

Hot spots or havens? Aligning workplace design with personal factors to enhance wellbeing

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Abstract Aligning work tasks, workspace design and personal factors such as personality and national culture can lead to the development of workplaces where mood, worker performance, and wellbeing are optimized. In these spaces, workers' preferences and expectations of where they will do a good job are consistent with environments provided. The purpose of the current study was to learn more about links between personality, national culture, experiences with workplace design, and perceptions of which work environments support working well. Extraverts select to do solo work requiring concentration in more communal environments than introverts and also seem more concerned about the comfort of visitors to their workstation than introverts. Extraverts also felt that they would do their current job well in more visually energizing environments than introverts. People in individualistic cultures feel that for them to do their current job well it was more important that they communicate with other people frequently than people from collectivist cultures. Insights drawn from this project can be used to inform the development of workplace environments that enhance mood, professional performance, and wellbeing.

Keywords *Personality, National culture, Workplace design, Wellbeing, Performance*

Introduction

All the world's a stage, and personal factors influence the sorts of sets on which we should live out our lives.

Personality and national culture are personal factors that have been linked conceptually to the experience of design, but little rigorous research has probed specific features of physical workplaces that support various personalities and cultures. Generally, design that recognizes and reflects personal factors enhances user mood and wellbeing (Gifford, 2014) and user wellbeing is an important component of positive design (Desmet and Pohlmeier, 2013).

Mood and workplace design are closely linked (Veitch, 2012). Mood has been tied to how broadly or narrowly a person is thinking (Fredrickson and Branigan, 2005). When people are in an upbeat mood and thinking more broadly, their minds are more likely to work in ways that are consistent with better performance of knowledge work. For example, people thinking more broadly are likely to be better at problem solving (Isen, 2001), innovative and creative thought (Isen, Johnson, Mertz, and Robinson, 1985), getting along with others (Isen, 2001), and even healing, as their immune systems function more effectively (Salovey, Rothman, Detweiler, and Steward, 2000).

Personality has a significant effect on a person's experiences in a particular physical environment (Little, 1987). Theoreticians such as Little have integrated insights drawn from research in

personality, environmental psychology and other social sciences to conclude that aligning personality and design can positively influence mood, performance, and environmental satisfaction at work and elsewhere. The specific forms of the physical environment that support various personality profiles have been sparsely researched, however.

National culture "consists of the unwritten rules of the social game. It is the collective programming of the mind that distinguishes the members of one group or category of people from the others" (Hofstede, Hofstede, and Minkov, 2010, p. 6). Like personality, national culture has been linked conceptually to optimal design (Zhang, Feick, and Price, 2006), but the specific physical forms that support it have not been thoroughly researched.

This study was initiated to better understand how workplace design can support national culture and personality-based user groups. It also gathered information that more generally should inform workplace design.

Personality concepts

Personality influences experiential responses to a given environment (Little, 1987), as described above. McCrae and Costa define it as "dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions" (2003, p. 25).

The Myers-Briggs Type Indicator (MBTI) personality assessment system is “enormously popular [i.e., frequently used in corporate and other settings]. More than 2.5 million people are estimated to take it every year” (Little, 2014, p. 24). Research indicates that contemporary versions of the MBTI are reliable and valid, particularly for the continuous scores that were used for many of the analyses reported here (Gardner and Mantinko, 1996). For example, scores on the MBTI’s extraversion-introversion scale are closely correlated with extraversion-introversion scores obtained using other instruments (Carlson, 1985).

The MBTI categorizes personality using four criteria: preferences for ways of focusing attention (**E**[xtraverted]-**I**[ntroverted]), taking in information (**S**[ensing]-**I**[ntuitive]), making decisions (**T**[hinking]-**F**[eeling]), and dealing with the external world (**J**[udging]-**P**[erceiving]) (Myers, 1998).

There are two preferred ways of focusing attention: extraverted or introverted (abbreviated as E or I). As described by Myers (1998), extraverts “like to focus on the other world of people and activity. They direct their energy and attention outward and receive energy from interacting with people and from taking action” (1998, p. 9). In contrast introverts “like to focus on their own inner world of ideas and experiences. They direct their energy and attention inward and receive energy from reflecting on their thoughts, memories, and feelings” (1998, p. 9).

