someone else. I do not have a real difference between 3, 4, 5, 6	Good seat as I do not hamper myself or others in the room	Good sitting do not hamper myself or others-	Here is room for myself and other.
18	Here is too close to others	No, I want to be as far as possible away from another person and where I can see the face of the other person	Can see the face of the other person and it's too close	Have the feeling when sitting here someone will not sit und 4 or 6	Yes, here I sit far away and can see the face of the other person.
20	No I want to sit far away from the already occupied seat.	This seat is less uncomfortable and here I don't have uncomfortable eye-contact	No, I do not want to sit directly opposite	Too close and nearly opposite	This way you give the stranger and yourselfer enough space
22	You are supposed to not sit next to someone. You can hear someone that is so close to you	Spot in between is appropriate. I am not certain if I would like to look in the same direction	No. Here I have eye-contact	If I sit here and someone then sits on 3, they can only choose stools next to someone	New people that come to sit can then choose other stools like 3 and 4
24	I do not like to sit next to someone	Yes, here it is not uncomfortable	No, directly opposite of someone	Yes, less eye-contact and not too close	Yes, less eye-contact and not too close

26	No, I do not want to sit next to a stranger	Yes, you do not sit opposite of someone, therefore you do not really have to make contact.	No, it is uncomfortable to it close to someone	Yes, here you have no direct contact	Yes, here you have no direct contact
28	No, here it is too busy	Maybe I would sit here as it is quieter	No	No	Yes, here it is more quiet
30	No, it is too close here	Yes, it stands more alone here	No, close to other	No, I like to sit further away	Yes, this stool is placed most alone
32	No, I don't like to sit directly next to someone.	Yes, nice stool. Not directly next to someone.	No, directly opposite of someone	Yes, I can do this, but not my favorite	Yes, far away from other person.
34	No, I prefer to sit on my own	Yes, here I sit alone, which I prefer	Yes, because I don't sit next to someone	Yes anytime	Yes anytime
36	NO, too close. Also do not want that the person feels disturbed by me eating or sitting close by.	Yes, here I do not bother other person.	No. Here I'm afraid that other person finds eating annoying	No. Other person can easily see me, therefore afraid that person annoyed by me eating.	Here the other person can still see me, but good space.
38	No. I do not want to sit ins someone’s personal space and other way around	Yes. No one really watches what you do	No. Here I have eye-contact; therefore, I would need to turn around	Okay. But prefer stool 3 or 6.	Yes, nice stool.
40	No. I do not want to sit close to a stranger.	Well, it depends on the view.	no, why sit opposite of someone if there is still other space. So, you don't have to sit here.	No too close, but still too close.	No too close, but still too close.

Appendix C: Seating Booth Studies

To see whether our predictions of an immediate and anticipated PS consideration also hold in another public area, where people have to work/study, we plan to conduct an observational study at the faculty of behavioral and social science at Leiden University.

Pilot

Methods

Participants

Twenty participants (17 female; Age: 19 – 30, *M* = 23.3, *SD* = 3.0) were approached in the faculty of behavioral and social science at Leiden University and asked to take part in our paper-and-pencil questionnaire. Our participants were randomly assigned to one of two conditions (busy vs. non-busy). Most of our participants were either Dutch (8) or German (5), as well as other nationalities (Italian = 1, Spanish = 1, Greece = 1, French = 1, Cyprus = 1, UK = 1, other = 1). Participation was compensated with a chocolate or nut bar.

Design and Materials

Our study is a mixed design. On the one hand, we have two different conditions (busy vs. non-busy = between-participants factor). On the other hand, we introduced four different scenarios (empty booths, seat 6 occupied, seat 5 occupied, seat 4 occupied = within-participants factor; Figure 4). Our paper-and-pencil questionnaire was about the seating booths on the first floor of the faculty of behavioral and social science at Leiden University. It consisted of four parts: a general introduction and questions about the seating booths, considerations when choosing a certain seat, certain seating scenarios, and demographic data.

Paper-and-Pencil Questionnaire

General Questions. A six-person seating booth comes with three tables a 100cm x 70 cm (5 cm between the tables), six stools a 45cm x 75cm, a back wall, a roof, and three lights (one over each table). To clarify the setting, we used a simplified graphic of a seating booth (Figure 8). General questions were about how familiar they are with these seating booths, how often they use them, if they prefer other seating arrangements in the faculty (long tables or individuals study cubicles), whether the booths are pleasant to work/study in, have a good illumination level, and if they are usually crowded.

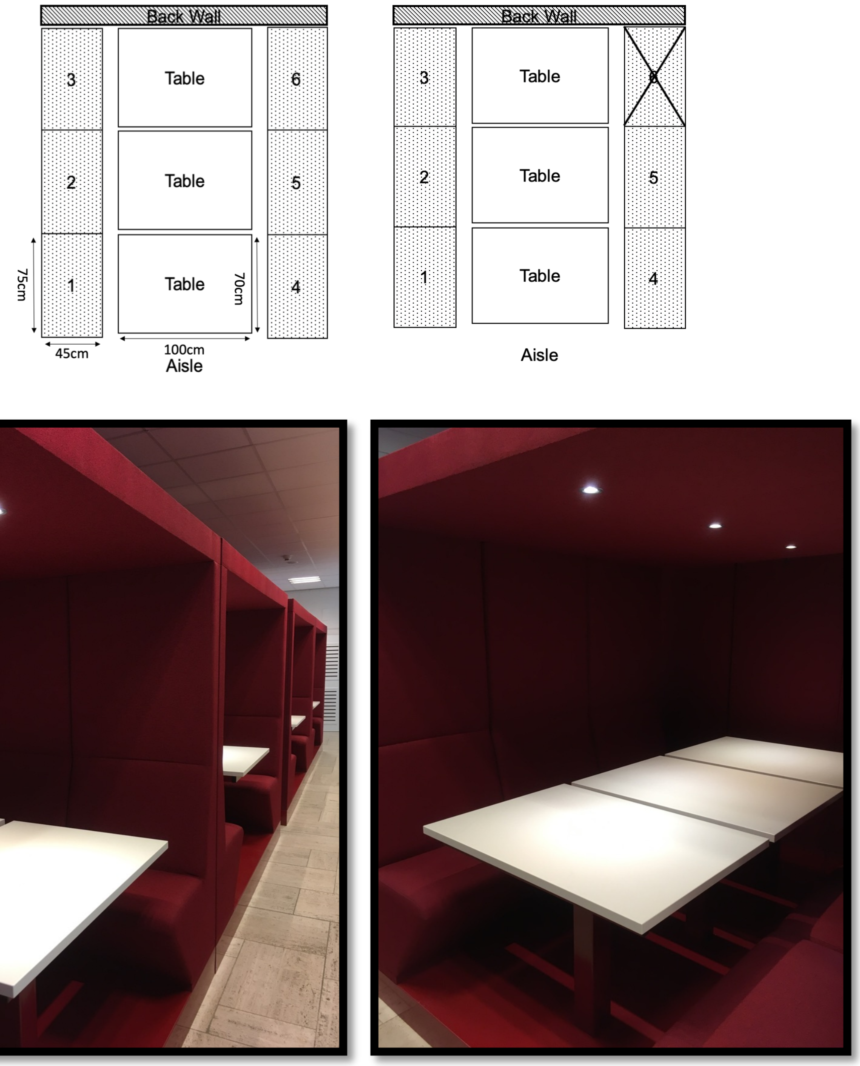


Figure 8. Six-person seating booth setting (either empty or seat 6 occupied)

Considerations. In this part, participants had to answer on a 5-point Likers scale (1 = disagree to 5 = agree) on how much they agree with statements. The statements all started with “When I choose a seat in a seating booth,…” and then they were either about studying (e.g., “…I consider whether I would be able to concentrate well in the booth.”), psychological ownership (e.g., “…I feel that the person who sits down first in the seating booth “owns” the booth in a way.”) others related / norm (e.g., “…I consider whether it is polite to sit directly next to or opposite to others.”), immediate PS consideration (e.g., “… I consider in which seat

I would feel the least disturbed.”), anticipated PS consideration (e.g., “…I consider the possible arrival of people that might sit down, so that I do not get disturbed.”), or specific seat positions (e.g., “…I consider whether I can easily get out of the booth and therefore I like to sit in an aisle seat (1&4).”).

Seating Scenarios. We introduced four different seating scenarios with a simplified graphic (Figure 4). Participants were asked which seat they would choose in each specific scenario. The first situation was an empty booth, the second to the forth were situations with one seat occupied, namely seat 6, seat 5, or seat 4. We decided to choose these four situations, as we want to infer whether immediate and/or anticipated PS consideration is at play, depending on which seat the participants choose.

Busy vs. Non-Busy Condition. We introduced the specific seating scenarios in two different conditions. In the busy condition, the participants were informed that: “The seating booths are all still empty. You decide to sit in one of the six-person booths. You are certain that more people are coming to sit in your chosen booth.”, while the non-busy condition was introduced as: “The seating booths are all empty. You decide to sit in one of the six-person booths. You are certain that not a lot of more people are coming, as it already is late. Therefore, it is very unlikely that someone chooses to sit in your chosen booth.”

Procedure

We approached people in the faculty of behavioral and social science at Leiden University and asked them whether they would be willing to fill in a short questionnaire. We mainly approached people that were sitting in the respective seating booths on the first floor of the faculty; as well as some that were familiar with the booths but were not sitting in them while filling in the questionnaire. After reading an informed consent, participants were introduced to the seating booths, with a short description and a graphic. This introduction was followed by general questions about the booths. The general questions were followed by more specific questions about people’s motivations and considerations when choosing a certain seat in these seating booths. Thereafter, we introduced four different seating scenarios in either a busy or non-busy environment, depending on the condition participants were in. Finally, we asked for some demographic data (age, gender, nationality, and occupational level), and whether the instructions/questions were clear. Participants had also the option to leave a comment. After filling in the questionnaire participants were thanked for their participation and compensated with a chocolate bar or nut bar.

Results

Frequencies of Self-Reported Data

Considerations When Choosing a Seat in a Booth

Study Related. Participants were asked what they consider when choosing a seat in one of the seating booths. All of our participants considered whether they can concentrate well in the booths. 75% of the people consider whether they have enough space to study/work well (which can both refer to the physical and psychological space). 90% also consider whether the booths provide privacy from the outside to study/work well.

