

Personality and Preferences for Interaction

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Summary

An on-line survey was carried out to compare the respondent's personality profiles (on the Big Five Inventory – OCEAN) with their preferences of media and spaces for different types of interaction. Our sample prefers different work settings for different types of interaction, in particular: meeting rooms for sharing ideas and making decisions, office and quiet rooms for resolving personal problems, local cafés and breakout for socialising, and informal meeting spaces for creating ideas and general communications.

The results also confirm that different personality types have different preferences, which in turn will likely affect their performance at work. For example, those rating high on Extroversion prefer to meet face to face, in a variety of work-settings whereas introverts prefer to communicate through email. However, unexpectedly extroverts send out more email than introverts, so clearly like all forms of interaction. Extroverts also spend more time out of the office, more time in meetings and less time computing than introverts. Extroverts value views out of meeting spaces, whereas introverts prefer enclosed/private team spaces.

Those high in Openness, the creative and artistic personality types, favour face to face meetings and prefer meeting in bars, huddle spaces, war rooms or cafés rather than formal meeting room; they also value daylight and views out. In contrast those with a more closed-minded personality prefer formal meeting rooms and do not like informal meeting space. Architects, designers and workplace consultants tend to score higher in Openness, and this may affect their perception of what is considered good workplace design.

Those rating higher in Conscientious prefer breakout space for socialising and generating ideas, whereas those less conscientious prefer the bar/hotel or co-working space/club. Unexpectedly, in our sample, those who work for themselves tend to be less conscientious than those working for large organisations.

Respondents scoring higher in Agreeableness prefer meeting in groups for generating ideas, but they prefer intimate 1:1 meetings for socialising. The disagreeable (low Agreeableness) selected co-location and connectivity to the team as key design features for meeting spaces.

Like introverts, the high in Neuroticism prefer email and a lower proportion prefer group meetings for sharing information. Those more neurotic do not appear to like 1:1 meetings for discussing personal problems. The neurotics spend less time in face to face meetings and more time in solo activity.

This independent research was carried out on behalf of Herman Miller. Although it was not one of the study objectives, our findings nevertheless support some of the core elements of Herman Miller's *Living Office* concept. Using the terminology of the *Living Office*, different personality types favour different *settings* for the various *modes of work* such as *chatting*, *conversing* and *creating* with their colleagues.

The key message is to understand the psychological make-up of the organisation and then provide the *settings* to support them. This process could form a new advanced stage of "activity based working" where the space requirements and work settings provided are based on the mix of personality types as well as roles and work activities. As found in previous studies, the challenge for the designer is to create work environments that facilitate all three Cs: concentration, collaboration and creativity.

1.0 Background and aims of research

In 2012 the Herman Miller Insight Group (UK) commissioned Workplace Unlimited to conduct a literature review to help better understand the *Psychology of Collaboration Space*¹, in particular preferences for team members with different personality types. We found that there was no research directly exploring the impact of psychology on collaboration spaces but we did find related research from which we were able to draw inferences and hypothesise on space requirements.

The key findings from our literature review were:

- *Collaboration is not interaction* – Collaboration involves two or more individuals working towards a common goal and creating something new beyond what that they could have achieved individually.
- *Social interaction facilitates collaboration* – Collaboration is considered a social process and trust is a key factor; building trust within teams by creating a community and through social interaction is important for nurturing collaboration.
- *Heterogeneous teams are most effective* – Management theory highlights that the most productive and successful teams are those comprising of a healthy mix of personality types; however these heterogeneous teams may take longer to bond.
- *Variety of interactions in the workplace* – The literature on good management identifies several legitimate reasons for interaction in the workplace (sharing information, making decisions, generating ideas, resolving personal problems and socialising) and these may be suited to different meeting environments.
- *Personality types have different spatial needs* – The literature on personality theory implies that different personality types prefer to interact through different media and meet in different settings.
- *Introverts and extroverts use social media* – Introverts may suffer from increasing anxiety in face-to-face situations and studies have shown that they prefer to communicate through email and social network sites to overcome this apprehension. However, it was also found that extroverts use social networking sites more than introverts do. This is possibly because extroverts generally seek more interaction regardless of whether it is on-line or face-to-face.