People who have different preferred ways of taking in information are described, using the MBTI system, as sensing or intuitive, in short, as S or N. As Myers describes, sensing types “like to take in information that is real and tangible. . . [they] are especially attuned to practical realities” (1998, p. 9). Intuitives, in contrast “Like to take in information by seeing the big picture, focusing on the relationships and connections between facts” (Myers, 1998, p. 9). Sensing types are more methodical in their assessments of situations and problems while Intuitives are more likely to trust hunches.

When making decisions, people may have a preference for thinking or feeling. People who prefer thinking “like to look at the logical consequences of a choice or action. . . They are energized by critiquing and analyzing” (Myers, 1998, p. 10). In contrast, people who prefer to use feelings when making decisions “like to consider what is important to them and to others involved. . . Their goal is to create harmony” (Myers, 1998, p. 10).

Dealing with the external world is linked to two preferences, judging and perceiving. People who prefer judging “like to live in a planned, orderly way, seeking to regulate and manage their lives. They want to make decisions, come to closure, and move on. . . they are energized by getting things done” (Myers, 1998, p. 10). In contrast, people who prefer to perceive the external world “like to live in a flexible, spontaneous way, seeking to experience and understand life, rather than control it. . . They are energized by their resourcefulness in adapting to the demands of the

moment” (Myers, 1998, p. 10).

Research published in the peer-reviewed press has not comprehensively evaluated links between the four sets of preferences outlined by the MBTI and specific physical components of supportive workplace environments. A few studies have looked at how environments can support the extraversion-introversion dimension of personality, generally.

Eysenck’s work indicates that extraverts do not process information that they receive through their senses as well as introverts, so a greater amount of environmental stimulation is required for them to achieve the same arousal level as introverts (1967). Extraverts should therefore generally prefer more energizing workplace and other environments than introverts and perform better in those more energizing environments than introverts.

Compared to introverts, extraverts are more likely to choose to spend time in spaces where other people are apt to be, such as hotel lobbies; having other people present makes a space more stimulating (Eddy and Sinnett, 1973). Introverts prefer to stand and sit further from people they’re interacting with than extraverts (Gifford, 1982). This not only leads to larger personal spaces while seated or standing still, but also when walking down hallways.

Extraverts are more likely to choose to work in an open furniture arrangement than introverts, which means that they are less likely to place a piece of furniture, such as a desk or a table, between themselves and a person they are meeting with (McElroy, Morrow, and Ackerman, 1983). Extraverts add more personalizing elements to their workspaces than introverts (Wells and Thelen, 2002).

National culture concepts

Hofstede established a system for categorizing national culture and has updated his framework as new research becomes available (Hofstede, Hofstede, and Minkov, 2010). It currently describes national cultures using six parameters:

- *Power Distance* – the extent to which members of a society accept the fact that power is not distributed equally among them
- *Individualistic-Collectivistic* – the extent to which ties between people are loose or strong
- *Masculine-Feminine* – the extent to which emotional gender roles are distinct or overlap
- *Uncertainty Avoidance* – “The extent to which the members of a culture feel threatened by ambiguous or unknown situations” (p. 191).
- *Long-Term - Short-Term Orientation* – “Long-term orientation stands for the fostering of virtues oriented toward future rewards. . . short-term orientation, stands for the fostering of virtues related to the past and present—in particular, respect for tradition, preservation of ‘face,’ and fulfilling social obligations” (p. 239).
- *Indulgence-Restraint* – the extent to which people feel free to enjoy life

People from individualistic cultures expect and prize

privacy more than people from more collectivistic cultures (Hofstede, Hofstede, and Minkov, 2010).

Purpose of this study

The purpose of the current study was to learn more about links between personality, national culture, experiences with workplace design, and perceptions of which work environments support working well. Insights drawn from this project can be used to inform the development of workplace environments that enhance mood, professional performance, and wellbeing (Little, 1987; Veitch, 2012).