PS Considerations. When we look at immediate PS consideration, we can conclude that the majority of people (65%) consider whether they would feel disturbed in a certain seat. Taking anticipated PS consideration into account we see that here as well the majority (55%) takes possible future people into account.

Other People. The data show that all of the participants considered whether other people were already sitting in the booth. The majority also considered whether it is polite to sit too close to others (80%), as well as considered to not disturb others (55%). Participants also considered whether others are talking (90%, similar to 90% considering whether it is silent inside the booth), half considered whether others are eating and drinking (50%), and 40% considered whether those already sitting look agreeable. Yet, only the minority of participants (35%) considered what others might think of them.

Psychological ownership. When looking at the items for psychological ownership it seems that we have some participants that consider ownership, while others do not. 45% agree that the first person "owns" the booth in a way, while 35% disagree (the rest is undecided). A slight majority (55%) of people feel reluctant to enter a booth if someone is already sitting in the booth. 45% hope that no one will sit in the same booth as themselves and 25% even (somewhat) feel the need to discourage others to sit in the same booth.

Seating Scenarios

Empty Booth. Most people would choose a seat at the back (Figure 9) if the booth is empty. This also relates to 65% of people agreeing with the statement that a seat by the back provides less disturbance. Choosing a middle seat in an empty booth is more common than an aisle seat. Maybe people feel disturbed by passers-by, as indicated by 40%. Some people (30%), however, value an aisle seat, as they can easily exit the booth (e.g., "so I can exit fast"). If we compare the busy and non-busy environment we did not find a difference $t(18) = 0.945$, $p = .357$. Therefore, in an empty booth scenario, people might always think about other people that arrive, irrespective of whether it is busy or not. The following statement possibly sums up the overall distribution in the empty booth scenario: "Sitting next to a wall provides more privacy and also a feeling of comfort, so I prefer those seats when I'm not concerned about disturbing others as I get up". So, as long as no one else is in the booth, most people seem to prefer a back seat.

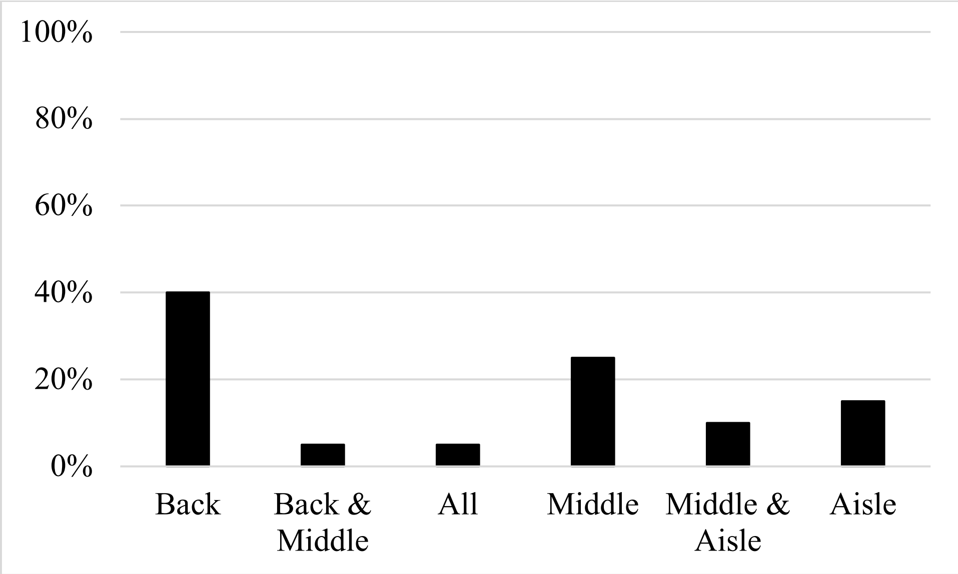


Figure 9. Seat choices in empty booth scenario.

Seat 6 Occupied. If we look at the frequencies we see that in a busy environment most participants chose seat 1, followed by seat 2 (Figure 10). In a non-busy environment, on the other hand, participants chose seat 2 most often (Figure 11). Seat 4 might be not as popular, as people would have to stand up in case the person already sitting wants to exit the booth.

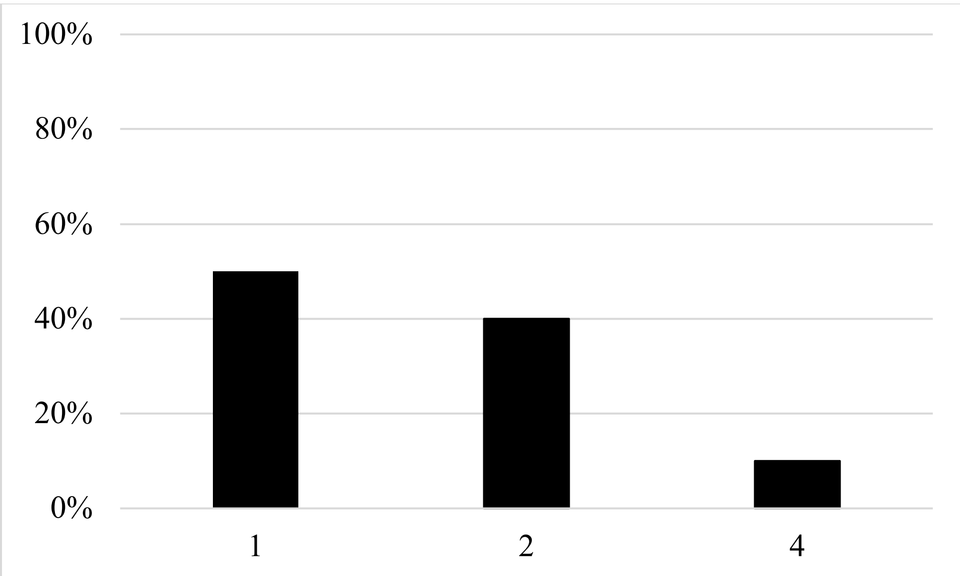


Figure 10. Seat 6 occupied busy condition

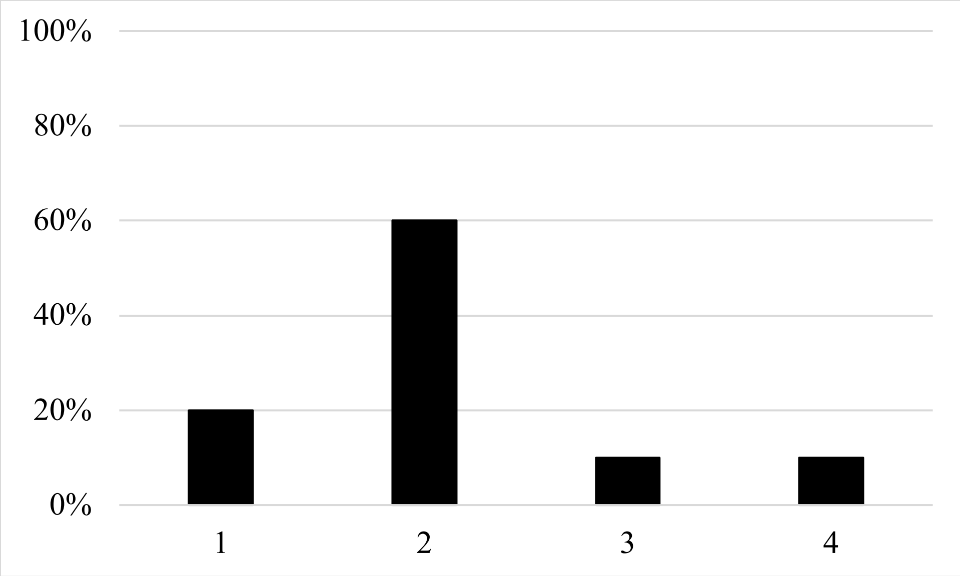


Figure 11. Seat 6 occupied non-busy condition

In the busy condition, 80% of people (somewhat) agree that they would feel undisturbed when sitting in seat 1, yet only 60% (somewhat) agree that they would feel undisturbed in seat 1 even if an additional person is going to sit in the booth. In the non-busy condition, there is however no difference, in both cases, 70% (somewhat) agreed to feel undisturbed in seat 1. Concerning seat 2, in a busy environment 60% of people would feel undisturbed and 50% would feel only somewhat undisturbed if an additional person is going to sit in the booth. In contrast in the non-busy environment 90% feel undisturbed, and 70% still feel undisturbed if an additional person is going to sit in the booth.

Seat 5 Occupied. If we look at the frequencies we see that in a busy environment as well as a non-busy environment most participants chose seat 3 (Figures 12 & 13). This result is not surprising as in this specific situation no distinction between immediate and anticipated PS consideration is possible. Furthermore, in the empty booth most participants preferred a seat by the wall, which might be an explanation of why more participants chose seat 3 compared to seat 1.

