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“My space”: A moderated mediation model of the effect of architectural and experienced privacy and workspace personalization on emotional exhaustion at work



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ABSTRACT

This research examined a model in which experience of privacy served as a mediator between architectural privacy and emotional exhaustion in the workplace and personalization of one's workspace served as a moderator, mitigating the adverse effect of low levels of experienced privacy at work on emotional exhaustion. The results generally supported our hypotheses by indicating that in its role as a mediator, experience of privacy is initially affected by architectural privacy and its effect on emotional exhaustion is contingent on (moderated by) personalization of the employee's personal work area (i.e., quantity of personal items in one's work area). As expected, higher personalization at work reduced the adverse effect of the experience of low levels of privacy on emotional exhaustion. Theoretical and practical implications are discussed.

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1. Introduction

Emotional exhaustion is the key component of the construct of burnout (Grant & Sonnentag, 2010; Maslach & Jackson, 1981). It is a syndrome under which individuals feel that their emotional resources are depleted, a feeling that manifests itself through physical fatigue and the experience of feeling psychologically and emotionally “drained” (Maslach & Jackson, 1981; Shirom, 1989; Zohar, 1997). There is ample evidence indicating that when employees experience emotional exhaustion they tend to respond negatively by showing declines in such outcomes as job performance, organizational citizenship behaviors, or customer service, as well as increases in absenteeism, turnover, and physical health risks (see e.g., Cropanzano, Rupp, & Byrne, 2003; Firth & Britton, 1989; Grant & Sonnentag, 2010; Halbesleben & Buckley, 2004; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Taris, 2006). There is also ample evidence to support the notion that emotional exhaustion is affected by adverse conditions at work (e.g., high role ambiguity or overload) or the work environment (e.g., strained interpersonal relationships at work) that place constraints on employees' abilities to function successfully at work (Fritz & Sonnentag, 2005; Grant & Sonnentag, 2010; Halbesleben, &

Buckley, 2004; Jahncke, Hygge, Halin, Green, & Dimberg, 2011). However, there is a need for a deeper understanding as to how contemporary conditions in the work environment may affect the experience of emotional exhaustion, and what factors might mitigate or buffer this experience (Grant & Sonnentag, 2010).

In the present study we aim to close the gap on these issues by investigating how the experience of privacy at work (associated with architectural privacy) is related to emotional exhaustion, and how personalization of one's workspace moderates the relationship between these variables. We theorize that low architectural privacy (i.e., not having a traditional office with four walls and a door) contributes to low experience of privacy and that this low experience of privacy has the strongest negative effect on emotional exhaustion when the amount of personalization is low rather than high.

2. Privacy in the workplace

Privacy has been discussed as a process of information control, as the regulation of interactions with others, and as freedom from control by others (cf., Altman, 1975; Kelvin, 1973; and see Newell, 1995; Stone & Stone, 1990 for reviews). Of these approaches, Altman's (1975) more comprehensive definition, focusing on privacy as a dialectic, optimizing process, seems most useful in the organizational context. At the core of Altman's definition of privacy

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are the notions of “selective control of access to the self or to one’s group” (1975: 18) and of privacy as “a central regulatory process by which a person (or group) makes himself more or less accessible and open to others” (1975: 3). Because privacy is a regulatory process, when individuals gain a desired level of control over access by others to their selves, they are able to attain an optimum level of privacy. In many ways, the organizational context requires individuals to make themselves available to others, though certain mechanisms in organizational life can be expected to help employees regulate the amount of access others have to them.

3. Architectural privacy and the experience of privacy

The configuration of physical factors that contribute to individuals’ establishing and maintaining control over their accessibility to others is likely to contribute to the level of privacy experienced by any individual at work (Altman, 1975; Elsbach & Pratt, 2007; Oldham & Fried, 1987). Overall, one can expect that individuals who work in offices that are architecturally secluded are likely to experience the highest levels of privacy (Elsbach & Pratt, 2007; Kelvin, 1973; Oldham & Fried, 1987; Robson, 2008). The highest level of architectural privacy is expected to be associated with working in a traditional office with a door and 4 opaque walls that stretch to the ceiling. This is because this type of architectural privacy helps protect employees against distracting noise and helps to reduce uncontrolled visual exposure to others. This contributes to a reduced experience for the focal employee of being monitored and/or having their private conversations compromised, and helps control interpersonal interferences (interactions) from others (e.g., Bentham, 1995; Botan, 1996; Elsbach & Pratt, 2007; Fried, 1990; Kelvin, 1973; Kupritz, 1998; Lyon, 2006; Maher & von Hippel, 2005; Robson, 2008), contributing to the experience of high privacy. In contrast, in workspaces that are not architecturally secluded (i.e., not a traditional office with four opaque walls and a door), control over visual, acoustic, and interpersonal interferences is limited, contributing to the experience of low privacy (Archea, 1977; Kupritz, 1998; Smith-Jackson & Klein, 2009).