Methodology

Source of variables examined in this study

The MBTI was electronically administered to 2272 people in 68 countries, who wished to learn more about their own personalities, over the summer of 2015 by CPP (formerly known as Consulting Psychologists Press). After answering CPP's demographic and personality questions, people were asked if they were willing to answer questions about workplace design. Those who agreed (n=1815) then responded to a number of workplace design-related questions. Response rates differed, depending on the particular question, but the lowest response rates ranged between 1500 and 1700 respondents/item.

Personality variables of primary focus in this study were four MBTI 'continuous preference' scores for EI, SN, TF, and JP. Categorical variables of the four MBTI preferences were also used as grouping variables for some analyses.

Workplace questions

Several workplace related issues were addressed:

- *Participants were asked how important it was for them to communicate with other people frequently, and, separately, to perform work alone that requires a lot of concentration, to do their current jobs well. Five-point Likert response options ranged from not at all important to extremely important.*
- *A set of forced choice questions asked people to "think about the design of the workspace where you believe you could do your current job well." Respondents indicated if in this space they could see and hear other people or not. They were also asked if in this space they could work alone or with others most of the time.*
- *Additional multiple choice questions asked study participants to describe their current workstation*

and the sort of individual workstation at their employer's office in which they would do their current job well (answered by picking 5 elements from 22 options).

- *Participants were asked, via a multiple choice question, where they would choose to do solo work that requires a lot of concentration and where they would choose to have scheduled face-to-face meetings with others.*

Results

Respondents

Of 2272 total people taking the MBTI, 1815 (80.5%) agreed to answer additional questions related to workplace design. The full sample of participants was culturally diverse, coming from 6 different global regions. See Table 1.

North America (34.6%) and Africa (39.6%) were most represented in this sample. Of the survey respondents, 54.2% (n=983) were female; 42.6% (n=773) were male.

Importance of communicating with others and solo work

Environment

Participants, who were assigned different sorts of workstations, were asked how important it was (for them to do their current job well) for them to communicate with others frequently, and, separately, to do solo work requiring concentration. Table 2 presents that information.

First, the importance of *communicating* frequently with others was lowest for those in a cubicle with walls too high to see over, when sitting, and for those at a table they didn't share with others. It was deemed highest by those in a cubicle with walls they could see over, and for those in a private office (walls to ceiling and a door). The importance of *working alone* on work requiring concentration was lowest for those sitting at a table that they don't share, and highest for those in a cubicle with walls they cannot see over. Finally, it was interesting to find, that for this sample of people, communicating with others was generally considered to be more important than working alone.

Personality

Extraverts were more likely to rate the importance of communication with others highly ($r=-.24$); people who felt that performing work alone was highly important were more likely to be introverts ($r=.14$). (Note, the negative sign in the first correlation is a function of the type of scaling used for the IE scale.) Both of these relationships were significant at $p<.05$. Table 3 shows that extraverts' mean scores were significantly different from introverts for both questions.

Although both groups feel that both activities are important, extraverts were more likely to feel that it is important that they communicate with other people frequently to do their job well than introverts. In contrast, that relationship reverses itself when considering solo work requiring concentration; introverts feel that performing work alone that

Table 1. Survey respondents by global region.

Global Regions	Frequency	Percent
Middle East	204	9.0
Europe	65	2.9
Africa	899	39.6
North America	786	34.6
Asia	203	8.9
India Sri Lanka	115	5.1
Total	2272	100.0

Table 2. Importance of work activity for people in different types of workstations.

Current assigned workstation	Communicate		Work Alone	
	Mean*	N	Mean*	N
A cubicle with walls too high to see over when you are seated	4.5	215	4.0	213
A cubicle with walls that you can see over when you are seated	4.7	280	3.8	281
A seat at a table that you SHARE with others, no dividers (or only a few inches tall) between you and co-workers	4.6	198	3.8	197
A seat at a table that you DON'T share with others where there no dividers of any type between you and co-workers	4.5	105	3.6	104
An office for one person with 4 walls that reach to the ceiling and door that closes	4.7	494	3.8	488
An office with desks for 2 to 4 people with no dividers between the desks, 4 walls, with door	4.6	181	3.9	181
Total	4.6**	1473	3.8**	1464

* One-way anovas were significant at <.05 for both work activities

** Paired samples t-test, significant at <.05

requires concentration is more important than extraverts do. However, both feel that communicating with other people is more important than working alone. There were no differences between these two work activities for any of the other three MBTI categories.