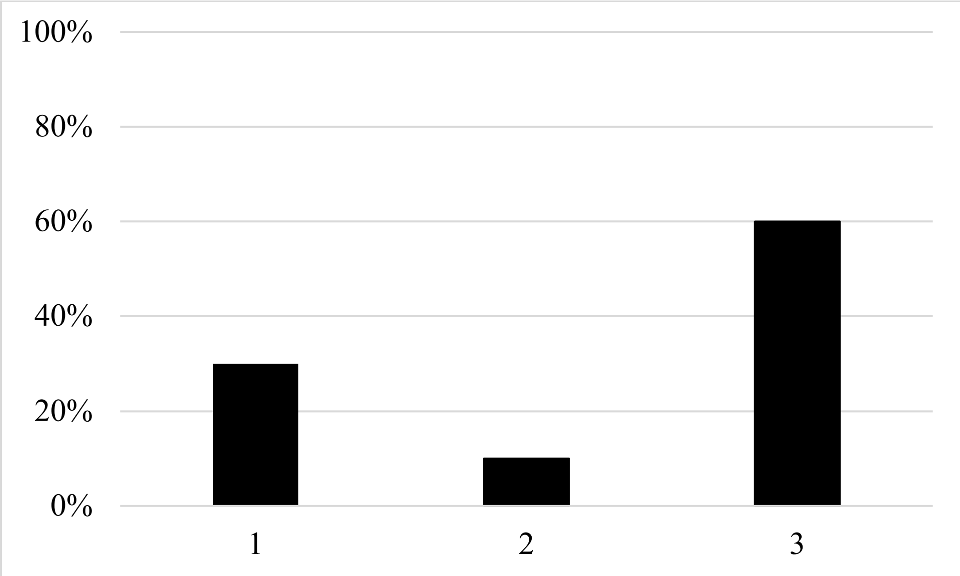


Figure 12. Seat 5 occupied busy condition

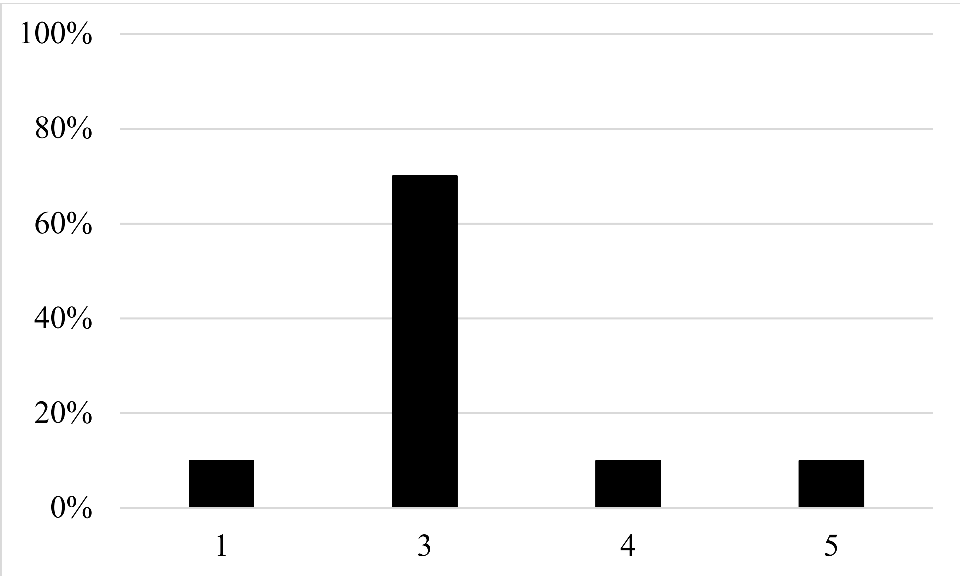


Figure 13. Seat 5 occupied busy condition

In the busy condition, 80% (70% when others are expected) feel undisturbed sitting in seat 3, while 90% (80% when others are expected) feel undisturbed in the non-busy condition.

Seat 4 occupied. If we look at the frequencies we see that in a busy environment as well as a non-busy environment most participants chose seat 3, followed by seat 2 (Figures 14 & 15). This is not surprising as seat 3 in this situation gives both the most immediate and anticipated PS. If we, on the one hand, consider that seat 6 might be not as popular, as people would have to ask the person already sitting whether they can stand up to let the participant in. Therefore, the participant also would have less control when sitting in seat 6, as they always would have to ask someone if they want to exit the booth (this concept was mentioned in the open questions, e.g. “If someone blocks the exit and I need to ask them each time I get up. As soon as I need to get up I’m not coming back.”). On the other hand, choosing seat 2 might heighten the probability that an additional person is sitting beside the participant, as again seat 6 is for a lot of people unpopular in this situation.

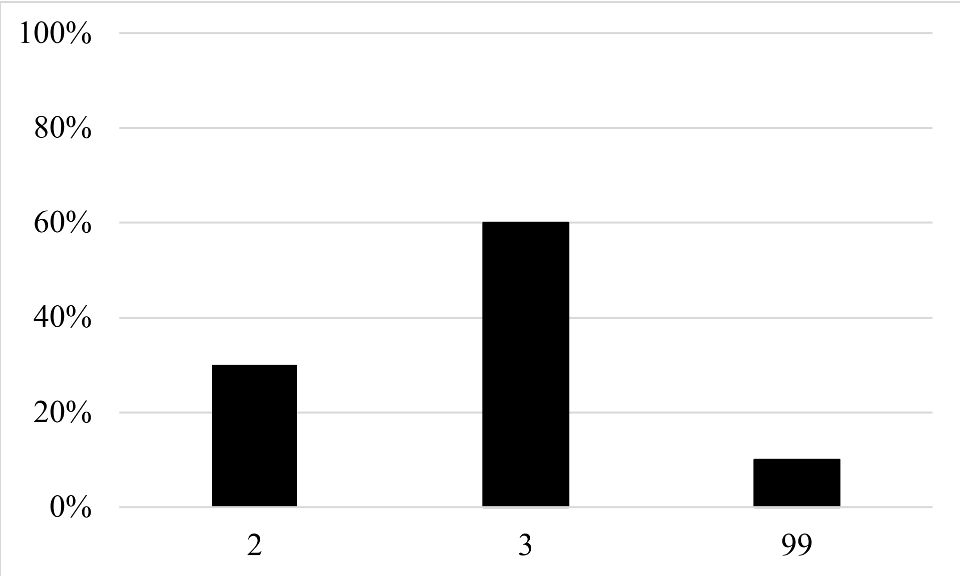


Figure 14. Seat 4 occupied busy condition

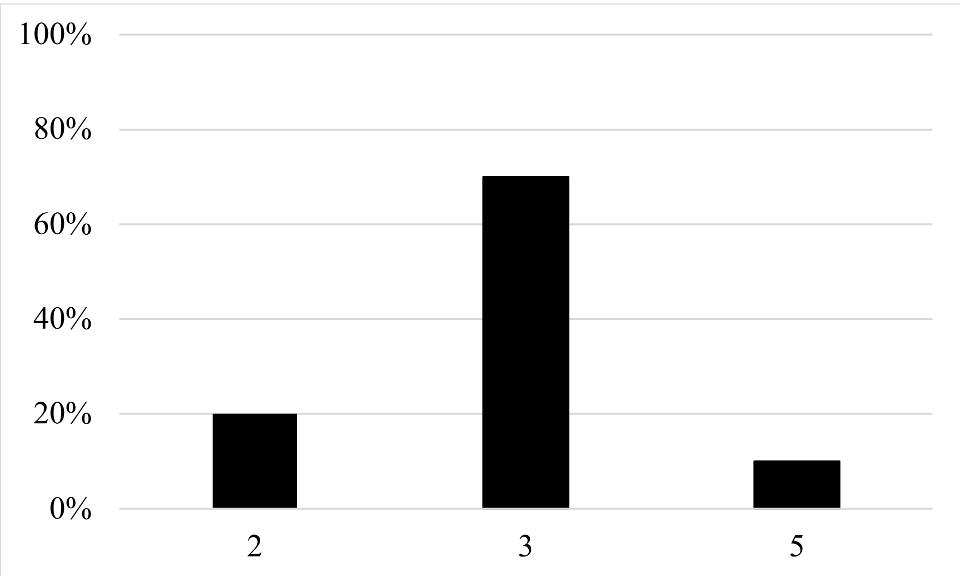


Figure 15. Seat 4 occupied non-busy condition

For the most popular seat 3, 80% (somewhat) agree that they feel undisturbed in the busy condition, while all participants feel undisturbed in the non-busy condition. Considering future persons 60% (somewhat) agree to feel undisturbed in the busy condition, while 90% feel undisturbed if future persons are going to sit in the non-busy condition. Concerning the second most popular choice 60% (vs. 80% in non-busy) (somewhat) agree that they feel undisturbed in a busy environment. When additional people are going to sit, 30% (vs. 70% non-busy) would feel undisturbed. These frequencies give support that in this specific situation seat 3 gives both the most immediate and anticipated PS.

Observational Study Seating Boot: Methods

Participants

We observed 106 people that set down in one of the seating booths in the faculty of behavior and social science at Leiden University. Of those participants, twenty-four agreed to fill in a post questionnaire (female: 15, male: 7, other: 2). As compensation for taking part in the post-questionnaire study, participants had the chance to enter a raffle with the option to win one of two 15 € Amazon gift cards.

Setting

On the first floor at the faculty of behavioral and social science at Leiden University are eight seating booths. A six-person seating booth comes with three tables a 100cm x 70 cm (5 cm between the tables), six stools a 45cm x 75cm, a back wall, a roof, and three lights (one over each table; Figure 8). Moreover, we closed off the seating booths on the sides, so that only four booths in total were open. This made it easier to control the situation and observe all open booths at once; and also, to see whether people prefer an empty booth over an already occupied (which we indeed predicted to be the case).

Materials and Procedure

The observer noted the observation (setting empty, one stool occupied, specific stool chosen, and busy or non-busy environment) and approached the participant and ask whether they are willing to fill out a short questionnaire, asking participants about their motivations for their specific seat choice. In the informed consent of the questionnaire, people were informed that they were observed. After the informed consent, the participants were shortly introduced to the seating booths and asked how often they use them. Thereafter they had to indicate their seating motivations/consideration (about the specific seat they chose, the motivations questionnaire will be the same as for the online study), followed by the LSAS scale (Heimberg et al., 1999), and demographic data (age, gender, nationality, occupational level). In the end, they were asked whether they were aware that an observation took place and finally were debriefed. The questionnaire was on a tablet that the observer handed to the participant. We observed spontaneously occurring situations.

Results

In most cases, the other seating booths were not occupied (63.2 %). Therefore, we also observed most often a situation where people were either sitting on a middle seat (26.3 %) or on a seat by the aisle (41.5%). In case the seating booth was already occupied by a person the majority choose a seat that was at least one seat apart from the person already sitting (65,38%). The descriptive statics for motivations of seat choice are presented in Table 15. Overall, we can observe similar result as in the train station seating studies.

