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*RESEARCH ARTICLE*

# RECONSIDERING LIBRARY SPACES: TRACE OF PRIVACY IN LIBRARY USERS' BEHAVIORS.

**Seyed Farhad Tayyebi.**
Department of Architecture, Istanbul Technical University, Istanbul, Turkey.

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## Abstract

This paper examines the trace of privacy in the behavioral pattern of students in the library of the faculty of architecture, Istanbul Technical University, Turkey. After scrutinizing the users' behaviors by disguised observation and taking photographs for two days, the experimental analysis shows that not only students prefer to sit in more private situations, they also apply various mechanism to achieve higher privacy level; library users prefer to sit adjacent to walls, avoid sitting near the corridors, and personalize their adjacent seats. Comparing to students with no computer, called here as paper-based users, computer-users desire a higher level of privacy; they avoid sitting near the corridors and places where their computer screen is visible to the public. Consequently, this study via revealing the robust trace of privacy in students' behavior shows that library needs to provide more private spaces to attain a more satisfactory level of service by decreasing the gap between the desired and the achieved level of users' privacy.



## Introduction:

Our behaviors as personal activities are under the influence of the environment surrounding us. Emanating from Aristotle who believed in the unified entity of environment and behaviors, recent theorists admit the continuous interaction between environment and behavior (Stokols and Altman, 1987). Although environment impacts significantly on our activities, despite some similarities, every single individual has his unique environmental perception; thus, regarding varying desired personal requirements, people react differently even in a shared environment. We are selecting the environmental stimuli based on our unique cultural, personal and temporal filters, regarded as "an internal organization of the milieu" (Lang, 1987, p.114). Afterward, we react based on our requirements and preferences, to achieve a "multiplicity of satisfaction" (Lang, 1987). Consequently, from the behavior setting point of view, the environmental stimuli, our filtering criteria, the consequent understanding of the environment, and our desires are the interrelated triggers of our response to a situation, to achieve the utmost satisfaction. Regarding the coherent interrelations between the surrounding environment and individual behaviors, diverse issues are being explored in behavior setting studies.

Personal privacy is one of the crucial notions in individual behavior and the subject of investigations in behavior setting studies. From the traditional perspective, we need to avoid interaction with others to attain our privacy and to keep the personal information secret; on the other hand, the psychological viability of human beings as social creatures depends on the interactions with others, which "requires selective disclosure of personal information" (Palen and Dourish, 2003). This dialectical essence of privacy to be both open and close, accessible and inaccessible (Altman, 1975) is re-theorized by Altman into an optimum level in the continuum from being lonely isolated to be

**Corresponding Author: Seyed Farhad Tayyebi.**
Address**:** Department of Architecture, Istanbul Technical University, Istanbul, Turkey.

fully exposed spoiling privacy. After criticizing the traditional one-way monotonic view of privacy to "keep out," he proposes that losing privacy takes place by departing from the optimum level of interaction, in either direction (Altman, 1977). As people by moving closer to or farther away both "obtain warmth and comradeship" and "avoid pricking one another" (Altman and Chemers, 1984), in a similar vein, Rappaport defines privacy as "the ability to control interactions, to have options, and to achieve desired interactions" (Lang, 1987, p.145). Consequently, Altman formulated the most satisfactory condition is while the "achieved privacy" be in the same level of the ideally-introduced "desired privacy" level for any pattern of behavior. If the achieved privacy is more than desired one or vice versa, we feel like to be isolated or in a crowded respectively (Altman, 1975), or according to Lang, socially isolated or overloaded (Lang, 1987, p.147). Privacy is an optimized accessibility level along a spectrum of interaction.