Management level

The importance of communicating with others and doing solo work has generally been found to be related to job level (Brill, Weidemann, and the BOSTI Associates, 2001). Job level comparisons (supervisory vs. non-supervisory respondents) were made to assess the importance of these different work tasks to do one's current job well. Table 4 shows that the importance of communicating with others, and the importance of performing work alone are different for supervisors and non-supervisors.

Supervisors were more likely to feel that communicating with others frequently was more important to doing their job well than was performing work alone. The reverse was true for non-supervisors; they thought that to do their current job well they required more solo work and less communication with others.

Analyses indicated that there was a fairly even split between extraverts (47.3%) and introverts (52.7%) at the entry/non-supervisory level, and again an even split (extraverts=50.1% and introverts=49.9%) at the intermediate management level. However, the situation was different at the executive level; 60.8% of executives were extraverts and 39.2% introverts.

Table 3. Importance of work activity.

To do your job well, how important is it to:	Extraverts (n=863)	Introverts (n=864)
Communicate with other people frequently*	4.8	4.5
Perform work alone that requires a lot of concentration*	3.7	3.9

* p<.05, t-test between independent groups. (Scales: 1=not at all; 5 = very important)

Chosen locations for doing solo work or communicating with others

The previous section provided information about the importance of communicating with others or doing solo focused work. This one will address the choice of location for doing those work activities.

Environment

When asked where they would choose to have face-to-face scheduled meetings, there was general consensus (63.1%), for people in all types of workstations, that they would select 'a room at their employer's office, with floor to floor walls, a ceiling, and a door' and not their assigned workstation. The only exception was for people who already had a private office; they selected their own office 43% of the time and the equivalent type of space (floor to ceiling walls and a door), 45% of the time.

The chosen location for doing solo work requiring concentration showed a similar pattern, although not as strong. The first choice for everyone, except for those in a private office, who selected their own office most (48.8%), was also for 'a room at their employer's office, with floor to floor walls, a ceiling, and a door'. The second most frequent location for doing solo work, for all those in workstations that had little or no enclosure, was for their own workstation. That was reasonable, since they would presumably have their work materials in their own space, regardless of its 'privacy'. The third choice for doing solo work alone was in their home office (24% of the sample).

Table 4. Mean level of importance of work tasks, by job level.

How important is it to:	Non-Supervisory (n=494)	Supervisory (n=864)
Communicate with other frequently*	4.5	4.7
Work alone for 'concentration' tasks*	3.9	3.7

* p<.05, t-test between independent groups. (Scales: 1=not at all; 5 = very important)

Analyses did not reveal any statistically significant differences in the design of current assigned workstations that participants selected as locations for solo work requiring concentration or for scheduled face-to-face meetings and current assigned workstations not selected for the performance of these tasks.

Personality

Personality scores were compared for people who selected different kinds of workstations as their preferred place to do solo work or have scheduled face-to-face meetings. The workstation types they could choose are shown in Table 5.

For those doing work alone that requires concentration, there were differences in places selected to complete these tasks based on extraversion/introversion, sensing/intuition, and judging/perceiving personality preferences. Those choosing to work in a communal space were more extraverted; those choosing to work in a room with floor to ceiling walls, a door, and no others there were more introverted. Those choosing to work in their current assigned space had the strongest sensing score, whereas those choosing a more communal space had the weakest sensing score, one that was almost equivalent to the midpoint of the scale (0). This same pattern was found for judging/perceiving. Those choosing their own workstation had the strongest judging score; those choosing the communal space were exactly at the midpoint (0) of the preference scale.

When asked where they would choose to have scheduled face-to-face meetings with others, the findings were different. Only one of the four types showed a significant difference in this case, and that was for the sensing/intuitive type. All choices fell on the sensing end of the continuum, but the strongest sensing score was for those choosing to have a face to face meeting in a room with floor to ceiling walls, a door, and no others there. The weakest sensing score was for the choice of a communal space for a meeting.