Table 15

Descriptive statistics observation study seating booths (N = 24)

	M	*SD*
Usage	3.04	1.00
...I feel undisturbed.	4.25	0.99
...I have enough space for myself.	4.29	1.04
...I do not disturb someone else.	3.92	1.21
...if an additional person will sit in the same booth as I (and a possible other person), I still feel undisturbed.	2.88	1.15
...if an additional person will sit in the same booth as I (and a possible other person), I still would have enough space for myself.	4.08	0.97
...if an additional person will sit in the same booth as I (and a possible other person), I will not disturb that person.	4.04	1.08
...the person, who sits first, 'owns' the booth in a way.	3.50	1.29
...it is not polite to sit next to or opposite of another person.	2.71	1.49
...I have a feeling of control over the situation.	3.88	0.80
...I do not feel observed.	3.92	1.10
...I considered if someone is already sitting in the booth.	4.25	1.19
...I considered if I can easily exit the booth.	4.08	0.93
...I considered whether additional people are going to sit in the same booth as I do.	3.46	1.38
...I considered whether I can concentrate well.	4.04	1.12
Age	24.89	4.38
Immediate PS	4.26	0.77
Anticipated PS	3.48	1.06
Psy. Ownership	3.50	1.29
Others PS	3.47	0.78
LSAS	54.88	18.50

Pilot Seating Booth Study Open Questions:

	In general, what do you think about these seating booths?
1A	Comfortable
2A	They are too ark and take away space
3B	They are comfortable, there is sufficient light and I can charge my laptop easily
4B	I don't like them because I don't like sharing a table when i work. For group work it might be nice but I never tried it.
5B	Beautiful & comfortable; they are very popular; there are far too few study places at this university
6A	I really like them, I get less distracted and it's comfortable
7A	I think that they can be good for people who meet to study together
8B	Nice idea, quite private but a bit too big. Would prefer booths for 1-2 people also. Sound is also an issue as you can often hear conversations in other booths
9A	Interesting but some are hard to get out of (if there is someone sitting by the aisle)
10A	They provide privacy because of their architecture.
11A	Really like the color
12B	They are nice, sometimes a little noisy and full. And I think it is a little bit too small for six people.
13A	They look nice, but with more than 4 people it gets quite tight in there
14B	Sometimes there is a lot of noise around, but overall I like sitting here because of the electricity and the overall working atmosphere, with the ability to discuss work with other people
15A	I like them, but it would be nice to enter the booth from both sides
16B	I think they are quite nice, especially when you want to work with a group, because you can sit and communicate together in a quiet place
17A	Very comfortable, ideal to work in silence.
18B	I really like them. I am more productive here than in the library
19B	Sitting in a booth with 5 other strangers is not really my thing. But I can imagine that there might be some positive xx to be productive
20B	Cozy, help to concentrate, relaxed

Note. A = busy, B = non-busy

Could you please give a short explanation for you seat choice?	
1A (2,5)	I'm not claiming the box but I have some space of my own
2A (1,4)	So, I can exit fast
3B (4)	I still sit there cause it is in the aisle, and considering that not a lot more people are coming I can't be disturbed
4B (2)	I would have the most space in the middle and I don't need to mind other and whether they need the space
5B (3,6)	So, people can sit next to me, it is quite quiet
6A (1,2,4,5)	1&4 I like to get out easy: 2&5 If I'm alone I like to store my stuff at 1&4 to have more privacy
7A (3,6)	To be enough far from the hallway and from the desks where the computers are
8B (2,3,5,6)	6&3 have a back wall, which I like to sit next to: 2&5 are in the middle and I assume other would not want to sit on 1 & 4 so I have the booth for myself
9A (1,2,5)	If they are all empty I would choose the middle seats because they are "private" and "less disturbed" enough (more focus possible) and I'm still visible to others which might make them find another seat (somewhere else)
10A (3,6)	It is the most comfortable and I believe I could focus the best
11A (1)	Discourages other people from sitting down
12B (2,5)	You have a lot of space here
13A (3,6)	So here is enough space for the upcoming others. And I don't have to move away when they enter (make space at the entrance)
14B (3,6)	Because it is further away from the aisle and that gives me more concentration. Furthermore, as nobody will sit down next to me you will not have to ask anyone to stand up when you want to go to the toilet or get some coffee.
15A (2,5)	These seats discourage people to sit next to me, so I can work better
16B (3,6)	I always find it pleasant to sit next to a wall
17A (6)	Because if someone arrive I will not be disturbed and because it's more logic that if it's empty, I sit in a seat by the back + you're more in your space
18B (5)	Because I do not feel pushed in the corner, but still have enough silence and privacy
19B (3,6)	Sitting next to aa wall provides more privacy and also a feeling of comfort xx so I prefer those seats when I'm not concerned about disturbing others as I get up
20B (3,4,5,6)	towards the wall is cozier and less disturbed - easier to concentrate

Note. A = busy, B = non-busy; numbers in brackets = seat choice

In general, what are reasons for your to leave a seating booth?	
1A	loud talking, too many people
2A	too crowded I would feel claustrophobic
3B	when I need to go home
4B	if it gets very loud or crowded
5B	?
6A	People who smell really bad o are loud/annoying
7A	If I do not have enough space for myself xx because of people sit close too me and too crowded and noisy
8B	Too many strangers, too much noise, too hot, feeling stressed and need to be alone
9A	Either because it's too crowded, or I don't have freedom to leave it if I sit closer to the wall. It would mean I have disturbed someone in order to get out.
10A	If the booth was crowded, too noisy. Basically, if I would not have enough space to focus.
11A	Noise
12B	People talking and eating loudly
13A	If it is too crowded. If someone is sick, coughs, eats, or talks!
14B	When people are talking to each other or disturbing or when there are a lot of people seated in the booth I prefer 2 or max 3 in total
15A	Loud noises e.g.: people talking, music playing
16B	If I would have to pass a person, I won't take the seat.
17A	If finished what I had to do or because I want to smoke
18B	If people are too loud or people go and come a lot.
19B	If someone blocks the exit and I need to ask them each time I get up. As soon as I need to get up I'm not coming back.
20B	Finished studying, loud people, smelly food

Note. A = busy, B = non-busy

Appendix D: Questionnaire

Questionnaire Study 2 Version One and Two

Questionnaire: Seating Arrangements at Leiden Central Station

Welcome!

You are going to participate in a short study of Leiden University on seating behavior. You will be asked to write about different seating arrangements. Thereafter, you will be asked to indicate some demographic data. The study takes approximately 5 minutes. You can withdraw participation at any time, without providing any explanation.

Your responses are collected anonymously and therefore your anonymity is guaranteed. To participate in this study, you must be 18 years or older.

This study is coordinated by Dr. Henk Staats from Leiden University, the Netherlands (staats@fsw.leidenuniv.nl). If you have any questions about this study you can contact him.

If you are 18 years or older, have read and understood the information above, and consent to participate in this study you can check the box "I agree to participate" below and start with the study. If you are younger than 18 years and/or do not consent to participate in this study, you can check the box "I do not agree to participate" below, in this case, you do not need to continue.

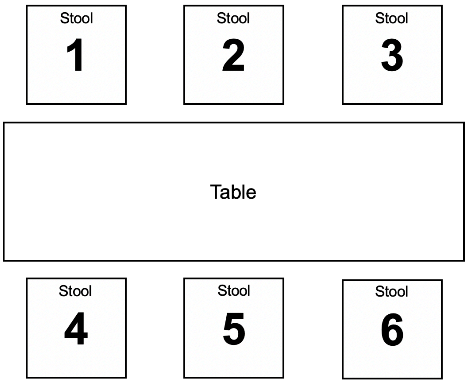
☐ I agree to participate

☐ I do not agree to participate

Seating Arrangements at Leiden Central Station

The Central Station in Leiden is a busy environment with many passers-by, shops, information boards, and places to eat.

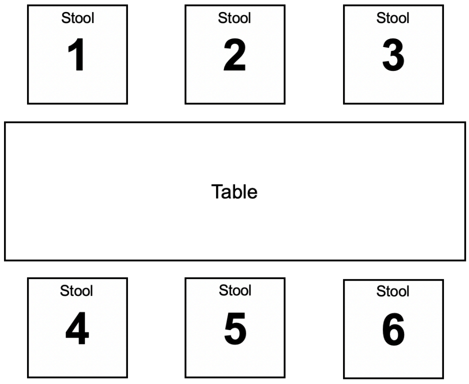
In the station hall, you can find tables with benches and stools, where one can sit down to rest, to wait for someone or the train, and to eat. In the following you can see a simplified graphic of how one of these tables with six stools looks like:



Version 1:

Try to imagine the following situation as good as possible:

You are at Leiden Central Station and have to wait for your train. You want to eat something while you wait and therefore decide to sit down at one of the tables at Leiden Central Station. All stools are empty.



1. How would you feel sitting in stool **1**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

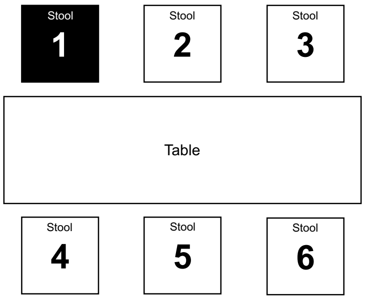
2. How would you feel sitting in stool **2**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

Some final questions and then you are done:

Version 2:

Try to imagine the following situation as good as possible:

You are at Leiden Central Station and have to wait for your train. You want to eat something while you wait and therefore decide to sit down at one of the tables at Leiden Central Station. White stands for an empty stool, while black stands for an occupied stool. Therefore, in this scenario stool 1 is occupied by a person.

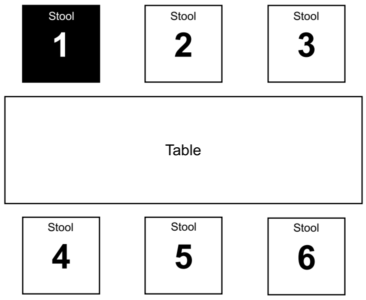


3. How would you feel sitting in stool **2**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

4. How would you feel sitting in stool **3**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

Try to imagine the following situation as good as possible:

You are at Leiden Central Station and have to wait for your train. You want to eat something while you wait and therefore decide to sit down at one of the tables at Leiden Central Station. White stands for an empty stool, while black stands for an occupied stool. Therefore, in this scenario stool 1 is occupied by a person.



