Positive Effect of Non-territorial Office On Privacy: Allen’s Experiment Secret

Nobuyuki INAMIZU\textsuperscript{a)}

Abstract: The office research in environmental psychology that was inspired by the non-territorial office experiments of Allen and his colleagues in 1970, and undertaken since the 1980s, deemed privacy in the open office setting problematic; however, experiments by Allen showed improvements in privacy. Why was privacy not seen as a problem in Allen’s experiments? The non-territorial office in Allen was not limited to being open; in fact, it also incorporated a free-seating arrangement. Further exploration of Allen’s experiments shows that a free-seating arrangement not only enabled employees to move about the office at will but also facilitated the adjustment of their mutual interaction. As a result, it was thought that privacy had actually improved. In other words, extracting an open setting, which is only one aspect of a non-territorial office space, is insufficient, and thus, free-seating arrangement must also be considered. Doing so increases the possibility of significantly remedying privacy problems.

Keywords: non-territorial office, open plan office, free seating, privacy

\textsuperscript{a)} Faculty of Business Sciences, University of Tsukuba, inamizu@gssm.otsuka.tsukuba.ac.jp

A part of this paper was originally published as Inamizu (2008) in Japanese.
Allen’s Non-territorial Office Experiment

From the 1990s into the first decade of the 21st century, the concept of a non-territorial office space had been adopted by many companies, particularly those aiming to reduce facility costs, increase communication, and facilitate knowledge creation (Becker, 1990; Becker & Steele, 1995; Elsbach & Bechky, 2007; Elsbach & Pratt, 2007; Zelinsky, 1998).

Thomas J. Allen, well-known for his research on communication in R&D organizations (Kuwashima, 2012), coined the term “non-territorial office.” His proposed concepts of “gatekeeper” and “NIH syndrome” continue to be widely researched (e.g., Takahashi & Inamizu, 2012).

From June 1970 to April 1971, Allen and Gerstberger (1973) performed an experiment that included changing the office layout of a large company’s production engineering department. The production engineering department had 10–20 employees, whose daily work involved communicating with various peers to find solutions to new problems. Prior to the experiment, the office of the production engineering department had been divided into separate, traditional private rooms occupied by one or two employees. However, during the experiment, office walls were removed and the existing seating arrangement was replaced with a more communal setting, changing the office layout to “non-territorial” one.

Allen and his colleagues conducted surveys two months prior to the change in layout (June 1970) and again eight months after the change (April 1971). A result, although not statistically significant, showed the tendency for improvement in the items for privacy. Due to this finding, Allen reported an improved sense of privacy among employees that was attributed to the change in the office layout.

---

1 This thesis is included in Chapter 9 in Allen (1977), which is one of Allen’s main works.
Positive effect of non-territorial office on privacy

Prior to the experiment, Allen feared that the subjects would claim their own territories and occupy specific areas. However, contrary to Allen’s apprehension, the survey on seating positions showed that the employees frequently moved around throughout the day and almost none of the employees claimed territory by continuing to occupy a specific space.

The ratio of employees that were actually in the office (in-office ratio) was calculated with the median at 62.5% and almost never exceeding 80%.

An increase was also seen in the amount of communication and in the number of communication partners. In addition, the degree of satisfaction regarding the communication also significantly improved. Although none of the results showed a significant improvement in the overall performance of the department, Allen conjectured, although slightly optimistic, that the resultant active communication would increase the department’s performance in the future.

**Definition of Privacy**

The non-territorial office proposed by Allen proved to be ahead of its time in Europe and America, where traditional private offices were the norm. From the end of the 1960s into the early 1970s, only a few companies began to adopt an open plan office. As the open plan office gradually became more prevalent, research led by environmental psychologists and related to open office space markedly increased in the late 1970s and early 1980s. Although there were some affirmative findings within these studies (e.g., Goodrich, 1982; Zahn, 1991), the majority contradicted Allen’s findings and criticized open plan office from a view of privacy.

Before examining various studies, a definition of “privacy” is in order. The most common definition of privacy was proposed by Altman (1975) (Sundstrom & Sundstrom, 1986), who stated that
some people feel a sense of isolation when, in spite of their desire for much interaction, 2 only a minimal amount is experienced. Conversely, those same people may feel a sense of crowding when experiencing much interaction when only a small amount is desired. Hence, these people tend to feel that their privacy is being preserved when experiencing an optimum interaction scenario, which neither causes feelings of isolation nor crowding. Thus, the definition of privacy, in this case, is a circumstance that allows one to concentrate on his/her work, rather than indicating a leak of information. Furthermore, the preservation of privacy engenders satisfaction with one’s personal workplace (workplace satisfaction). Similar to physical environment, workplace satisfaction is considered to influence job satisfaction.3 Thus, privacy is of such great interest in the study of environmental psychology within an office space.