Being in a primary, assigned territory was more likely to be selected by people doing solo work requiring concentration than by people having scheduled face-to-face meetings.

Extraverts were more likely to feel that in a workspace where they could do their current job well they were would be able to see and hear other people while introverts had the reverse opinion ($p < .05$ independent samples t-tests). At the same significance levels, introverts felt that they would do their current job well in a space where they could work alone most of the time, while extraverts feel their performance would be optimized in spaces where they could work with others most of the time.

A related question looked at those who said they could do their job well in a workstation where they could not be seen or heard by their co-worker vs those who selected a workstation where they could see and be heard by their co-workers. An independent samples t-test was done to compare the mean scores on the

Table 5. Personality variables and location choices for different work activities.

WHERE WOULD YOU CHOOSE TO DO SOLO WORK REQUIRING CONCENTRATION?					
Workstation Choices	~N	E-I*	S-N*	T-F	J-P*
In my current individual assigned workstation at my employer	445	-0.016	-0.417	-0.570	-0.575
In a room at my employer's office with floor to ceiling walls/a door/no others there	445	0.103	-0.374	-0.648	-0.495
In a room at my employer's office with floor to ceiling walls/ a door/others doing solo work	143	-0.011	-0.373	-0.476	-0.504
In a communal space at my employer's office, such as a cafeteria	42	-0.249	-0.063	-0.370	0.000
In my home office	380	-0.009	-0.240	-0.540	-0.543
Total	1455	0.016	-0.343	-0.571	-0.518

WHERE WOULD YOU CHOOSE TO HAVE SCHEDULED FACE-TO-FACE MEETINGS W/ OTHERS?					
Workstation Choices	~N	EI	S-N*	T-F	J-P
In my current individual workstation at my employer's office	289	-0.035	-0.309	-0.579	-0.558
In a room at my employer's office with floor to ceiling walls, a door, No others	905	0.061	-0.396	-0.588	-0.541
In a room at my employer's office with floor to ceiling walls, a door, Others doing solo work	70	-0.113	-0.362	-0.492	-0.499
In a communal space at my employer's office, such as a cafeteria	162	-0.116	-0.130	-0.531	-0.368
Total	1426	0.013	-0.346	-0.575	-0.523

* Significant differences between means, 1-way anovas, across workstation types, $p < .05$

Note: Negative scores on the above scales are associated with the first preference letter in the pair.

four MTBI types. Only the extravert/introvert (EI) scale showed a significant difference in personality score for these conditions. Those who selected a workstation where they and co-workers could not be seen and heard had a significantly higher introvert score, than those who chose being seen and heard (they scored on the extravert end of the scale).

As can be seen below, the fifth most frequently chosen workstation feature was for a workstation that had dividers between them and co-workers that impeded sound transmission.

Workstation features where current work could be done well

Most preferred workstation attributes

People were asked what attributes they would select for 'a workstation at your employer's office where you would do your current job well.' There were 22 choices; participants were asked to pick 5 of them. In order of frequency of selection, the top 5 workstation elements selected were:

1. Lots of natural light (n choosing this=1312)
2. Really comfortable chair for me (n=1111)
3. Views of nature through the windows (n=1042)
4. A visually relaxing environment (n=559)
5. Dividers between me and my co-workers, so I can't hear them and they can't hear me (n=422)

Personality

Each of the above highly preferred attributes had a paired choice that was opposite in nature. For example, for the choice of 'views of nature through the windows', there was also a possible choice of 'views of streets or manmade spaces through the window'. To explore the possibility of there being different personality 'types' which would choose one of the pairs, a t-test for independent means was done for the four MTBI preferences. Table 6 shows the preference pairs for which statistically significant personality differences were found.

In terms of extraversion and introversion (EI), the people who preferred a comfortable chair for themselves, a visually relaxing environment, and workstations dividers that kept co-workers from

hearing what they were saying scored more on the introversion end of the scale. The people who chose the opposite of each of those pairs were more on the extraversion end of the scale. These groups, within each pair, were all significantly different from each other.