Previous literature (cf., Brookes & Kaplan, 1972; Oldham & Brass, 1979; Riland & Falk, 1972; Sundstrom, Burt, & Kamp, 1980; Sundstrom, Town, Brown, Forman, & McGee, 1982) has provided evidence that architectural factors are positively related to employees’ experience of privacy at work. However, there is a paucity of research as to how the experience of privacy associated with architectural privacy affects employee reactions (e.g., emotional exhaustion), and how these reactions may be mitigated by contextual factors (e.g., workspace personalization). In this study we aim to close the gap in our understanding in this area by testing a moderated mediation model including the variables of architectural privacy, experienced privacy, workspace personalization, and emotional exhaustion. The first part of this model, based on the discussion above, concerns the relationship between architectural privacy and experienced privacy, as follows:

H1. *Architectural privacy (associated with having a traditional office with four opaque walls and a door) will be positively related to experience of privacy.*

4. Experience of privacy and emotional exhaustion

Having described how experience of privacy derives from architectural privacy, and having described privacy as related to control over information flows about and access to the self, we turn now to describing the expected impact of experienced privacy on emotional exhaustion. Considering the role of control broadly, research focusing on the Job Demands–Control model (Karasek,

1979) has indicated that control over various aspects of the job is negatively related to emotional exhaustion. For example, Fernet, Guay, and Senècal (2004) showed that when levels of control at work, or job control, are high, the emotional exhaustion and depersonalization aspects of burnout are lessened. Similarly, Grandey, Fisk, and Steiner (2005), in a study of employees with customer service responsibilities, and Rafferty, Friend, and Landsbergis (2001) showed that control as reflected in job autonomy and skill discretion were negatively related to emotional exhaustion. Together, this line of research indicates that higher levels of control at work can be associated with decreased levels of emotional exhaustion. Extending this line of reasoning, we would argue that the degree to which an employee feels as though they experience privacy at work, and thus the degree to which they feel they are able to exercise control over the information about them that others have access to, and to control the access that others have to them as individuals, their levels of emotional exhaustion should similarly be reduced.

The effect of experienced privacy on emotional exhaustion can additionally be theorized on the basis of Conservation of Resources (COR) theory (Hobfoll, 1989). According to COR theory, inadequate resources to meet work demands are likely to strain individuals’ emotional resources, and in turn, contribute to higher emotional exhaustion (Hobfoll, 1988, 1989). When the experience of privacy (caused by architectural privacy) is low, people will also experience a lack of adequate resources to pursue their work, resulting in adverse reactions (e.g., see review by Elsbach & Pratt, 2007). More specifically, when people experience their work environment to be low on privacy, it enhances the pressure on them to divide their mental attention between pursuing work assignments and handling the distractions, interferences, and feelings of being monitored that are associated with low experience of privacy (Bentham, 1995; Botan, 1996). This need to divide attention between work and non-work related issues is likely to tax people’s mental ability, resulting in increased emotional exhaustion over time (cf., Cohen, 1980; Leroy, 2009; McGrath, 1976; Wright & Cropanzano, 1998).

To illustrate, constant or pervasive monitoring by superiors or co-workers, which seems more likely to occur in low privacy environments, is likely to result in employees feeling that they have to be more on guard or that they cannot act as freely as they might otherwise (e.g., Archea, 1977). Importantly, to connect to the discussion on control above, highly monitored employees are also likely to feel as though they lack control over others’ access to information about themselves and how they are behaving at work. Thus, they may feel that they have to devote more of their energy to maintaining the appearance of diligence, enthusiasm, or professionalism that they expect their supervisor or co-workers are looking for. The lack of architectural privacy that causes employees to feel that they are being observed reduces control and may lead to employees exerting energy, concentration, emotional, and intellectual resources on “looking the part” (Archea, 1977; Elsbach & Pratt, 2007). This greater exertion of mental resources reflects these individuals’ feeling that they are held accountable by their supervisors and peers who can observe them, and who may also choose to report their behaviors to others who are not in a position to observe them. Constant monitoring by the supervisor, or by co-workers, which is easier in situations of low architectural privacy, can thus be seen as one example of the type of stressful event that has been shown to be associated with emotional exhaustion (Lee & Ashforth, 1996; Maslach & Jackson, 1981).

In sum, we argue that emotional exhaustion is likely to increase when the experience of privacy decreases, because employees will experience diminished levels of control over access by others to information about themselves and because employees will need to simultaneously spend time and energy pursuing their work and

managing the distractions and interruptions imposed on them. This, in turn, will often lead to mental overload that results in emotional exhaustion (cf., Cohen, 1980; Lee & Ashforth, 1996).

H2. Experience of privacy is negatively related to emotional exhaustion.

5. The moderating effect of workspace personalization

Building on the negative relationship between control at work and emotional exhaustion, Lee and Brand (2005) have indicated that the concept of perceived control at work can usefully be extended to include perceived control of the physical environment, with improvements in employee levels of emotional exhaustion expected when individuals have control over their physical work environments. Since, as we elaborate upon below, personalization of the workspace is one method of taking control over this physical space, we can expect that engaging in personalization will have an impact on the relationship between perceived privacy and emotional exhaustion. In other words, here we argue that personalization of one's workspace may help to mitigate the adverse effect of low privacy.