5. How would you feel sitting in stool **4**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

____
____
____
____
____
____

6. How would you feel sitting in stool **5**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

____
____
____
____
____
____

7. How would you feel sitting in stool **6**? Please elaborate on your answer. There are no right or wrong answers, we are just interested in what you think.

____
____
____
____

____

____

8. How familiar are you with the seating arrangements at Leiden Central Station? Pleas cycle which classification applies best.

Not at all familiar	Slightly familiar	Moderately familiar	Very familiar	Extremely familiar
1	**2**	**3**	**4**	**5**

9. Please indicate your gender by ticking the box.

☐ Male

☐ Female

☐ Prefer not to answer

10. How old are you?

☐

☐ Prefer not to answer

11. Any further comments?

____

____

____

Thank you for participating in our study! If you have any questions, feel free to contact us.

Questionnaire Study 3 Control Condition as Example

Train Station Seating Study

Start of Block: Default Question Block

Start of Block: Informed Consent

Consent
Welcome! We are interested in people's opinion on different seating arrangements. Thus, we invite you to fill out this short questionnaire, in which you will be asked for your opinion on seating arrangements in a public setting. You will also be asked to provide some demographic data (gender, age, nationality, and occupation). It will take approximately 10 minutes to fill out this questionnaire. You can withdraw participation at any time, without providing any explanation. But, of course, we would be happy if you were willing to participate. Your responses are collected anonymously and, therefore, your anonymity is guaranteed. To participate in this study, you must be 18 years or older. As a thank you for participating, you have the option to enter a lottery to win one of two 15€ Amazon gift cards at the end of the survey. This study is conducted by Mirjam Reidick (m.c.reidick@umail.leidenuniv.nl) and Dr. Henk Staats (staats@fsw.leidenuniv.nl) from Leiden University, the Netherlands if you have any questions feel free to contact us. If you are 18 years or older, have read and understood the information above, and consent to participate in this study you can click "I agree to participate" below and the study will start. If you are younger than 18 years and/or do not consent to participate in this study you can click "I do not agree to participate" below. In the latter case, you do not need to continue.

○ I agree to participate (1)

○ I do not agree to participate (2)

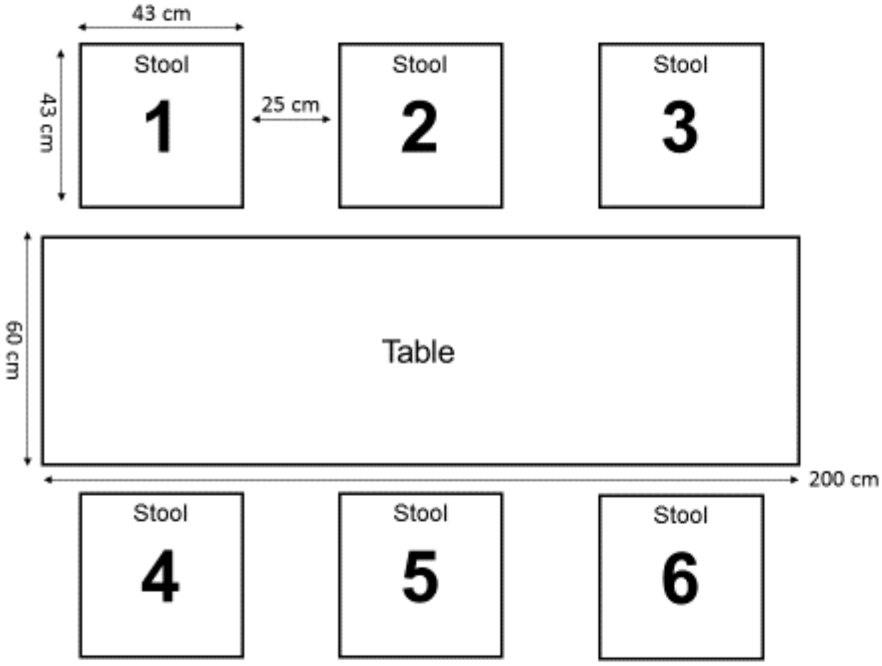
Skip To: End of Survey If Welcome! We are interested in people's opinion on different seating arrangements. Thus, we invi... = I do not agree to participate

Page Break

End of Block: Informed Consent

Start of Block: Seating Arrangement

Intro Designers are constantly developing new seating arrangements. In public settings, such as train stations, diverse seating arrangements can be found, of which one will be introduced in the following. In the hall of some train stations, you can find tables with benches and stools, where one can sit down to rest, to wait for someone or the train, and to eat. The tables are located in the middle of the station hall. In the following you can see a simplified graphic of how one of these tables with six stools looks like.



Familiarity How familiar are you with this seating arrangement (tables and stools) at train stations (1= Not at all familiar; 5 = extremely familiar)?

	Not at all familiar	Slightly familiar	Moderately familiar	Familiar	Very familiar
	1	2	3	4	5
Familiarity ()					

Display This Question:

If How familiar are you with this seating arrangement (tables and stools) at train stations (1= Not... [Familiarity] > 1

Usage How often do you use such a seating arrangement while you are at a train station.

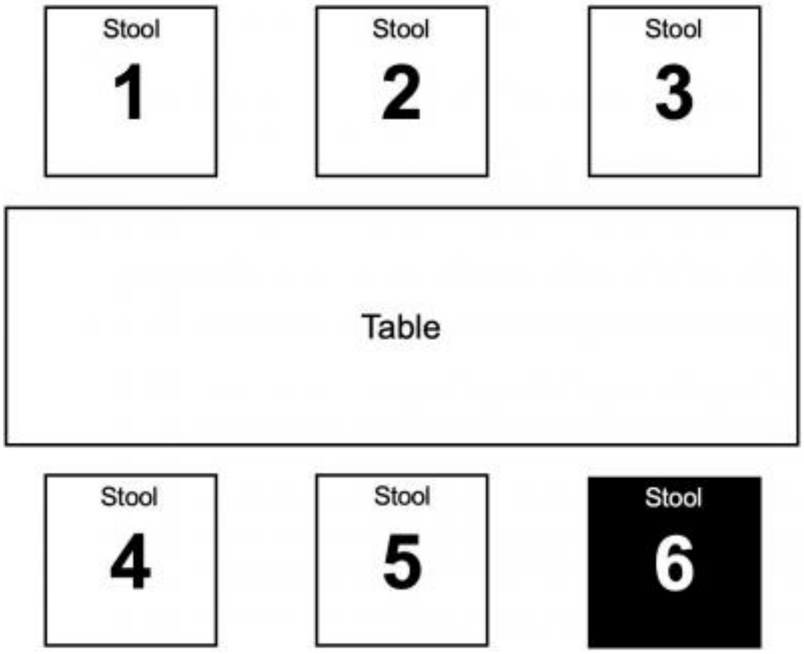
	Not at all	Rarely	Sometimes	Often	Very often
	1	2	3	4	5
Amount of usage ()					

Page Break

End of Block: Seating Arrangement

Start of Block: Seating Motivation Neutral

Neutral6 Try to imagine the following situation as good as possible:
You are waiting for your train. You want to eat something while you wait and, therefore, decide to sit down at one of the tables. The color white stands for an empty stool, while black stands for an occupied stool. Therefore, in this scenario stool 6 is occupied by a person.



N6C In this scenario which stool would you choose to sit on (stool 6 is occupied)?

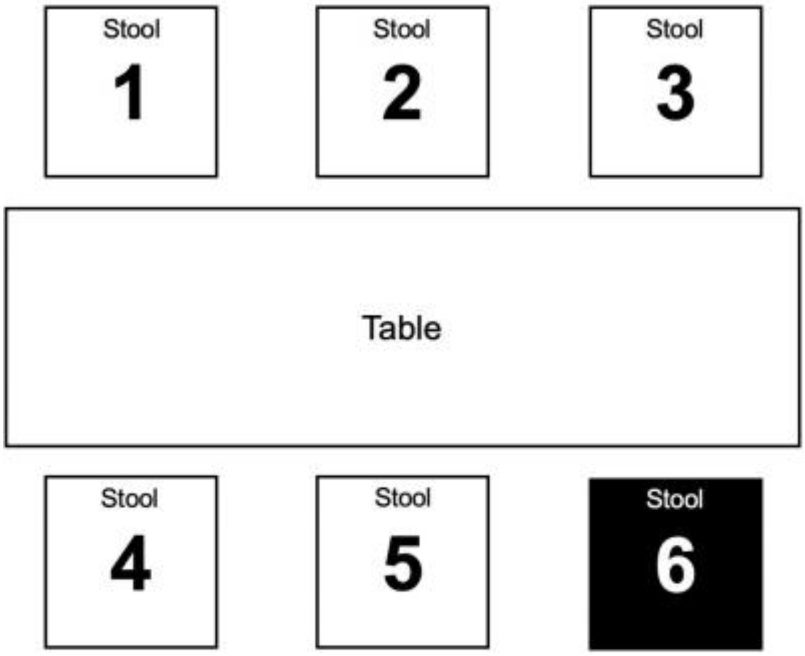
- ○ Stool 1 (1)
- ○ Stool 2 (2)
- ○ Stool 3 (3)
- ○ Stool 4 (4)
- ○ Stool 5 (5)

N6NC In this scenario which stool would you <u>not</u> choose to sit on (stool 6 is occupied)?