**Critical Studies on Privacy in Open Plan Office**

A series of studies by Sundstrom shows a loss of privacy and decrease in workplace and job satisfaction, resulting from the introduction of an open office setting.

The research objective of Sundstrom, Burt, and Kamp (1980) was to clarify the relationship that privacy, as defined by Altman (1975), has with the office environment and the influence that privacy has on job and workplace satisfaction. They conducted surveys at three organizations—a government agency, a hospital, and a university—located in Tennessee, the United States. The surveyed

---

2 The interaction discussed here is not limited to intentional communication. It also includes interference from others and provocations from one’s surroundings.

3 It is yet to be determined whether the physical environment really has a large influence on job satisfaction. For example, the research of Takahashi (2002, in press) clarifies that the degrees of self-determination and perspective have very strong influences on job satisfaction.
items varied per organization and mainly covered the office environment (e.g., the numbers of partitions and nearby colleagues), perception of one’s workplace (e.g., privacy), and perception of one’s tasks (e.g., complexity of the work). These surveys showed that fewer partitions in the environment results in a loss of privacy. In other words, a strong relationship was seen between the physical office environment and Altman’s (1975) definition of privacy. Furthermore, it was indicated that workplace and job satisfaction decrease in offices with a low level of privacy, regardless of the complexity of work.

The survey in Sundstrom, Herbert, and Brown (1982) was administered on a large company in the United States that was relocating to an open plan office. Prior to the relocation, employees at low job level (staffs and clerical employees) worked in an open workplace, while employees at high job level (managers) worked in completely private offices. Sundstrom, Herbert, and Brown distributed questionnaires to measure satisfaction levels regarding privacy and communication six months before and six weeks after the office relocation. The results of the surveys revealed that employees at higher designations had significantly decreased satisfaction levels with privacy after the relocation from traditional private offices to open plan ones.

In addition to the two studies by Sundstrom (Sundstrom, Burt, & Kamp, 1980; Sundstrom, Herbert, & Brown, 1982), Oldham and Brass (1979), Hedge (1982), and Hatch (1987) obtained results that were critical to the transition to an open office from a privacy perspective.

Subsequent research into office privacy has also elucidated that the level of perceived privacy changes with the conditions such as (1) status and occupational type, (2) office space density (number of people per unit of area), and (3) degree of adaptability to the new office.
Regarding status and occupational type, Sundstrom, Town, Brown, Forman, and Mcgee (1982) study a university in Tennessee, which was also studied in Sundstrom, Burt, & Kamp (1980), and show a particularly drastic decline in management privacy. Zalesny and Farace (1987) and Carlopio and Gardner (1992) also obtained results supporting this finding.

Concerning office density, Oldham and Rotchford (1983) studied administrative personnel and clarified that office density was more closely tied to office privacy than the openness of the office and emphasized that it had more influence on workplace and job satisfaction. Subsequent researches by Oldham were comparative studies of multiple cases. These studies reported that low density level coupled with an open office setting preserves privacy and increases job satisfaction, which can be attributed to the visibility of relationships among colleagues (Oldham, 1988).¹

Brennan, Chugh, and Kline (2002) investigated the degree of adaptability toward the new office not only before and after the office relocation but also six months later. Because much of the existing research into the move to an open office (e.g., Oldham, 1988; Sundstrom, Herbert, & Brown, 1982) conducted surveys just after the transition, it was difficult to determine if the results were due to the office relocation or the transition to an open office. On the other hand, Brennan et al. (2002) employ a sufficient adaptation period and attempt to extract the pure influence that the transition to an open office exerts. The results show lower workplace satisfaction and

¹ There are various opinions regarding the influence of office space density. Oldham (1988) holds that there is a negative correlation between office space density and employee satisfaction; however, Szilagyi and Holland (1980) show a positive correlation. According to them, when the density of office space is very low, the distance between employees becomes immense, thus hindering communication. Relatively recent studies have attempted to reconcile these conflicting viewpoints (e.g., Fried, Slowik, Ben-David, & Tiegs, 2001).
a significant decrease in job performance immediately after the open office transition. Furthermore, this trend did not change even after six months.