Among the multiple features of privacy, personal and physical spaces are the two significant aspects, which we use various strategies to attain their optimum level. Sommer describes personal space as the emotionally tinged zone around the human body that people feel as "their space" (Robert Sommer and Ross, 1958). Although personal space misleadingly and analogically is compared to a soap bubble or a snail shell (Katz, 1937), it does not refer to the physically bounded space; rather, it is an emotionally connected area "with an invisible boundary surrounding the person's body into which intruders may not come" (R Sommer, 1969). To attain privacy, we reserve personal spaces as the emotionally charged zone (Robert Sommer, 2002). Accordingly, we use various strategies to maintain our personal spaces, called personalization. In contrast to invisible personal space boundaries, territory concerns the physical aspects of our surrounding environment. As animals make signs in their territorial borders, human beings fix their geographic location and mark a place or object that belongs to a person or group (Lang, 1987, p.147). To achieve the desired level of privacy in our physical spaces, we use several strategies to prevent intruders from entering, which referred to as territorial behaviors. Finally, for both emotional personal and physical territorial spaces, by utilizing various approaches, we strive to achieve our ideal privacy level.

The optimum level of privacy is not a fixed phenomenon. As Altman expresses "privacy regulation was a culturally pervasive process" (Altman, 1977), not only culture plays an important role on the ideal privacy level, our desired privacy changes through the time (Lang, 1987) as well as environmental condition. Each environmental condition contains its satisfactory level of privacy; analyzing people's reactions in an environment, not only reveals the desired privacy level (Perin, 1970), it can also reflect their functional, cultural, and other behavioral preferences. Accordingly, from the window of privacy, this study analyses the behavior of students in a library as a significant place in any schools. As university is defined by "a group of buildings, gathered around a library" (Ogbuiyi and Okpe, 2013), the central brain of any academic institution is the library, and is always a focal point for research (DeClercq and Cranz, 2014; Maeda et al., 2014; Mokhtari, 2014; Murphy and Black, 2013). Finally, this study by focusing on students' habits in a library examine the trace of privacy in students' behaviors. Where they prefer to sit, how they personalize spaces, and the relationship between the students' working mode and the selected seats are analyzed to reflect the influential impact of privacy in students' behavioral pattern.

## Methodology:-

The trace of privacy in student's behavior is examined in the library of the faculty of architecture at Istanbul Technical University, Turkey. As figure 1 shows the sketch of the library, the sitting place comprises five rows of the tables; it is surrounded by two walls, on the top and the left sides of the sketch, and one corridor separating the sitting area and the right side bookshelves, and an open space in the bottom wherein the entrance exists. Differences of the borders give the sitting places some unique characteristics; for instance, students who sit in column A has more private situation than those who are in the F column. Those who on the odd numbers and work with their laptops may feel more privacy since their laptop screen is latent to the public and the open space of the library adjacent to the entrance. Having very diverse environmental conditions, from the privacy point of view, makes this place an excellent environment for the investigations students' behavior.

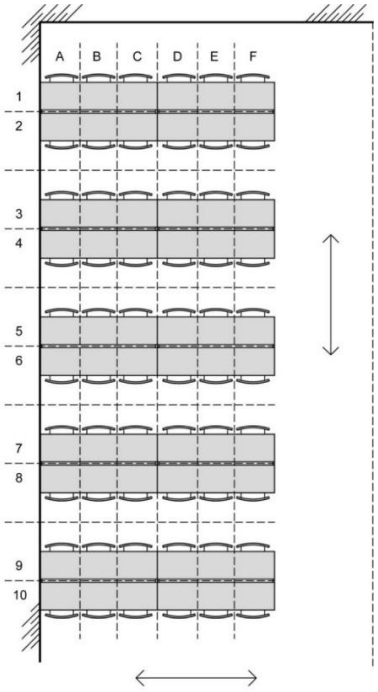


**Figure 1:** Sketch of the architectural plan of the library

Experimental analysis of students' behavior is generally conducted by disguised observation, from the upstairs, to have the most natural students' treatments. For two days, almost from the opening till the closing time, 10:00 to 22:00, the students' reactions are observed and altogether 350 photographs have been taken. Among them, 50 images taken every 30 minutes, attached to the appendix, are considered in the analysis; while to have the most accurate data the whole students' behaviors are evaluated. For example, based on the continuous observation, some packed stuff which shows the students just put them on a chair to be back later are ignored over the analysis. Contrariwise, those seats which are being used but at the time of taking photographs left over for a short break assumed as filled space. Finally, although the data are gathered by the images every half an hour, continuous observations over the students' behavior have accomplished the accuracy of the raw data.