- ○ Stool 1 (1)
- ○ Stool 2 (2)
- ○ Stool 3 (3)
- ○ Stool 4 (4)
- ○ Stool 5 (5)

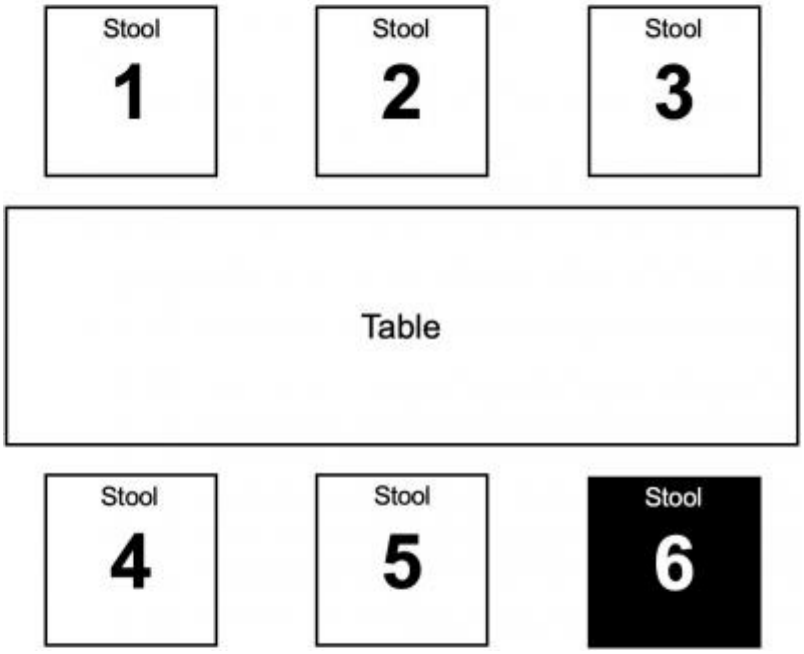
Page Break

N6M What were your reasons and motivations for your seat choice (${N6C/ChoiceGroup/SelectedChoices}) in the given scenario? Did you consider certain things?



N6R Please indicate the extent to which you agree on the following statements. There are no right or wrong answers, we are just interested in your opinion. Please remember in this scenario you chose **${N6C/ChoiceGroup/SelectedChoices}** to sit on. I chose **${N6C/ChoiceGroup/SelectedChoices}**, because...	Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Agree (5)
...I feel undisturbed. (1)	○	○	○	○	○
...I have enough space for myself. (2)	○	○	○	○	○
...I do <u>not</u> disturb someone else. (3)	○	○	○	○	○
...if an additional person will sit at the same table, as I and the person on stool 6 do, I still feel undisturbed. (4)	○	○	○	○	○
...if an additional person will sit at the same table, as I and the person on stool 6 do, I still would have enough space for myself. (5)	○	○	○	○	○
...if an additional person will sit at the same table, as I and the person on stool 6 do, I will <u>not</u> disturb that person. (6)	○	○	○	○	○
...the person, who sits first (so the person on stool 6), 'owns' the table in a way. (7)	○	○	○	○	○
...the person on stool 6, who sat first, discourages me to sit at the same table. (8)	○	○	○	○	○
...it is <u>not</u> polite to sit next to or opposite of another person. (9)	○	○	○	○	○
...I have a feeling of control over the situation. (10)	○	○	○	○	○
...I sit directly opposite of someone. (11)	○	○	○	○	○
...I sit directly next to someone. (12)	○	○	○	○	○
...I feel observed. (13)	○	○	○	○	○

N6NCM In this scenario stool 6 is occupied.



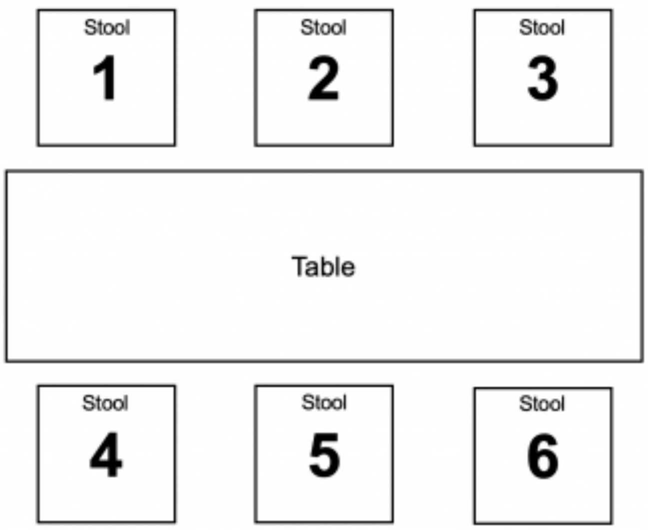
N6NCR In the previous question you were asked about your seat choice. In this question, you will be asked you about **${N6NC/ChoiceGroup/SelectedChoices}**, which you did not choose.

Please imagine now you would actually sit on **${N6NC/ChoiceGroup/SelectedChoices}** in the given situation, where stool 6 is already occupied. Please rate this situation by indicating the extent to which you agree on the following statements.

When sitting on ${N6NC/ChoiceGroup/SelectedChoices},...	Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Agree (5)
...I would feel undisturbed. (1)	○	○	○	○	○
...I would have enough space for myself. (2)	○	○	○	○	○
...I would not disturb someone else. (3)	○	○	○	○	○
...I would feel undisturbed even if an additional person will sit at the same table, as I and the person on stool 6 do. (4)	○	○	○	○	○
...I would have enough space for myself even if an additional person will sit at the same table, as I and the person on stool 6 do. (5)	○	○	○	○	○
...I would not disturb an additional person, that will sit at the same table, as I and the person on stool 6 do. (6)	○	○	○	○	○
...the person, who sits first (so the person on stool 6), 'owns' the table in a way. (7)	○	○	○	○	○
...the person on stool 6, who sat first, discourages me to sit at the same table. (8)	○	○	○	○	○
...I would not be polite, as I would sit next to or opposite of another person. (9)	○	○	○	○	○
...I would have a feeling of control over the situation. (10)	○	○	○	○	○
...I would sit directly opposite of someone. (11)	○	○	○	○	○
...I would sit directly next to someone. (12)	○	○	○	○	○
...I would feel observed. (13)	○	○	○	○	○

Page Break

N0 Try to imagine the following situation as good as possible:
You are waiting for your train. You want to eat something while you wait and, therefore, decide to sit down at one of the tables. The color white stands for an empty stool, while black stands for an occupied stool. Therefore, in this situation you find an empty table, as no stool is occupied.

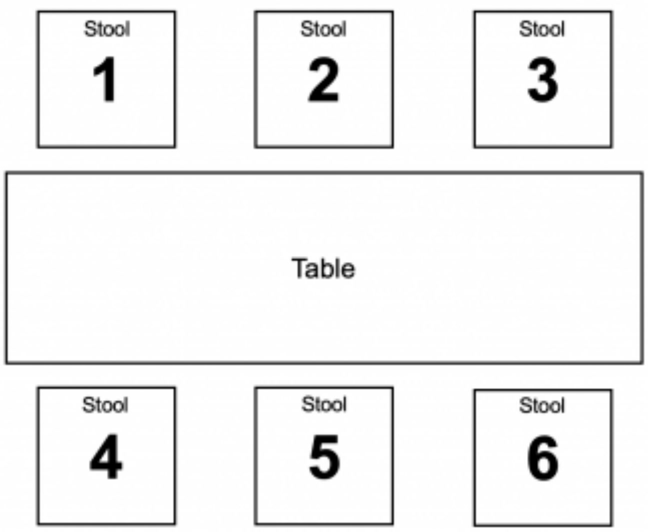


N0C In this scenario which stool would you choose to sit on (no stool is occupied)?

- Corner-Stool (1,3,4, or 6) (1)
- Middle-Stool (2 or 5) (2)

Page Break

N0M What were your reasons and motivations for your seat choice in the given scenario? Did you consider certain things?

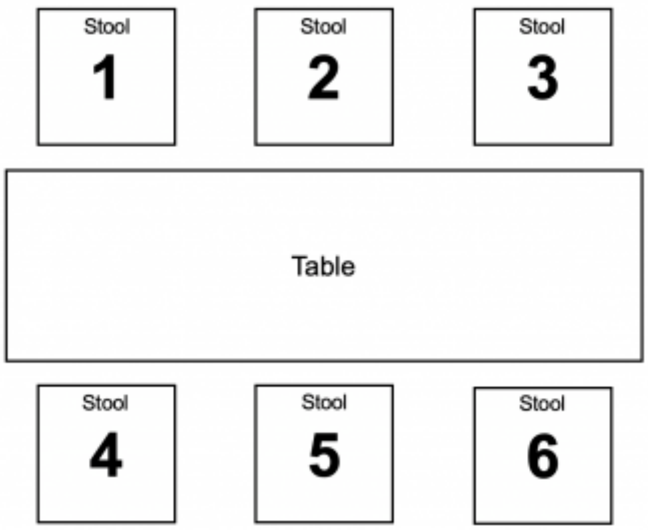


N0R Please indicate the extent to which you agree on the following statements. There are no right or wrong answers, we are just interested in your opinion. Please remember in this scenario you chose a **${N0C/ChoiceGroup/SelectedChoices}** to sit on.

I chose a ${N0C/ChoiceGroup/SelectedChoices}, because...	Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Agree (5)
...I feel undisturbed. (1)	○	○	○	○	○
...I have enough space for myself. (2)	○	○	○	○	○
...I do not disturb someone else. (3)	○	○	○	○	○
...if an additional person will sit at the same table as I do, I still feel undisturbed. (4)	○	○	○	○	○
...if an additional person will sit at the same table as I do, I still have enough space for myself. (5)	○	○	○	○	○
...if an additional person will sit at the same table as I do, I will not disturb that person. (6)	○	○	○	○	○
...the person, who sits first (so myself), 'owns' the table in a way. (7)	○	○	○	○	○
...I feel the need to discourage others to sit at the same table as I do. (8)	○	○	○	○	○
...I have a feeling of control over the situation. (9)	○	○	○	○	○

Page Break

N0NCM In this scenario no stool is occupied yet.



N0NCR In the previous question you were asked about your seat choice. In this question you will be asked you about a **${N0C/ChoiceGroup/UnselectedChoices}**, which you did not choose.

Please imagine now you would actually sit on a **${N0C/ChoiceGroup/UnselectedChoices}** in the given situation. Please rate this situation by indicating the extent to which you agree on the following statements.

When sitting on a **${N0C/ChoiceGroup/UnselectedChoices}**,...	Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Agree (5)
...I would feel undisturbed. (1)	○	○	○	○	○
...I would have enough space for myself. (2)	○	○	○	○	○
...I would not disturb someone else. (3)	○	○	○	○	○
...I would feel undisturbed even if an additional person will sit at the same table as I do. (4)	○	○	○	○	○
...I would have enough space for myself even if an additional person will sit at the same table as I do. (5)	○	○	○	○	○
...I would not disturb an additional person, that will sit at the same table as I do. (6)	○	○	○	○	○
...I would 'own' the table in a way, as I sat first. (7)	○	○	○	○	○
...I would feel the need to discourage others to sit at the same table as I do. (8)	○	○	○	○	○
...I would have a feeling of control over the situation. (9)	○	○	○	○	○

Page Break

Questionnaire Seating Booth Studies

Pilot Booth Paper-and-Pencil Study Busy Condition as Example

Questionnaire: Seating Arrangements at Pieter de la Court

Welcome!