All people who chose the natural light pair, and the visually relaxing environment scored on the sensing (negative) side of the SN scale. Those who chose less natural light were more strongly classifiable as sensing than those who chose more natural light. However those choosing the visually relaxing environment were more strongly sensing than those choosing the less preferred visually stimulating environment.

There were no differences between the people choosing one of the pairs for either TF (thinking-feeling) or JP (judging-perceiving).

No personality variable differences were found for the preference pair having to do with views of nature or views of streets and manmade features.

National Culture and Design

Whether the national cultures of participant locations was collectivistic or individualistic was determined using information on country scores on this factor provided by Hofstede, Hofstede, and Minkov (2012).

People in individualistic cultures felt that for them to do their current job well it was more important that they communicate with other people frequently than people from collectivist cultures (means of 4.6, and 4.4, respectively on the 5 point importance scale, $p < .05$, t-test for independent means).

No statistically significant difference was found between individualistic and collectivistic countries on how important it was for participants to do work alone that requires a lot of concentration.

Chi-square tests assessed links between the design of workspaces where participants believed they could do their current jobs well and national culture. No statistically significant differences were found

Table 6. Mean scores*: Personality measures by preferred features.

Rank	Preferred features	E-I	S-N
1	Lots of natural light		-0.306
	Not much natural light		-0.513
2	A really comfortable chair for myself	0.059	
	A really comfortable chair for visitor	-0.192	
3	Views of nature through the windows		
	Views of streets or manmade spaces through the windows		
4	Visually relaxing environment with few patterns, etc.	0.065	-0.333
	Visually stimulating environment with many patterns, etc.	-0.235	-0.179
5	Workstation dividers keep them from hearing what I'm saying	0.244	
	Allow them to hear what I'm saying	-0.079	

*Only statistically significant ($p < .05$) mean scores are shown in the table above.

between people from individualistic and collectivistic countries in terms of whether in these spaces other people could be seen or heard or whether the participant could work alone most of the time or not in these workspaces. These tests may not have been significant because only 7% of participants in this sample were from collectivistic countries.

Discussion

Aligning work tasks, workspace design and personal factors such as personality and national culture can lead to the development of workplaces where mood, worker performance, and wellbeing are optimized (Little, 1987; Veitch, 2012). In these spaces, workers' preferences and expectations of where they will do a good job are consistent with environments provided.

People who participated in this study were generally assigned workstations at their employer's office whose form aligned with the tasks to be performed there; i.e., people doing solo work requiring concentration had some shielding from other employees.

Overall, study participants would choose to have scheduled face-to-face meetings and to do solo work requiring concentration in a more private space with floor to ceiling walls and a door rather than in more open work areas. This desire is consistent with research indicating that the ability to work without distraction, either with others or alone, is most likely in this sort of environment (Veitch, 2012). Work environments provided by employers should support these choices by providing adequately shielded facilities, etc. Workplace design-related research has shown that people are generally good judges, in a macro-sense, of where they are likely to work well; for example, in a space with more or less visual and acoustic shielding (Veitch, 2012). They are unlikely to be able to share the specific details (for example, divider heights) that optimize performance, however.

Personality types did differ in perceptions of work locations where they would do their current jobs well. Extraverts select to do solo work requiring concentration in more communal environments than introverts and also seem more concerned about the comfort of visitors to their workstation than introverts. Extraverts also felt that they would do their current job well in more visually energizing environments than introverts. These findings are consistent with findings reported by Little (1987) and Eysenck (1967). Stronger sensing and judging types were more likely than those scoring lower on these dimensions to select more visually and acoustically shielded workplaces. This is consistent with sensor's and judger's interest in carefully assessing information and having an orderly life, respectively (Myers, 1998).

Although both extraverts and introverts feel that both activities studied are important, extraverts were more likely to feel that it is important that they communicate with other people frequently to do their job well than introverts. In contrast, that relationship reverses itself when considering solo work requiring concentration; introverts feel that performing work

alone that requires concentration is more important than extraverts do. However, both feel that communicating with other people is more important than working alone. Job level also was linked to clear differences in need to work alone or with others.

In addition, people in individualistic cultures felt that for them to do their current job well it was more important that they communicate with other people frequently than people from collectivist cultures did. Just as design can support particular personalities, as described above, it can recognize this relative concern about communication.