Brown, Lawrence, and Robinson (2005) described personalization as one type of territorial behavior. They define territorial behavior as part of a process of communicating, maintaining, defending, and restoring territories toward which employees feel ownership (Brown et al., 2005). Personalization is the behavioral expression of psychological ownership (Pierce, Kostova, & Dirks, 2001) of a physical or social object, where that psychological ownership is rooted in needs for identity and having a place of one's own (Brown et al., 2005). Specifically, personalization has the function of marking a physical object with an individual's identity. In other words, through personalization, employees construct their workspaces as territories, negotiating the boundaries of these territories (Altman, 1975), through the display of items that indicate something about their individual identities.

Drawing on this notion of personalization as a territorial behavior, we argue that, through personalization, creating one's own space in an otherwise public space can help individuals to better accommodate to adverse conditions experienced in the work environment. For example, personalization of a space is one way of indicating ownership of a space that Brown and Baer (2011) have found to have a positive influence on negotiation outcomes. As another example, the presence of plants in a workspace has been shown to have a positive impact on workers' attentional capacity (Raanaas, Evensen, Rich, Sjøstrøm, & Patil, 2011). Creating a place of one's own in an otherwise public workspace environment should further contribute to individuals' positive cognitive and affective states, resulting in enhanced mental resources, enabling better

coping with the potentially debilitating interferences associated with low privacy (e.g., visual exposure to others, uncontrolled interactions, noise, etc.). We note that engaging in territorial behavior should allow individuals to regulate access to their territories as well as themselves (Brown, 2009). Personalization, as a territorial behavior, should help to mitigate the negative impacts of lower levels of experienced privacy which otherwise inhibit individuals' ability to engage in this regulation. Thus, we take the view that personalization through the installation of personal artifacts in the work environment should help employees carve out their own space, inscribe it with personal meaning (Gieryn, 2000; Oldham & Rotchford, 1983), and thus create a kind of sanctuary at work that makes up for lower levels of experienced privacy and reduces emotional exhaustion. In other words, while low privacy is expected to be positively related to emotional exhaustion, personalization is expected to mitigate this relationship.

Based on the above we hypothesize the following:

H3. Workspace personalization interacts with experience of privacy, such that low experience of privacy contributes to higher emotional exhaustion when the level of workspace personalization is low.

Taken as a whole, Hypotheses 1–3 as presented above imply a moderated mediation model. More specifically, these hypotheses describe what Edwards and Lambert (2007) termed a 2nd stage moderated mediation. This type of model predicts that the indirect effect of an independent variable on a dependent variable (here, architectural privacy on emotional exhaustion) is transmitted through a mediator variable (here, experience of privacy) and that the effect that this mediator variable has on the dependent variable is contingent upon the level of a moderator (here, personalization). Building off of the hypotheses above, we hypothesize that the indirect effect of architectural privacy, as transmitted through experience of privacy, on emotional exhaustion will be mitigated by personalization in the employee's workspace. Based on the above we propose the following moderated mediation model:

H4. Experience of privacy mediates the relationship between architectural privacy and emotional exhaustion, and the strength of the mediation is contingent upon the moderating effect of personalization.

The complete model is presented in Fig. 1.

6. Method

6.1. Sample

This research was based upon a survey and measurements of the office characteristics of 87 white-collar employees at a large, urban university in the Midwestern United States. The sample originally

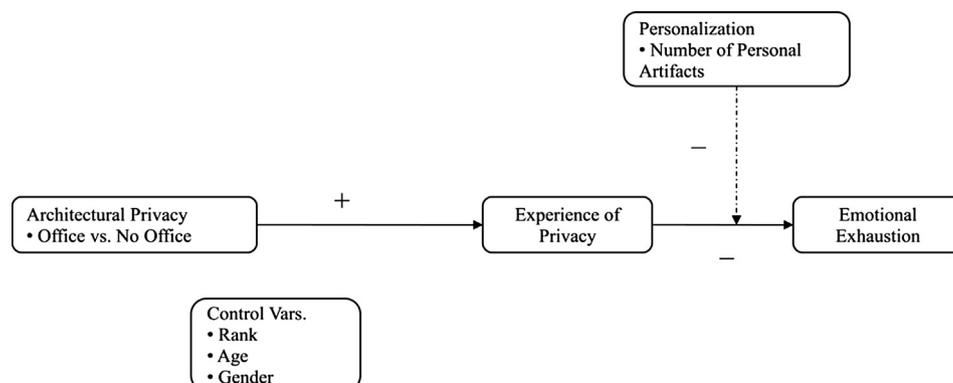


Fig. 1. Theoretical model.

consisted of 102 individuals who volunteered to participate in the study; however, fifteen participants were eliminated because of missing data. The sample consists of clerical and administrative employees from several levels who worked in an administration building of the university. The building, which was originally a hotel, was later converted to an office building with offices of different sizes and shapes. Neither the university nor any of its units had any formal personalization policies in place at the time the data was collected. We note that while the sample was a convenience sample of individuals who agreed to take part in the study, we ended up with a diverse sample of offices and workspaces that represented the office and workspace characteristics in the building well.