We are interested in people's opinions on different seating arrangements at Leiden University. Thus, we invite you to fill out this short questionnaire, where you will be asked your opinion on seating arrangements at this faculty. You will also be asked to provide some demographic data (gender, age, nationality, and occupation). It will take approximately 7 minutes to fill out the questionnaire. You can withdraw participation at any time, without providing any explanation. But of course we would be very happy if you are willing to participate.

This study is approved by the Ethics Committee Psychology at Leiden University. Your responses are collected anonymously and therefore your anonymity is guaranteed. To participate in this study, you must be 18 years or older.

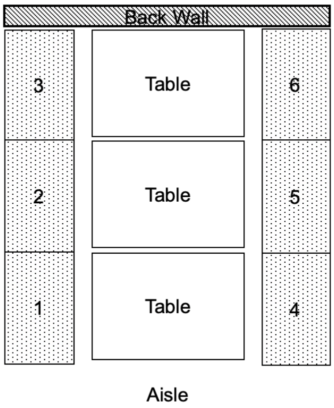
This study is conducted by Mirjam Reidick (m.c.reidick@umail.leidenuniv.nl) and supervised by Dr. Henk Staats from Leiden University, the Netherlands (staats@fsw.leidenuniv.nl). If you have any questions feel free to contact us.

If you are 18 years or older, have read and understood the information above, and consent to participate in this study you can tick the box "I agree to participate" below and start with the study. If you are younger than 18 years and/or do not consent to participate in this study, you can tick the box "I do not agree to participate" below. In the latter case, you do not need to continue.

☐ I agree to participate

☐ I do not agree to participate

1. On the first floor of this faculty, you can find new seating booths (in which you are currently sitting). In the following you can see a simplified graphic of how one of these booths for six persons looks like:



	Not at all familiar	Slightly familiar	Moderately familiar	Very familiar	Extremely familiar
How familiar are you with these seating booths?	**1**	**2**	**3**	**4**	**5**

	Not at all	Rarely	Sometimes	Often	Very Often
How often do you use these seating booths?	**1**	**2**	**3**	**4**	**5**

In general, what do you think about these seating booths?

____

____

2. In the following we have some general questions about using the seating booths for a study or work purpose. Please circle to what extent you agree with the following statements. Remember, there are no right or wrong answers, we are just interested in your opinion.

	Disagree	Somewhat disagree	Neither nor	Somewhat agree	Agree
The seating booths look pleasant to work/study in.	**1**	**2**	**3**	**4**	**5**
The seating booths have a good illumination level.	**1**	**2**	**3**	**4**	**5**
The seating booths are usually crowded.	**1**	**2**	**3**	**4**	**5**
I prefer studying in the seating booths over the long tables, that one can find in the central hallways of the faculty.	**1**	**2**	**3**	**4**	**5**
I prefer studying in the seating booths over individual study cubicles in the library (e.g., those that were in the library of this faculty).	**1**	**2**	**3**	**4**	**5**

3. You are at the faculty to study / get some work done. Imagine you choose a certain seat in one of the six-person seating booths. When you choose a seat do you consider certain things? What are your reasons and motivations for your seat choice? Circle to what extent you agree with the following statements (taking your seat choosing behavior into account). Remember, there are no right or wrong answers, we are just interested in your opinion.

When I choose a seat in a seating booth,…

	Disagree	Somewhat disagree	Neither nor	Somewhat agree	Agree
…I consider whether I would be able to concentrate well in the booth.	**1**	**2**	**3**	**4**	**5**
…I consider whether I feel comfortable.	**1**	**2**	**3**	**4**	**5**

…I consider whether it is silent inside the booth.	**1**	**2**	**3**	**4**	**5**
…I consider whether others are already sitting in the booth.	**1**	**2**	**3**	**4**	**5**

When I choose a seat in a seating booth…

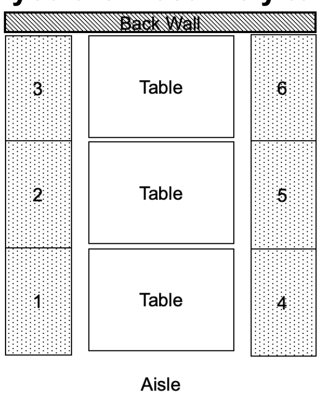
… I feel reluctant to enter and take a seat, if someone else is already sitting in the booth.	**1**	**2**	**3**	**4**	**5**
…I feel that the person who sits down first in the seating booth "owns" the booth in a way.	**1**	**2**	**3**	**4**	**5**
… I feel the need to discourage others to sit in the same booth as me, so that they do not invade my work/study space.	**1**	**2**	**3**	**4**	**5**
…I hope that no one else will enter, when I am the first to sit in the booth.	**1**	**2**	**3**	**4**	**5**
…I consider that people walking by might disturb me and therefore I do <u>not</u> like to sit by the aisle (1&4).	**1**	**2**	**3**	**4**	**5**
…I consider whether I can easily get out of the booth and therefore I like to sit in an aisle seat (1&4).	**1**	**2**	**3**	**4**	**5**
…I consider to sit in a seat by the back (3&6), as this seat provides less disturbance.	**1**	**2**	**3**	**4**	**5**
… I consider in which seat I would feel the least disturbed.	**1**	**2**	**3**	**4**	**5**
…I consider whether I would disturb someone else.	**1**	**2**	**3**	**4**	**5**
…I consider whether it is polite to sit directly next to or opposite to others.	**1**	**2**	**3**	**4**	**5**
…I consider what people think of me when I sit with them.	**1**	**2**	**3**	**4**	**5**
…I consider whether I would have enough space to study/work well.	**1**	**2**	**3**	**4**	**5**

…I consider whether I would easily touch others already sitting in the booth.	1	2	3	4	5
…I consider whether I would easily touch the belongings of others.	1	2	3	4	5
…I consider whether others are eating or drinking.	1	2	3	4	5

When I choose a seat in a seating booth…

…I consider whether others are talking.	1	2	3	4	5
…I consider whether the seating booths provide privacy from the outside to study/work well.	1	2	3	4	5
…I consider whether those already sitting look agreeable.	1	2	3	4	5
…I consider the possible arrival of people that might sit down, so that I do not get disturbed.	1	2	3	4	5
…I consider the possible arrival of people that might sit down, so that I do not disturb them.	1	2	3	4	5

4. Please look at the graphic. Imagine you arrive quite early at the faculty to get some work done. The seating booths are all still empty. You decide to sit in one of the six-person booths. You are certain that <u>more people are coming to sit in your chosen booth</u>. Which specific seat/seats would you choose (1, 2, 3, 4, 5, 6). Please circle the number or numbers of the seats you are most likely to sit down in.



1	2	3	4	5	6

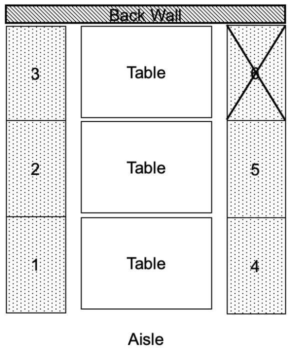
Could you please give a short explanation for your seat choice?

____

____

5. In the following you are presented with different seating stations (see figures) and corresponding questions.

Consider following situation, seat 6 is occupied by a person.



In this scenario, where seat 6 is occupied, which seat would you most likely choose to sit down? Remember the faculty is quite busy and still more people are likely to sit in the same booth as you. Note the number!
Number: [ ]

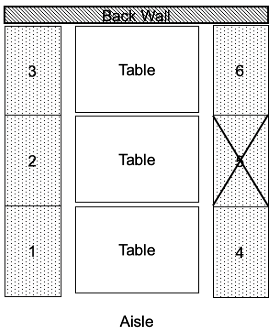
Some specific questions about each seat will follow. Please indicate the extent to which you agree or disagree.

Remember **seat 6 is occupied**.

	Disagree	Somewhat disagree	Neither nor	Somewhat agree	Agree
When sitting in **seat 1 I** would feel undisturbed.	1	2	3	4	5
When sitting in **seat 1 I** would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 2 I** would feel undisturbed.	1	2	3	4	5
When sitting in **seat 2 I** would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5

When sitting in **seat 3** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 3** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 4** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 4** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 5** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 5** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5

Consider following situation, seat 5 is occupied by a person.



In this scenario, where seat 5 is occupied, which seat would you most likely choose to sit down? Remember the faculty is quite busy and still more people are likely to sit in the same booth as you. Note the number!
Number:

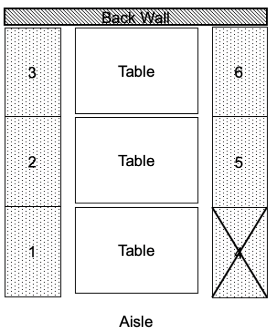
Some specific questions about each seat will follow. Please indicate whether you agree or disagree.

Remember **seat 5 is occupied**.

	Disagree	Somewhat disagree	Neither nor	Somewhat agree	Agree
When sitting in **seat 1** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 1** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 2** I would feel undisturbed.	1	2	3	4	5

When sitting in **seat 2** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 3** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 3** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 4** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 4** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 6** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 6** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5

Consider following situation, seat 4 is occupied by a person. Please indicate your opinion for each empty seat by ticking the boxes.



In this scenario, where seat 4 is occupied, which seat would you most likely choose to sit down? Remember the faculty is quite busy and still more people are likely to sit in the same booth as you. Note the number!
Number:

Some specific questions about each seat will follow. Please indicate whether you agree or disagree.

Remember **seat 4 is occupied**.

	Disagree	Somewhat disagree	Neither nor	Somewhat agree	Agree
When sitting in **seat 1** I would feel undisturbed.	1	2	3	4	5

When sitting in **seat 1** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 2** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 2** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 3** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 3** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 5** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 5** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5
When sitting in **seat 6** I would feel undisturbed.	1	2	3	4	5
When sitting in **seat 6** I would feel undisturbed even if an additional person is going to sit in the booth.	1	2	3	4	5

You answered a lot of specific questions about different seat choices. In general, what are reasons for you to leave one of the seating booths?