The literature review findings prompted several hypotheses worthy of further investigation. The two key ones we tested are:

1. *Spaces of different design and location better facilitate the range of interactions that occur in the workplace.*
2. *Different personality types prefer different means of interaction and different spaces for interaction when meeting.*

In this second phase of the research, Workplace Unlimited developed a questionnaire to test the above hypotheses. The survey represents original research as it is on a subject that has not previously been examined in any detail.

2.0 Research approach

The core methodology was a new on-line survey, designed jointly by Workplace Unlimited and the Insight Group, and hosted by Survey Monkey. The survey consisted of 20 questions, each with a number of sub-questions totalling just over 100 items.

The first question included 44 sub-questions used to determine the respondents' ratings on the Big Five Inventory (BFI) developed by the University of California Berkeley². The BFI, also known as OCEAN, determines the strength of five personality factors: Openness (O), Conscientiousness (C), Extroversion (E), Agreeableness (A) and Neuroticism (N), as described in Table 1 below.

Low Rating (1)	High Rating (5)
<p>Closed-minded</p> <p>Conventional, down to earth, insensitive, narrow interests and like the familiar</p>	<p>Openness (to experience)</p> <p>Creative, curious, broad interests imaginative and artistically sensitive</p>
<p>Undirected</p> <p>Disorganised, impulsive, easily distracted, carefree, lax and unreliable</p>	<p>Conscientiousness</p> <p>Responsible, hard-working, organised, dependable, self-disciplined and persistent</p>
<p>Introversion</p> <p>Reserved, reflective, quiet, cautious, prefer their own company, logical, thoughtful</p>	<p>Extroversion</p> <p>Sociable, talkative, outgoing, thrill-seeker, risk-taker, optimistic, impulsive</p>
<p>Antagonism</p> <p>Challenging, suspicious, cynical, uncooperative, head-strong and disagreeable</p>	<p>Agreeableness</p> <p>Cooperative, affectionate, good-natured, helpful, forgiving, caring and trusting</p>
<p>Emotional Stability</p> <p>Calm and collected, self-confident, relaxed, composed and secure</p>	<p>Neuroticism</p> <p>Nervous, anxious, insecure, stressed, hypertensive and excitable</p>

Table 1. The Big Five (OCEAN) personality factors

The ratings on the BFI were converted from a 1-5 point rating to a 1-100% POMP (percentage of maximum possible) score for benchmarking and analysis. The respondents were sub-grouped into three categories, on each personality factor, to represent those with low, medium and high scores relative to the other respondents in our sample. Those with a rating below 1 standard deviation of the average were considered low scoring and representing one end of the personality scale; they represent around 16% of our respondents. Those with a rating above 1 standard deviation of the average were considered high scoring and representing the other end of the personality scale; they also represent around 16% of our respondents. The majority (68%) of the respondents fit into the mid-range, with a personality score within ± 1 standard deviation of the mean. This grouping into three broad categories allows us to compare the preferences of those at extreme ends of the five personality factors.

The other questions in the on-line survey related to how people prefer to communicate, where they prefer to meet, their use of social media, their preferences for meeting space design and the time they spend in and out of the office etc. This allowed any relationships between the personality and workspace factors to be examined. In this report only the results that are statistically significant, i.e. not simply due to chance, are reported.

3.0 Survey sample

People were invited to participate in the survey via email (using Workplace Trends and Herman Miller databases) plus through LinkedIn and twitter. Some 937 respondents completed the survey, which is a statistically robust sample. It is difficult to estimate the exact response rate as the actual number of people invited is not known. As a very rough estimate the number of people invited is in the region of 10,000. Whilst 937 is a good sample size, the response rate is in the order of 10% so technically may be prone to some sampling bias.

Regarding the background of our respondents, some 42% (345) work in architectural and workplace consulting practices, with almost three-quarters (71%) working in the wider property and design industry. In terms of company size, approximately half (53%) of the respondents work for larger organisations that have 200 or more employees. Nearly two-thirds (62%) of our respondents are working in the UK, with a further 10% in mainland Europe, 19% based in North America, and the remaining 9% based elsewhere throughout the world.