Ninety-two percent (92%) of the participants were full-time employees, while the 8% who identified as non-full-time employees reported working an average of 34.7 h per week. Seventy-seven percent (77%) of the participants were female. The participants' average age was 38.6 years old and they had been employed at the university for an average of 8.1 years, having worked in their current positions for an average of 4.25 years. Sixty-four percent (64%) identified themselves as Caucasian, while 35% identified themselves as African-American, and 1% identified themselves as Other.

6.2. Measures

Experience of privacy, emotional exhaustion, and the control variables of age, gender, and organizational tenure were assessed by the participant employees through a survey. Architectural privacy and the personalization measure of number of personal artifacts were determined based on an objective examination of each participant's physical work environment taken by two of the researchers. Two human resource experts working at the university assessed the control variable of rank. Below we provide a description of each measure.

6.2.1. Emotional exhaustion

Emotional exhaustion was measured by eight items from the emotional exhaustion sub-scale of Maslach and Jackson's (1981) Maslach Burnout Inventory (MBI). This scale made use of a 7-point Likert type response pattern anchored by "Disagree Strongly" and "Agree Strongly". Cronbach's α for this scale was .86, which exceeds Nunnally's (1978) recommendation that Cronbach's α for psychometric scales exceed .70.

6.2.2. Experience of privacy

Experience of privacy was measured by combining the items of two scales developed by Oldham (1988) to assess experienced task privacy (items 1–3) and communication privacy (items 4–6). This scale made use of a 7-point Likert type response pattern anchored by "Disagree Strongly" and "Agree Strongly". The data exhibited Cronbach's α 's of .70 (task privacy) and .73 (communication privacy). However, principal components factor analysis of the six items returned only one factor with an eigenvalue greater than 1.0 and all six items loaded onto this one factor with loadings higher than .6. When the scores from these items were combined into one scale measuring overall experience of privacy at work, the scale had an improved Cronbach's α of .77. Therefore, this six-item scale was used in our study to assess experience of privacy.

6.2.3. Architectural privacy

Architectural privacy was assessed through a binary measure indicating whether each employee worked in a traditional office (four opaque walls stretching to the ceiling and a door) or not (anything other than four opaque walls and a door). "No office" was

coded "0" and "Office" was coded "1". Forty-six of the eighty-seven participant employees (53%) had an office with 4 opaque walls and a door, while the rest (41 participants, or 47%) did not have such an office. Those without offices differed on whether they were or were not surrounded by enclosures (walls or partitions), the number of enclosures, and the height of these enclosures. We note that this measure of no office/office was correlated with the relevant architectural components of a traditional office (with number of enclosures, $r = .66, p < .05$; with average height of enclosures, $r = .26, p < .05$; with the number of people working within 15 feet of the employee, $r = -.62, p < .05$) and that the no office/office variable by itself explained more of the variance in experienced privacy ($R^2 = .27, df = 81$) than did a model using these individual architectural components to predict experienced privacy ($R^2 = .24, df = 79$). Thus, the model proposed is both more parsimonious and more effective at predicting experienced privacy than an alternative model based on a set of architectural components.

6.2.4. Workspace personalization

Personalization was assessed by following a process used by Oldham and Rotchford (1983). The researchers measured each employee's level of workspace personalization by counting the number of items with which each subject had decorated his or her workspace. The list of items considered included photographs, posters, pieces of art, statues/figurines, children's artwork, comic strips, mugs/cups, bumper stickers, and other items. The total number of items observed in each person's workspace was used as each individual's personalization score. We expected that a higher number of personal artifacts would help employees to better carve out their own space and inscribe it with personal meaning, resulting in more of a sanctuary at work (cf., Oldham & Rotchford, 1983).

6.2.5. Control variables

Three control variables were used in this study.

First, each employee's rank in the organization was used as a control variable because individuals with high rank typically also have higher status and resources, which are also translated into more private offices and more personalization (e.g., Sundstrom & Sundstrom, 1986; Wells & Thelen, 2002). To derive an index of job rank, two key employees in the university's human resource department ordered the individuals in the sample according to their overall power, relative to the others included in the sample. Power was broadly defined to include legitimate authority as well as personal power and influence. Given the slight difference in the number of categories each person created, the two sets of ratings were standardized. The correlation between these two sets was .77, indicating relatively high inter-rater agreement (cf., Nunnally, 1978), and a paired *T*-test showed no significant differences between them. Therefore, based on the common approach of integrating multiple assessments of a construct, we took the average of the ratings for each participant's job. It was assumed that rank would have a strong relationship with architectural privacy. Therefore, controlling for rank enabled us to examine the hypothesized relationship among the variables in the model and make conclusions with regard to these hypotheses with a higher degree of confidence.