____

____

6. Some final questions and then you are done:

Please indicate your gender by ticking the box.

☐ Male
☐ Female
☐ Other
☐ Prefer not to answer

How old are you?

☐

☐ Prefer not to answer

What is your nationality?

☐ Prefer not to answer

Which statement describes your current employment status best? Please tick the box.

☐ Working
☐ Not working (looking for work, retired, disabled, or other)
☐ Student
☐ Other: ____________________

	Not at all		Neither nor		Extremely
Were the instructions clear?	**1**	**2**	**3**	**4**	**5**
Were the questions clear?	**1**	**2**	**3**	**4**	**5**

Any further comments?

____

____

Thank you for participating in our study! If you have any questions, feel free to contact us.

Seating Booth Observational Study Questionnaire

Seating Booth Observational Study

Start of Block: Default Question Block

Start of Block: Observation

Q57 Observation ID

____

Page Break

End of Block: Observation

Start of Block: Informed Consent

Consent
Welcome!

We are interested in people’s seating choices and people's opinions on different seating arrangements at Leiden University. Thus, we invite you to fill out this short questionnaire. In this questionnaire you will be asked about your opinion on the seating booths that you are currently sitting in. We observe and record your seat choice and therefore we will ask you about your motivation for your certain seat choice. You will also be asked to indicate some demographic data (gender, age, nationality, and occupation). It takes approximately 5 minutes to fill in the questionnaire. You can withdraw participation at any time, without providing any explanation.
Your responses and your observed seat choice are collected anonymously and therefore your anonymity is guaranteed. To participate in this study, you must be 18 years or older. As a thank you for participating you have the option to enter a raffle at the end of this study for a chance to win one of two 15€ Amazon gift cards.

This study is conducted by Mirjam Reidick (m.c.reidick@umail.leidenuniv.nl) and Dr. Henk Staats from Leiden University, the Netherlands (staats@fsw.leidenuniv.nl). If you have any questions feel free to contact us.

If you are 18 years or older, have read and understood the information above, and consent to participate in this study you can tick the box "I agree to participate" below and start with the study. If you are younger than 18 years and/or do not consent to participate in this study, you can tick the box "I do not agree to participate" below. In the latter case, you do not need to continue.

○ I agree to participate (1)

○ I do not agree to participate (2)

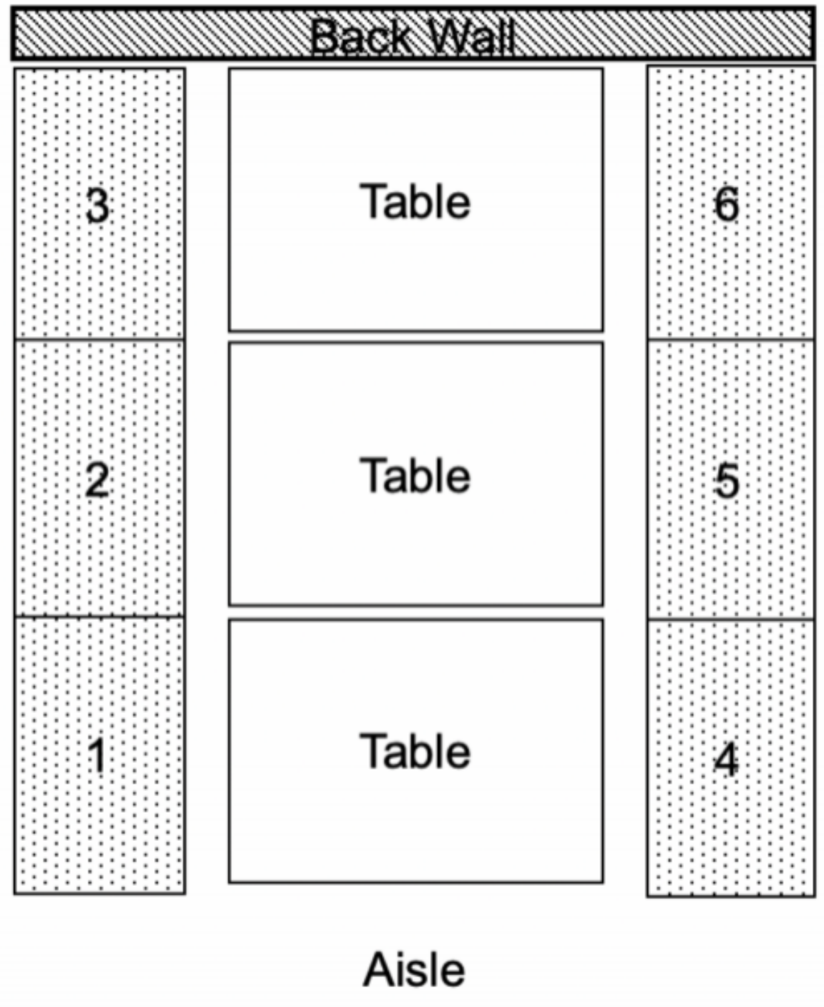
Skip To: End of Survey If Welcome! We are interested in people’s seating choices and people's opinions on different seati... = I do not agree to participate

Page Break

End of Block: Informed Consent

Start of Block: Seating Arrangement

Intro On the first floor of this faculty, you can find new seating booths (in which you are currently sitting). In the following you can see a simplified graphic of how one of these booths for six persons looks:



Usage How often do you use these seating booths, when you are in the faculty?

	Not at all	Rarely	Sometimes	Often	Very often
	1	2	3	4	5
Amount of usage ()					

Page Break

End of Block: Seating Arrangement

Start of Block: Seating Motivation Neutral

IM What were your reasons and motivations for your seat choice? Did you consider certain things?

I chose this certain seat (in which you are currently sitting in), because...	Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Agree (5)
...I feel undisturbed. (1)	○	○	○	○	○
...I have enough space for myself. (2)	○	○	○	○	○
...I do <u>not</u> disturb someone else. (3)	○	○	○	○	○
...if an additional person will sit in the same booth as I(and a possible other person), I still feel undisturbed. (4)	○	○	○	○	○
...if an additional person will sit in the same booth as I (and a possible other person), I still would have enough space for myself. (5)	○	○	○	○	○
...if an additional person will sit in the same booth as I (and a possible other person), I will <u>not</u> disturb that person. (6)	○	○	○	○	○
...the person, who sits first, 'owns' the booth in a way. (7)	○	○	○	○	○
...it is <u>not</u> polite to sit next to or opposite of another person. (9)	○	○	○	○	○
...I have a feeling of control over the situation. (10)	○	○	○	○	○
...I do <u>not</u> feel observed. (13)	○	○	○	○	○
...I considered if someone is already sitting in the booth. (14)	○	○	○	○	○
...I considered if I can easily exit the booth. (15)	○	○	○	○	○
...I considered whether additional people are going to sit in the same booth as I do. (16)	○	○	○	○	○
...I considered whether I can concentrate well. (17)	○	○	○	○	○

FurtherConsid Any other aspects you consider (and would like to share) when choosing a seat in these seating booths?

____

Page Break

Person sitting Was there already another person sitting in your booth?

○ Yes (1)

○ No (2)

Page Break

End of Block: Seating Motivation Neutral

Start of Block: LSAS

LSAS When you answer the following questions, consider how you usually feel. If you haven't been in a respective situation recently, just imagine you would be in this situation today. Don't think too long about your answer. The first impression is usually the best.

I avoid...	Never (1)	Sometimes (2)	Often (3)	Almost always (4)
...telephoning in public. (1)	○	○	○	○
...participating in small groups. (2)	○	○	○	○
...eating in public places. (3)	○	○	○	○
...drinking with others in public places. (25)	○	○	○	○
...talking to people in authority. (4)	○	○	○	○
...acting, performing, or giving a talk in front of an audience. (5)	○	○	○	○
...going to a party. (6)	○	○	○	○
...working while being observed. (7)	○	○	○	○
...writing while being observed. (8)	○	○	○	○
...calling someone you don't know very well. (9)	○	○	○	○
...talking with people you don't know very well. (10)	○	○	○	○
...meeting strangers. (11)	○	○	○	○
...urinating in a public bathroom. (12)	○	○	○	○
...entering a room when others are already seated. (13)	○	○	○	○
...being the center of attention. (14)	○	○	○	○
...speaking up at a meeting. (15)	○	○	○	○
...taking a test. (16)	○	○	○	○

...expressing a disagreement or disapproval to people you don’t know very well. (17)	○	○	○	○
...looking at people you don’t know very well in the eyes. (18)	○	○	○	○
...giving a report to a group. (19)	○	○	○	○
...trying to pick up someone. (20)	○	○	○	○
...returning goods to a store. (21)	○	○	○	○
...giving a party. (22)	○	○	○	○
...resisting a high pressure salesperson. (23)	○	○	○	○
...if you read this carefully pleas tick the 'often' box. (24)	○	○	○	○

Page Break

End of Block: LSAS

Start of Block: Demographics

Final **Some final questions and then you are done!**

Gender Please indicate your gender.

- ○ Male (1)
- ○ Female (2)
- ○ Other (3)
- ○ Prefer not to answer (4)

Age How old are you?

- ○ Age: (1) ____
- ○ Prefer not to answer (2)

Nationality What is your nationality?

- ○ Nationality: (1) ____
- ○ Prefer not to answer (2)

Ocupation Which statement best describes your current employment status?

- ○ Working (1)
- ○ Not Working (e.g., looking for work or retired) (2)
- ○ Student (3)
- ○ Trainee (5)
- ○ Other: (4) ____
- ○ Prefer not to answer (6)

Check Please answer the following questions for which you use the slider (1 = not at all, 4 = very).

	Not at all	Somewhat	Mostly	Very
	1	2	3	4
Were the instructions clear? ()				
Were the questions clear? ()				
Were you aware of being observed by someone? ()				

Page Break

Comments Any further comments (in general or in specific concerning the seating arrangements in this faculty)?

____

____

____

____

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Page Break