Apart from the frequency of the occupied seats, the students' study mode, and their behaviors on reserving a place to maintain their desired level of privacy are also concerned. For instance, regarding the privacy as the focal point of the study, those who study with books and papers or even their horizontally located tablets can keep their privacy much easier, comparing to those who use a laptop with an observable vertical screen; this difference is considered as modes of study: computer-based and paper-based. Furthermore, since some people reserve their adjacent seat as a strategy to acquire more privacy, like putting their coat on the chair without using the desk, the personalized area is regarded in the analysis, called as "personal reservation." The occupied space beside the student's seat for research stuff like paper of some other functional issues are not considered as a personalization strategy, rather it is assumed as "functional reservation". Worth noting, the effect of noise, brightness, temperature, wireless accessibility and comfortableness of the chairs are disregarded since most of them have about the similar situation and they do not differ significantly from each other. Consequently, to discover the trace of privacy in students' behaviors and selecting the seats, the number of the occupied places accompanied by the study and reservation modes are tabulated in the Microsoft Excel for analysis; the data are illustrated in three analysis methods: general, vertical, and horizontal. Lastly, the results are discussed and interpreted in the conclusion of the paper.

**Experimental Analyses**

The general data analysis shows the overall people's behavior during the two days. Altogether among the 3000 opportunities for occupying the seats (50 photos * 60 Seats), 831 positions were filled; that is to say, almost 28% of the library seats are occupied averagely; the percentage in the early morning and late night is much less than around noon and afternoon. Among the participants, 554 (66.6%) were women, and 277 people (33.3%) were male. Interestingly, ladies spend their time two times than men in the library. Table 1 illustrates more details of data on

reservation strategies, accompanied by gender differentiation. As it shows, generally 49% of the students personalized the adjacent seat to attain more privacy. Although the percentage of reserving a space for privacy for women is just a bit more than men; but they do make a more functional reservation, around three times of men. That is to say, 21% of woman reserve an extra seat as a practical requirement, whereas only 7% of men need functional reservations. Interestingly, 46% of men do not occupy their nearby chair, but the percentage of woman who did not personalize any position is just 27%.

**Table 1:** the general reservation pattern of the seats

| Reservation of Seats | Reserved Seats | | Pattern of Reservation in different Sexes | | |
|---|---|---|---|---|---|
| Privacy Reservation | 407 | 49% | W | 281 | 50.7% |
| | | | M | 126 | 45.5% |
| Functional Reservation | 142 | 17% | W | 120 | 21.7% |
| | | | M | 22 | 7.9% |
| No Reserved Space | 282 | 34% | W | 153 | 27.6% |
| | | | M | 129 | 46.6% |

Table 2 reflects the general relationship between functional mode and personalization strategies. Based on table 2, 73% of students use a computer in the library which needs more privacy to protect their personal information, and the remained 27% have just paper-based resources. Almost 54% of computer-users reserved the next seat to attain more privacy, whereas only 35% of paper readers made any personal reservation. That is to say, computer-users applied 1.5 times more personalization strategies than the paper-based researchers, reflecting their higher desired level of privacy. Furthermore, more than half of the paper-based researchers did not occupy their next seats; they do not need any functional or personal reservations; while about three-quarter of computer users held their adjacent seats either as a functional or personal reservation.

**Table 2:** Reservation rate of the computer and paper-based researching

| | | | | | |
|---|---|---|---|---|---|
| Computer-based | 605 | 73% | Privacy Reservation | 327 | 54% |
| | | | Functional Reservation | 115 | 19% |
| | | | No Reservation | 163 | 27% |
| Paper-based | 226 | 27% | Privacy Reservation | 80 | 35% |
| | | | Functional Reservation | 27 | 12% |
| | | | No Reservation | 119 | 53% |

Having the plan of the library in mind, the vertical analysis focuses on the occupied seats in each seat column. Based on the data presented in table 3, the general number of filled spaces shows column A (presented in Fig. 1) is the most preferred place to sit. That is to say, 34% of the student sits near the wall. Interestingly, the 2nd preferred columns to occupy belongs to column C where is exactly beside column B where is more reserved by stuff and has the least occupants. Computer users are by far prefer to sit in column A, near the wall, and avoid using in column B and F which are respectively near the other student and corridors. While, paper-based studies are mostly done in column F, where they have the easiest access. Interestingly, although column A users are already beside the wall and possess a high level of privacy, they have the highest privacy reservation rate to keep their adjacent seat empty; they need a surreptitious space!