Next, each employee's age was used as a control variable because younger employees have been found to have greater levels of burnout than older workers. As we have noted above, our dependent variable, emotional exhaustion, is a key component of burnout (Maslach, Schaufeli, & Leiter, 2001).

We also used gender as a control variable given Wells' (2000) finding that women personalize their workspaces more than men. Our quantitative measure of personalization suggested that we

Table 1
Means, standard deviations, and zero-order correlations between study variables. Listwise $N = 87$.

| Variable | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------------------|----------|-----------|-------|------|------|------|-------|------|---|
| 1. Rank | .01 | .95 | – | | | | | | |
| 2. Age | 38.57 | 11.16 | .44* | – | | | | | |
| 3. Gender | 1.79 | .44 | –.33* | –.08 | – | | | | |
| 4. No office vs. office | .53 | .50 | .43* | .39* | –.08 | – | | | |
| 5. Experience of privacy | 4.49 | 1.18 | .22* | .17 | –.08 | .51* | (.77) | | |
| 6. No. of personal artifacts | 11.98 | 8.74 | .54* | .27* | –.08 | .29* | .16 | – | |
| 7. Emotional exhaustion | 2.66 | 1.07 | –.15 | –.09 | –.01 | –.13 | –.36* | –.10 | – |

Note: $N = 87$, Cronbach's α listed on the diagonal.
* $p < .05$ (2-tailed).

should control for this expected difference. The territoriality literature also points to gender based differences in territorial behaviors (Smith, 1981) such as personalization.

Survey items used in this study are provided in Appendix A.

7. Results

Means, standard deviations, scale reliabilities (Cronbach's α), and Pearson correlations for the variables of interest in this study are provided in Table 1. Correlation coefficients did not indicate strong multicollinearity, and tests of condition indices and variance inflation factors confirmed that there was no problem with multicollinearity in the data (Belsley, Kuh, & Welsch, 1980).

To examine the expected effect of architectural privacy on experience of privacy, we used hierarchical regression analysis. Rank, age, and gender were entered first as control variables and the measure of architectural privacy was entered in a second level. The results were consistent with the relationship that has been described in the literature (cf., Brookes & Kaplan, 1972; Oldham & Brass, 1979; Riland & Falk, 1972; Sundstrom et al., 1980, 1982). As can be seen in Table 2, the variable indicating whether employees worked in a traditional office or not ($\beta = .53, b = 1.24, p < .05$) was significantly and positively related to experienced privacy as per Hypothesis 1.

To test Hypotheses 2, which predicted that experience of privacy negatively impacts emotional exhaustion, we used a second hierarchical regression. Rank, age, and gender, and the architectural privacy measure of no office/office were entered first as control variables. The experience of privacy variable was then entered in a second level. As can be seen in Table 3, the introduction of the experience of privacy variable indicates a significant negative main effect on emotional exhaustion ($\beta = -.40, b = -.37, \Delta R^2 = .12, p < .01$), supporting Hypotheses 2.¹

To test the hypothesized interaction effects between experience of privacy and workspace personalization on emotional exhaustion, we added to the hierarchical regression described above. The control variables of rank, age, and gender, and the architectural measure of no office/office were entered into the regression

¹ Because the data used in our study are correlational in nature, we felt it was appropriate to test an alternative model in which number of personal artifacts was treated as the dependent variable. Through this analysis we aim to strengthen our claim that personalization has a moderating role in its relationship with privacy and emotional exhaustion. For this analysis we ran a hierarchical regression in which the control variables were entered first, the architectural privacy measure was entered second, and emotional exhaustion and experience of privacy were entered last. None of the variables were significant predictors of personalization at the .05 level of confidence.

Table 2
Hierarchical regression of architectural privacy on experience of privacy.

| Variable | <i>b</i> | <i>SE</i> | β | <i>t</i> | <i>R</i> ² | ΔR^2 | <i>p</i> |
|--|----------|-----------|---------|----------|-----------------------|--------------|----------|
| Step 1: Control variables | | | | | | | |
| Rank | .22 | .16 | .18 | 1.44 | | | |
| Age | .01 | .01 | .09 | .72 | | | |
| Gender | –.02 | .31 | –.01 | –.07 | .06 | .06 | .19 |
| Step 2: Architectural privacy predictors | | | | | | | |
| Rank | .00 | .15 | .00 | .00 | | | |
| Age | –.01 | .01 | –.04 | –.40 | | | |
| Gender | –.10 | .27 | –.04 | –.38 | | | |
| No office vs. office | 1.24* | .25 | .53 | 4.87 | .27 | .21* | .00 |

* $p < .05$.

equation first, followed by the main effects of experience of privacy and of personalization (number of personal artifacts), and finally by the interaction term of experience of privacy \times personalization (number of personal artifacts). As indicated in Table 3, the personalization measure had a significant moderating effect on the relationship between experience of privacy and emotional exhaustion, providing initial support for Hypothesis 3 ($\beta = .29, b = .03, \Delta R^2 = .08, p < .01$).