Our sample included a full range of scores on each of the five personality factors. Figure 1 below illustrates the range of personify types in our sample using Chernoff Faces³. This analysis represents the personality traits by different facial characteristics where: eye size ∝ Openness, ear size ∝ Conscientiousness, hair style ∝ Extroversion, mouth smile/size ∝ Agreeableness and face size ∝ Emotional Stability (inverted Neuroticism). For example, in Figure 1 our respondent R18 is rated high on all the personality traits whereas respondent R27 scores low on each factor.

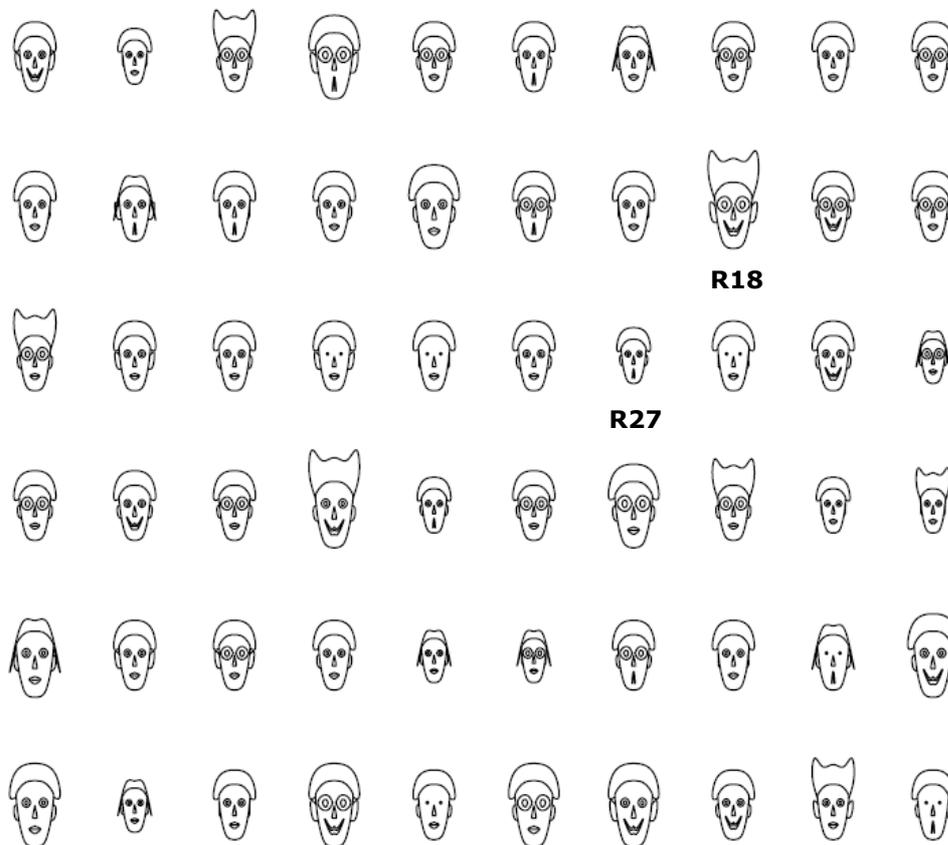


Figure 1. Chernoff Faces representation of personality scores

Figure 2 shows that on average our, predominantly UK, respondents (N=937) appear slightly more Conscientious, Extroverted and Agreeable, but much less Neurotic, than UC Berkeley’s published USA sample (N=132,515). However as mentioned earlier, the analysis presented in this report is based on those scoring more extremely on the personality factors compared to the other respondents in our own database. This is the approach recommended by UC Berkeley and other psychologists. Unexpectedly, we found no statistically significant differences between the personality groups across the countries within our own sample.