**Positive Effect of Free Seating Arrangement**

Why was privacy not seen as a problem in Allen despite privacy problems being identified by much environmental psychology research into open office transition such as those reviewed in the prior segment?

One plausible answer is that the experiments in Allen were performed under unique conditions. Much of the privacy research previously mentioned examined universities and government agencies, which included management. Conversely, Allen studied only engineers from the production engineering department. Allen state that production engineers are required to collaboratively function and communicate. Thus, it is possible that the privacy, defined as “whether or not an employee is able to concentrate on his/her own work,” was not the only problem in this environment.

Regarding the density of office space, many of the production engineers studied in Allen worked outside the office, and their actual time spent in the office was minimal. Therefore, we may infer that the actual number of people in the office was few and the resulting office density was correspondingly low. Hence, if Oldham (1988) is correct, it stands to reason that privacy may have been less of a problem under these conditions.

Furthermore, regarding the adaptation period, Allen conducted surveys eight months after the transition to a non-territorial office. Although Brennan et al. (2002) showed contradicting results, it may be considered that privacy was not viewed as a problem because the engineers were able to adapt over a sufficient period of time.

Certainly these are factors that must be contemplated when
considering the problem of privacy in a non-territorial office. However, one major difference is that the experiments in Allen involved not only the transition to an open office but also the transition to a non-territorial office with a free seating arrangement. A non-territorial office, by definition, must fulfill two requirements: (1) transition to openness (the elimination of walls and partitions) and (2) transition to free seating (the elimination of assigned seating) (Allen, 1977; Allen & Gerstberger, 1973). Existing research, reviewed in this paper, does not consider the influence on privacy that is exerted by free seating, an element of non-territorial offices.5

Returning to Altman’s (1975) definition of privacy, it is a concept determined by the degree of one’s ability to regulate the level of appropriate interaction with others. Insufficient interaction results in a sense of isolation, while excessive interaction results in a sense of crowding. It intuitively stands to reason that in an office with free seating, when an employee feels that he/she cannot concentrate, that person can change their present location. When an employee feels the need to hold a discussion, the opportunity to assemble colleagues for that purpose is readily available. In other words, it is

5 Why were the following points not discussed in the series of environmental psychology research? (1) Improvement in privacy, seen in the experiments of Allen, and (2) Existence of free seating in addition to the open office transition in Allen’s experiments. It is noteworthy that studies such as Brennan et al. (2002), Hatch (1987), Oldham & Brass (1979), Oldham and Rotchford (1983), and Zalesny and Farace (1987), mentioned in this research, refer to Allen and Gerstberger (1973); however, they cite it as only as an example of an open-plan office. Although Sundstrom’s prominent research series deals with privacy in the open-office plan, he does not cite Allen’s experiments. Moreover, the experiments are cited in the most standard textbooks that cover research on environmental psychology in an office space, one of which is Sundstrom and Sundstrom (1986). Thus, it is inconceivable that he was unaware of Allen’s experiments. Furthermore, the reference in Sundstrom and Sundstrom (1986) is included only in the chapters on identity and communication, but not in the privacy chapter. It is surprising that the experiments are not mentioned in the privacy chapter despite a lengthy description on the open-plan office.
much easier to regulate the interaction with others in such a setting as opposed to one with assigned seating. Hence, there is a high likelihood of comfortable levels of interaction.

According to the findings of Allen, each employee, rather than occupying a specific location, actually moved around and experienced active communication with various people. Furthermore, a high level of satisfaction regarding communication was achieved. These results prove how well interaction was regulated when considering communication as a form of interaction.

In conclusion, isolating one single aspect of open office transition and turning it into a problem of privacy in a non-territorial office arrangement is invalid. The aspect of free seating must also be considered. Furthermore, the likelihood is very high that the overall sense of privacy improves with the introduction of free seating.

References

Allen, T. J. (1977). *Managing the flow of technology: Technology transfer and the dissemination of technological information within the R&D organization*. Cambridge, MA: MIT Press.

Allen, T. J., & Gerstberger, P. G. (1973). Field experiment to improve communications in a product engineering department: Nonterritorial office. *Human Factors, 15*(5), 487–498.

Altman, I. (1975). *The environment and social behavior: Privacy, personal space, territory, crowding*. Monterey, CA: Brooks/Cole.

Becker, F. (1990). *The total workplace: Facilities management and the elastic organization*. New York, NY: Van Nostrand Reinhold.