Using the regression coefficients, means, and standard deviations resulting from the hierarchical regression, we followed the procedure described in Aiken and West (1991) for plotting interaction effects. Fig. 2 provides support for the hypothesized moderating effect of personalization. This figure indicates that, as hypothesized, lower levels of experience of privacy were most strongly related to higher emotional exhaustion when the personalization measure (number of personal artifacts) was low rather than high. Moreover, the figure indicates that experience of privacy is negatively related to emotional exhaustion (the higher the experience of privacy the lower the emotional exhaustion) when personalization is low. It also demonstrates that when personalization is high, the level of emotional exhaustion is not related to experience of privacy. Testing for

Table 3
Hierarchical regression of experience of privacy and number of personal artifacts on emotional exhaustion.

| Variable | <i>b</i> | <i>SE</i> | β | <i>t</i> | <i>R</i> ² | ΔR^2 | <i>p</i> |
|---|----------|-----------|---------|----------|-----------------------|--------------|----------|
| Step 1: Control variables | | | | | | | |
| Rank | –.15 | .15 | –.13 | –.96 | | | |
| Age | –.00 | .01 | –.01 | –.04 | | | |
| Gender | –.14 | .28 | –.06 | –.50 | | | |
| No office vs. office | –.16 | .27 | –.08 | –.62 | .03 | .03 | .64 |
| Step 2: Main effect of experience of privacy | | | | | | | |
| Rank | –.15 | .14 | –.13 | –1.01 | | | |
| Age | –.00 | .01 | –.02 | –.19 | | | |
| Gender | –.18 | .27 | –.07 | –.67 | | | |
| No office vs. office | .29 | .28 | .14 | 1.01 | | | |
| Experience of privacy | –.37* | .11 | –.40 | –3.35 | .15 | .12* | .00 |
| Step 3: Main effect of number of personal artifacts | | | | | | | |
| Rank | –.14 | .17 | –.12 | –.83 | | | |
| Age | –.00 | .01 | –.02 | –.19 | | | |
| Gender | –.18 | .27 | –.07 | –.65 | | | |
| No office vs. office | .29 | .29 | .14 | 1.01 | | | |
| Experience of privacy | –.36* | .11 | –.40 | –3.24 | | | |
| No. of personal artifacts | –.00 | .02 | –.02 | –.12 | .15 | .00 | .91 |
| Step 4: Interaction of privacy and number of personal artifacts | | | | | | | |
| Rank | –.14 | .16 | –.12 | –.88 | | | |
| Age | –.00 | .01 | –.02 | –.17 | | | |
| Gender | –.27 | .26 | –.11 | –1.04 | | | |
| No office vs. office | .23 | .28 | .11 | .83 | | | |
| Experience of privacy | –.37* | .11 | –.41 | –3.52 | | | |
| No. of personal artifacts | .00 | .02 | .02 | .19 | | | |
| Experience of privacy*No. of personal artifacts | .03* | .01 | .29 | 2.87 | .23 | .08* | .01 |

* $p < .05$.

whether each simple slope was significantly different from zero reveals that the relationship between experience of privacy and emotional exhaustion was statistically significant when personalization was low ($b = -.61, t = -4.51, p < .01$) but not high ($b = -.12, t = -.84, p = .41$).

Hypothesis 4, which predicted that experience of privacy mediates the relationship between architectural privacy and emotional exhaustion, and that the strength of the mediation is contingent upon the moderating effect of personalization, was tested using moderated mediation analysis (Edwards & Lambert, 2007; Ferguson & Branscombe, 2010; Preacher, Rucker, & Hayes, 2007). While mediation has long been tested using methods outlined in Baron and Kenny (1986), a number of methodologists have identified weaknesses with this approach (cf., MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Zhao, Lynch, & Chen, 2010). Among these weaknesses are Baron and Kenny's (1986) requirement that a significant, direct relationship be established between the independent variable and the outcome variable prior to testing for mediation. However, as relationships between independent variable and mediator become more complex, these relationships may be more difficult to hypothesize a priori and to establish statistically (Shrout & Bolger, 2002). Methodologists thus note that establishing this direct relationship between independent and dependent variable is no longer essential in establishing mediation (Kenny, Kashy, & Bolger, 1998). Baron and Kenny (1986) also recommended testing of significance of mediation using the Sobel test, which Edwards and Lambert (2007) note is problematic because the Sobel test relies on the assumption that the indirect effect of the independent variable on the dependent variable is normally distributed, an assumption that they show to be tenuous. In addition, Baron and Kenny (1986) failed to provide a statistical model for simultaneously testing mediating and moderating effects. For these reasons, Edwards and Lambert (2007) recommend bootstrapping procedures to develop confidence intervals to test for mediation and provide a method for testing a moderated mediation model, in which mediation is contingent on the levels of a moderator variable.