In practice, the insights drawn from this study can be used to design workspaces for employee groups, as workers doing similar jobs tend to have consistent personality profiles (Holland, 1996). Facility management policies generally preclude, for reasons of efficiency and cost, developing workstations in which inter-employee shielding is customized for individual workers. Therefore, providing a range of workstations for use by employees as needed for particular tasks, is prudent.

Design can and should provide the sorts of sets on which we all live our best lives, regardless of personal factors.

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References

- Brill, M., Weidemann S., the BOSTI Associates. (2001). *Disproving Widespread Myths About Workplace Design*. Jasper, IN: Kimball International.
- Carlson, J. (1985). Recent Assessments of the Myers-Briggs Type Indicator. *Journal of Personality Assessment*, 49, 356-365.
- Desmet, P. Pohlmeier, A. (2013). Positive Design: An introduction to design for subjective well-being. *International Journal of Design*, 7(3), 5-19.
- Eddy, G., Sinnott, R. (1973). Behavior Setting Utilization By Emotionally Disturbed College Students. *Journal of Consulting and Clinic Psychology*, 40(2), 210-216.
- Eysenck, H. (1967). *The Biological Basis of Personality*. Springfield, IL: Thomas.
- Fredrickson, B., Branigan, C. (2005). Positive Emotions Broaden the Scope of Attention and Thought-Action Repertoires. *Cognition and Emotion*, 19(3), 313-332.
- Gardner, W., Mantinko, M. (1996). Using the Myers-Briggs Type Indicator to Study Managers: A literature review and research agenda. *Journal of Management*, 22(1), 45-83.

Gifford, R. (1982). Projected Interpersonal Distance and Orientation Choices: Personality, sex, and social situation. *Social Psychology Quarterly*, 45(3), 145-152.

Gifford, R. (2014). *Environmental Psychology, fifth edition*. Colville, WA: Optimal Books.

Hofstede, G., Hofstede, G., Minkov, M. (2010). *Cultures and Organizations: Software of the mind, third edition*. New York, NY: McGraw Hill.

Holland, J. (1996). Exploring Careers with a Typology. *American Psychologists*, 51(4), 397-406.

Isen, A. (2001). An Influence of Positive Affect on Decision Making in Complex Situations: Theoretical issues with practical implications. *Journal of Consumer Psychology*, 11(2), 75-85.

Isen, A., Johnson M., Mertz, E., Robinson, G. (1985). The Influence of Positive Affect on the Usualness of Word Associations. *Journal of Personality and Social Psychology*, 48(6), 1413-1426

Little, B. (1987). Personality and the Environment. In D. Stokols, I. Altman (Eds.), *Handbook of Environmental Psychology, volume 1 (pp. 205-244)*. New York, NY: John Wiley and Sons.

Little, B. (2014). *Me, Myself, and Us: The science of personality and the art of well-being*. New York, NY: Public Affairs.

McCrae, R., Costa, P. (2003). *Personality in Adulthood: A five factor theory, second edition*. New York, NY: Guilford Press.

McElroy, J., Morrow, P., Ackerman, R. (1983). Personality and Interior Office Design: Exploring the Accuracy of Visitor Attributions. *Journal of Applied Psychology*, 68(3), 541-544.

Myers, I. (1998). *Introduction to Type, sixth edition*. Consulting Psychologists Press: Palo Alto, CA.

Salovey, P., Rothman, A., Detweiler, J., and Steward, W. (2000). Emotional States and Physical Health. *American Psychologist*, 55(1), 110-121.

Veitch, J. (2012). *Work Environments*. In S. Clayton (Ed.) *The Oxford Handbook of Environmental and Conservation Psychology (pp. 248-275)*. New York: Oxford.

Wells, M., Thelen, L. (2002). What Does Your Workspace Say About You? The influence of personality, status, and workspace on personalization. *Environment and Behavior*, 34(3), 300-321.

Zhang, Y., Feick, L., Price, L. (2006). The Impact of Self-Construal on Aesthetic Preference for Angular Versus Rounded Shapes. *Personality and Social Psychology Bulletin*, 32(6), 794-805.