Becker, F., & Steele, F. (1995). *Workplace by design: Mapping the high-performance workscape*. San Francisco, CA: Jossey-Bass.

Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus open office design: A longitudinal field study. *Environment and Behavior, 34*(3), 279–299.

Carlopio, J. R., & Gardner, D. (1992). Direct and interactive effects of the
Inamizu

physical work-environment on attitudes. *Environment and Behavior, 24*(5), 579–601.

Elsbach, K. D., & Bechky, B. A. (2007). It’s more than a desk: Working smarter through leveraged office design. *California Management Review, 49*(2), 80–101.

Elsbach, K. D., & Pratt, M. G. (2007). The physical environment in organizations. *Academy of Management Annals, 1*(1), 181–224.

Fried, Y., Slowik, L. H., Ben-David, H. A., & Tiegs, R. B. (2001). Exploring the relationship between workspace density and employee attitudinal reactions: An integrative model. *Journal of Occupational and Organizational Psychology, 74*, 359–372.

Goodrich, R. (1982). Seven office evaluations: A review. *Environment and Behavior, 14*(3), 353–378.

Hatch, M. J. (1987). Physical barriers, task characteristics, and interaction activity in research and development firms. *Administrative Science Quarterly, 32*(3), 387–399.

Hedge, A. (1982). The open-plan office: A systematic investigation of employee reactions to their work-environment. *Environment and Behavior, 14*(5), 519–542.

Inamizu, N. (2008). Nonteritoriaru ofisu kenkyu no genjou to kadai [Non-territorial office studies and its problems]. *Akamon Management Review, 7*(8), 557–586 (in Japanese).

Kuwashima, K. (2012). Product development research cycle: A historical review 1960s–1980s. *Annals of Business Administrative Science, 11*, 11–23. doi: 10.7880/abas.11.11

Oldham, G. R. (1988). Effects of changes in workspace partitions and spatial density on employee reactions: A quasi-experiment. *Journal of Applied Psychology, 73*(2), 253–258.

Oldham, G. R., & Brass, D. J. (1979). Employee reactions to an open-plan office: Naturally occurring quasi-experiment. *Administrative Science Quarterly, 24*(2), 267–284.

Oldham, G. R., & Rotchford, N. L. (1983). Relationships between office characteristics and employee reactions: A study of the physical-environment. *Administrative Science Quarterly, 28*(4), 542–556.
Sundstrom, E., Burt, R. E., & Kamp, D. (1980). Privacy at work: Architectural correlates of job satisfaction and job performance. *Academy of Management Journal, 23*(1), 101–117.

Sundstrom, E., Herbert, R. K., & Brown, D. W. (1982). Privacy and communication in an open-plan office: A case-study. *Environment and Behavior, 14*(3), 379–392.

Sundstrom, E., & Sundstrom, M. G. (1986). *Work places: The psychology of the physical environment in offices and factories*. Cambridge, UK: Cambridge University Press.

Sundstrom, E., Town, J. P., Brown, D. W., Forman, A., & Mcgee, C. (1982). Physical enclosure, type of job, and privacy in the office. *Environment and Behavior, 14*(5), 543–559.

Szilagyi, A. D., & Holland, W. E. (1980). Changes in social density: Relationships with functional interaction and perceptions of job characteristics, role stress, and work satisfaction. *Journal of Applied Psychology, 65*(1), 28–33.

Takahashi, N. (2002). The degree of self-determination and job satisfaction of white-collar workers in Japanese firms. *Annals of Business Administrative Science, 1*(1), 1–7. doi: 10.7880/abas.1.1

Takahashi, N. (in press). Future parameter explains job satisfaction and turnover candidates in Japanese firms. *Annals of Business Administrative Science.*

Takahashi, N., & Inamizu, N. (2012). Mysteries of NIH syndrome. *Annals of Business Administrative Science, 11*, 1–10. doi: 10.7880/abas.11.1

Zahn, G. L. (1991). Face-to-face communication in an office setting: The effects of position, proximity, and exposure. *Communication Research, 18*(6), 737–754.

Zalesny, M. D., & Farace, R. V. (1987). Traditional versus open offices: A comparison of sociotechnical, social-relations, and symbolic meaning perspectives. *Academy of Management Journal, 30*(2), 240–259.

Zelinsky, M. (1998). *New workplaces for new workstyles*. New York, NY: McGraw-Hill.

*Received May 10, 2012; accepted October 23, 2012*