As per Edwards and Lambert (2007), the constrained non-linear regression function in SPSS Version 20 was used to run bootstrapping procedures to conduct significance testing for indirect (i.e., mediating) effects. Bootstrapping methods were utilized to construct bias-corrected confidence intervals from 1000 random samples with replacement from the full dataset. The resulting confidence intervals were used for significance testing where confidence intervals not including zero were indicative of a significant mediation effect. As Table 4 indicates, the indirect effect of architectural privacy on emotional exhaustion is significant, conveying a statistically significant mediation effect of experience of privacy, when number of personal artifacts is low ($b: -.75; 95\% \text{ C.I.: } -.134, -.36$). Table 4 also confirms the significance of the moderating effect of personalization as described previously. It is important to note that this is consistent with the findings of the slope tests indicated in the discussion of Fig. 2, above. To summarize, this analysis supports our moderated mediation hypothesis, indicating that the mediating role of experience of privacy between architectural privacy and the outcome of emotional exhaustion is contingent on the moderating effect of personalization.

8. Discussion

The purpose of the present study was to develop a more complete understanding of the origin of the experience of privacy at work, the relationship between the experience of privacy and emotional exhaustion and how personalization can compensate for less than ideal experience of privacy. Our findings supported our

hypotheses that experience of privacy is related to a key indicator of architectural privacy (not having an office versus having an office). The effect size associated with the addition of the architectural privacy variable (Cohen's $f^2 = .29$) was moderate, supporting the importance of architectural privacy as a contributor to employees' experience of privacy.

This research also supported the negative relationship between experienced privacy and emotional exhaustion, and the moderating effect of personalization on this relationship. That is, our results indicate that lack of personalization intensified the adverse effect of low levels of experience of privacy on emotional exhaustion. This key finding contributes to an expanding literature on the role and functions of workspace personalization (Brown et al., 2005; Elsbach, 2003, 2004; Scheiberg, 1990; Wells, 2000; Wells & Thelen, 2002; Wells, Thelen, & Ruark, 2007).

Personalization research has, to date, concentrated on explaining personalization's role in marking of territory (Brown et al., 2005) and in expressing individuals' identity to others (Elsbach, 2003; Sundstrom & Sundstrom, 1986). This research is the first we are aware of to explore an instrumental benefit of personalization in decreasing emotional exhaustion through its role in mitigating the negative effects of low privacy workplaces. While the effect size associated with the addition of the personalization interaction (Cohen's $f^2 = .11$) was small, the interaction's significance suggests an important role for workspace personalization in mitigating negative effects associated with low levels of experienced privacy. As our results indicate that less personalization contributes to higher levels of emotional exhaustion in lower privacy contexts, this suggests that personalization serves as a calming influence. Individuals may consciously or subconsciously take comfort from the items with which they surround themselves at work, and these items may help employees to maintain emotional energy in the face of the stresses that come from their work and the distractions and difficulties inherent in working in a low privacy environment (noise, interruptions, being observed by others, etc.). Future research on this issue may help to shed light on the particular circumstances under which the effect of workspace personalization is smaller versus larger. We note that while the university where we collected data did not have a formal policy regarding personalization, supervisors may have implemented their own different policies on display of artifacts (Scheiberg, 1990), which enhanced or decreased the focal employees' latitude to decide for themselves about the number of artifacts in their work environment. Moreover, experienced privacy is negatively related to emotional exhaustion (higher experience of privacy is associated with lower emotional exhaustion), despite the low level of personalization. This supports the notion that the negative moderating effect of low personalization diminishes when privacy conditions are high. That is, high privacy conditions tend to serve as strong protectors against unwelcome interferences and distractions, contributing to a work environment supporting reduced emotional exhaustion.

Moreover, the positive effect of high personalization when privacy conditions are low is further supported by the fact that when personalization is high no relationship is found between experienced privacy and emotional exhaustion. This means that regardless of whether privacy conditions are high or low, the level of emotional exhaustion remains unchanged. It appears that the reason that in low privacy conditions emotional exhaustion is not increased is because of the calming effect of the more highly personalized environment, which enables employees to cope more effectively with the interferences and distractions at work and maintain the necessary energy needed to pursue their work successfully.

As with any piece of research, this paper is not without its limitations. First, the correlational nature of the study design precludes

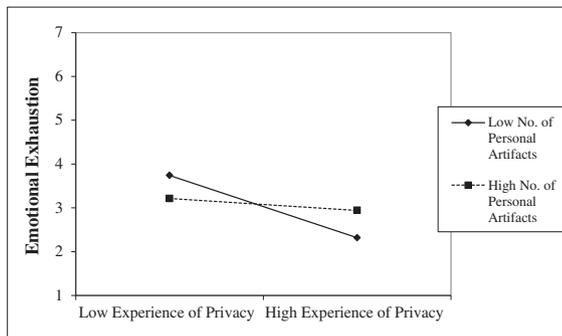


Fig. 2. Interaction effect of experience of privacy and personalization on emotional exhaustion.

drawing conclusions as to the causal relationships between the variables that are based on self-report data (i.e., perceived privacy and emotional exhaustion). However, our model is conceptually viable, and the use of data from multiple sources and the interactions found in this study strengthen our confidence in the results. Second, since our sample comes from only one organization, we must be cautious about the generalizability of our findings.