**Table 3:** preference of the seats in columnar categories

| | Column A | Column B | Column C | Column D | Column E | Column F |
|---|---|---|---|---|---|---|
| General Occupation | 280 (34%) | 60 (7%) | 177 (21%) | 99 (12%) | 95 (11%) | 120 (14%) |
| Computer-based | 223 (37%) | 46 (8%) | 147 (24%) | 60 (10%) | 71 (12%) | 58 (9%) |
| Paper-based | 57 (25%) | 14 (6%) | 30 (13%) | 39 (17%) | 24 (11%) | 62 (27%) |
| Privacy Reservation | 136 (33%) | 34 (8%) | 78 (19%) | 37 (9%) | 72 (18%) | 50 (12%) |

Having the architectural plan of the library in mind, the students who sit in the odd-rows face towards the corridor and the entrance, and have their laptop screen private, toward the wall. In contrast, students sitting on even number rows, backing the entrance, have much more visible screens. The horizontal analysis shows an interesting trace of the privacy condition in the seat occupations. Interestingly, for computer users, the rate of the occupied rows in odd numbers are about the same (15%, 11%, 12%, 12%, and 12%), since they all possess about the same privacy level

(table 4). In contrast, among the even rows, the closer to the end of the library, the more computer-users prefer to sit; as the data shows (11%, 9%, 9%, 7%, and 3%), just 3% of computer users sit in the 10th row, where their laptop screens are visible to public. In contrast, the rate of paper-based researchers' preference does not follow the same trend. The most users preferred to sit in the tenth and the first rows orderly with the easiest accessibilities. Finally, the number of computer users who sit on odd rows are 1.5 times than the one who sits in the even rows. This rate is vice versa for paper-based researchers who do not necessarily need any strategy to attain privacy.

**Table 4:** preference of the computer and paper-based studies in row categories

| Row | Computer-based | | Paper-based | |
|---|---|---|---|---|
| | Odd Rows | Even Rows | Odd Rows | Even Rows |
| 1 | 91 (15%) | | 35 (15%) | |
| 2 | | 68 (11%) | | 32 (14%) |
| 3 | 64 (10%) | | 16 (7%) | |
| 4 | | 55 (9%) | | 16 (7%) |
| 5 | 71 (12%) | | 13 (6%) | |
| 6 | | 54 (9%) | | 20 (9%) |
| 7 | 70 (12%) | | 13 (6%) | |
| 8 | | 42 (7%) | | 16 (7%) |
| 9 | 73 (12%) | | 9 (4%) | |
| 10 | | 17 (3%) | | 56 (25%) |
| All | 369 (61%) | 236 (39%) | 86 (38%) | 140 (62%) |

## Conclusion:-

This experimental study on students' behaviors revealed the trace of the privacy in student's behavioral pattern. After scrutinizing the library-users' activities for two days, the study revealed that around half of the library users, try to personalize the adjacent seats to achieve a higher privacy level. Not only more than one-third of students prefer to sit near the walls with a higher privacy level, but also most of them reserved a place to make their seats more private. Expectedly, as the study confirms, computer users need more privacy in comparison with the students just studying paper-based resources. Apart from the visible students' positions to keep the computer screen private, generally, the row-based analysis reveals that students who select their seats where their computer screen be latent is 1.5 times of those who sit in places with the observable computer screen. Interestingly, the rate of computer users in the last row with an invisible computer screen and a higher level of privacy is five times of the students who selected their seat near the open area with visible monitor display. Similarly, the computer-users in the library prefer not to sit near the corridors at all, while but the paper-based researchers were the most interested people to sit in near the aisles to have better accessibility. Consequently, this study confirms the robust trace of privacy in students' pattern of behavior, either by selecting their seats or personalizing their adjacent seats as a mechanism to achieve a higher privacy level.

In conclusion, many students make their endeavors to achieve more privacy, either by their seat selection, or personalizing the adjacent chair, or avoid sitting near the corridors or avoid sitting in odd rows with a visible computer screen. Accordingly, we need to consider the higher desired level of privacy in library seats, to decrease the gap between the desired and the achieved level of privacy. At last, as Nitecki shifted quality of library from basing on solely collections of sources towards the differences between the students' expectation and received services (Nitecki, 1996), by increasing the students' privacy level we can have a more qualified and satisfactory academic library.

## Reference:-


1. Altman, I. (1975): The environment and social behavior: privacy, personal space, territory, crowding. Brooks/Cole Pub. Co.
2. Altman, I. (1977): Privacy regulation: Culturally universal or culturally specific? Journal of Social Issues, 33(3): 66–84. https://doi.org/10.1111/j.1540-4560.1977.tb01883.x
3. Altman, I., & Chemers, M. M. (1984): Culture and Environment. Cambridge University Press.
4. DeClercq, C. P., & Cranz, G. (2014): Moving beyond seating-centered learning environments: opportunities and challenges identified in a POE of a campus library. The Journal of Academic Librarianship, 40(6): 574–584. https://doi.org/10.1163/_q3_SIM_00374
5. Katz, D. (1937): Animals and men. Longmans Green.
6. Lang, J. (1987): The behavior setting: A unit for Environmental Analysis and Design. Creating Architectural Theory: The Role of the Behavioral Sciences in Environmental Design, pp. 113–125.
7. Maeda, H., Quartiroli, A., Vos, P. W., Carr, L. J., & Mahar, M. T. (2014): Feasibility of retrofitting a university library with active workstations to reduce sedentary behavior. American Journal of Preventive Medicine, 46(5): 525–528. https://doi.org/10.1016/j.amepre.2014.01.024
8. Mokhtari, H. (2014): A quantitative survey on the influence of students' epistemic beliefs on their general information seeking behavior. The Journal of Academic Librarianship, 40(3–4): 259–263.
9. Murphy, S. A., & Black, E. L. (2013): Embedding guides where students learn: do design choices and librarian behavior make a difference? The Journal of Academic Librarianship, 39(6): 528–534. https://doi.org/10.1016/j.acalib.2013.06.007
10. Nitecki, D. A. (1996): Changing the concept and measure of service quality in academic libraries. The Journal of Academic Librarianship, 22(3): 181–190. https://doi.org/10.1016/S0099-1333(96)90056-7
11. Ogbuiyi, S. U., & Okpe, I. J. (2013): Evaluation of library materials usage and services in private universities in Nigeria. Kuwait Chapter of the Arabian Journal of Business and Management Review, 2(8): 33.
12. Palen, L., & Dourish, P. (2003): Unpacking privacy for a networked world. In Proceedings of the SIGCHI conference on Human factors in computing systems (pp. 129–136). https://doi.org/10.1145/642611.642635
13. Perin, C. (1970): Human studies in the Inception Process. In With man in mind; an interdisciplinary prospectus for environmental design. MIT Press.
14. Sommer, R. (1969): Personal Space: The Behavioral Basis of Design. Prentice-Hall.
15. Sommer, R. (2002): Personal space in a digital age. Handbook of Environmental Psychology, pp. 647–660.
16. Sommer, R., & Ross, H. (1958): Social interaction on a geriatrics ward. International Journal of Social Psychiatry, 4(2): 128–133. https://doi.org/10.1177/002076405800400207
17. Stokols, D., & Altman, I. (1987): Handbook of Environmental Psychology. Wiley.


**Appendix**


**Appendix 1:** Consequence of the Taken Photos (Day 1)


**Appendix 2:** Consequence of the Taken Photos (Day 2)