Concerning future research, this study points to several potential avenues of inquiry. First, longitudinal studies examining the effect of personalization on the relationship between experience of privacy and employee reactions over time are clearly appropriate. For example, we might ask whether the same set of personal artifacts maintains its effectiveness in reducing the negative effects of lack of privacy over time, or whether incremental changes in artifacts might be required. Similarly, is there a threshold beyond which incremental increases of artifacts are no longer effective? Finally, might personalization play a role in the recovery process, through which employees engage in certain behaviors as a way of regaining vigor and energy lost through their work activities (Smolders, de Kort, Tenner, & Kaiser, 2012)? While the common assumption is that privacy would benefit employees, future research might also benefit from exploring also the potential unintended adverse effects of privacy. For example, private offices may contribute to reduced interaction with other employees and the experience of isolation at work. This may, in turn, adversely affect employees' performance at work, particularly in jobs that are interdependent and thus require open interactions and communications among the involved employees (cf., Elsbach & Pratt, 2007; Hackman & Oldham, 1980).

Our findings point to several implications for practice. Specifically, while organizations continue to move toward more multi-purpose, non-territorial workspace designs such as those described by Elsbach (2003), our findings seem to indicate that adopting a stance that allows for some kind of temporary personalization of the workspace would be prudent. This might involve allowing workers to have administrative access to their computers in order to install preferred wallpaper or screensavers

Table 4
Moderated mediation analysis of simple effects on emotional exhaustion.

| Number of artifacts as moderator | Stage | | Effect | |
|----------------------------------|-------|---------|----------|---------------|
| | X → M | M*Y → D | Indirect | 95% C. I. |
| Low no. of personal artifacts | 1.24* | -.61* | -.75* | [-1.34, -.14] |
| High no. of personal artifacts | 1.24* | -.12 | -.14 | [-.64, .14] |

*p < .05.
X = Independent Variable (Architectural Privacy).
M = Mediator (Perceived Privacy).
Y = Moderator (Personalization).
D = Dependent Variable (Emotional Exhaustion).

or in equipping temporary workspaces with digital photo frames that allow workers to upload for display a series of family photographs or perhaps even photographs of diplomas, certificates, or other kinds of rewards that they may prefer to display. Moreover, our results further suggest that organizations would benefit from accommodating to individual differences on what constitutes a sufficient level of personalization. Aiming to satisfy employees' desires for personalizing their work area, particularly when architectural privacy is low, is expected to enhance these employees' ability to cope with distractions and interferences at work and to reduce the adverse outcome of emotional exhaustion. What is intriguing about personalizing one's work area is that it typically requires no, or little, cost on the part of the organization, while our findings suggest its effect on employee reactions at work seem to be significant.

Moreover, our findings indicate that organizations will have to consider how best to design and equip workspaces so that what we might call "itinerant" workers are able to come to their temporary place of work (within their permanent organization of employment) and experience levels of privacy, comfort, and collegiality that meet their needs. This will be especially true for transnational organizations employing workforces from different cultures who must come together and work in finite spaces. Since we can expect that people from different cultures will have different preferred methods for (Ayoko & Härtel, 2003) and levels of personalization (Kaya & Weber, 2003), the question is: how will organizations meet the personalization needs of more diverse workforces, the members of which may, even in the face of objective workspace characteristics, personalize and experience privacy differently depending on home country culture, host country culture, and the interaction of these (Ralston, Gustafson, Cheung, & Terpstra, 1993)? The present research should be considered a first step toward a finer grained understanding of people's reactions to perceived privacy and to the instrumentality of the simple and pervasive act of personalizing one's work area as compensation in the face of a lack of privacy.

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Appendix A. Scales

Experience of privacy (Oldham, 1988)

- 1) I am able to concentrate fully on my job when I am at work.
- 2) When I am in my office, I can work with few distractions or interruptions.
- 3) Interruptions at work often prevent me from giving my full attention to my job (reverse).
- 4) I can talk with my co-workers in confidence while in my office.
- 5) It is difficult to work in my office because I have to worry about disturbing others (reverse).
- 6) I am unable to have a personal or private discussion while at work (reverse).

Emotional exhaustion (Maslach & Jackson, 1981)

- 1) I feel used up at the end of the workday.
- 2) I feel fatigued when I get up in the morning and have to face another day on the job.
- 3) Working all day with people is really a strain for me.

- 4) I feel frustrated by my job.
- 5) I feel like I'm at the end of my rope.
- 6) I feel burned out from my work.
- 7) I feel emotionally drained from my work.
- 8) I feel I'm working too hard on my job.

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