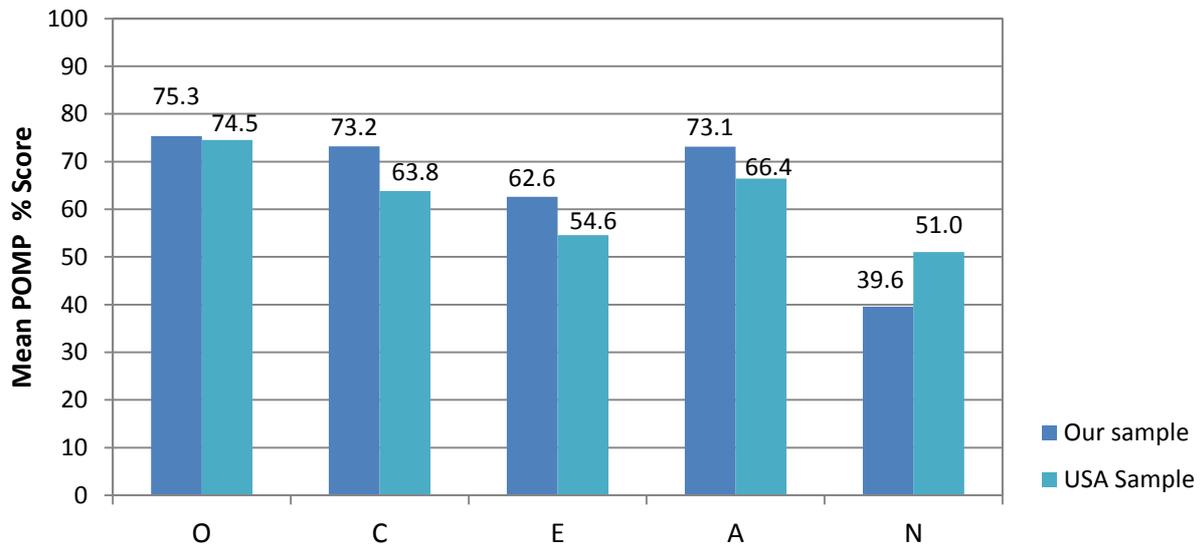


Figure 2. Mean personality ratings (POMP)

4.0 Key results for all our respondents

4.1 Interaction media

The average number of emails *sent* per day is 40(±54), which seems incredibly high. Table 2 shows the percentage of respondents preferring a particular media for different types of interaction (they could chose two media per interaction type). The table shows that around half of our respondents prefer email for sharing information, making decisions and for general communication. What is more interesting is that 16% of our sample prefers not to use email for any form of interaction.

Preferred interaction media	Sharing information	Making decisions	Creating ideas	Personal problems	Socialising - colleagues	General comms	Mean % Preferred
1:1 face to face meeting	57.8	67.9	61.8	94.1	70.1	65.1	69.5
Group meeting or presentation	48.4	28.1	70.8	11.4	53.6	16.5	38.1
Email	49.9	49.2	14.4	13.5	9.4	54.2	31.8
Telephone or teleconf	9.0	20.8	10.3	38.0	12.8	25.3	19.4
Videoconf or skype	4.9	5.7	12.2	6.6	6.4	5.6	6.9
Social media site	4.3	0.1	3.0	0.2	16.3	3.6	4.6
Webinar or webex	8.1	2.2	4.3	0.4	1.7	1.2	3.0
Texting	1.2	1.5	0.7	1.7	4.6	3.7	2.2

All results above found to be statistically significant ($p < 0.01$) using Cochran's Q test; differences between the interaction media (rows) and between interaction types (columns) are all significant.

Table 2. Preferred media for interaction

Furthermore, more than half of the respondents prefer 1:1 face to face meetings for most types of interaction, and nearly all prefer 1:1 meetings for discussing personal issues. A high proportion of our sample prefers group meetings for generating ideas, and around a half prefers group meetings for sharing information and socialising. Only 2% of our sample prefers not to have face to face interaction, but unexpectedly some 15% prefer not to have group meetings for any type of interaction.

Overall, face to face meetings are the most popular means of interaction followed by group meetings and email; these three media are also the most popular for sharing information. Telephone calls and teleconferences are preferred by some of our respondents, particularly for dealing with personal problems. The other medium (like text, video, webinar and social media) are generally not the preferred means of interaction, although some respondents do prefer to use social media for socialising.

These results clearly show preferences for different means of interacting dependent upon the type of interaction taking place. We need to be cognizant of the most appropriate means of communicating and interacting with our colleagues and not rely solely on either just email or just meetings.

4.2 Meeting spaces

When our respondents are in their office, on average half of their time (53% ±18%) is spent in solo activity such as PC and paperwork, However, approximately half of their time is also spent interacting with others either in face to face meetings (33% ±17%) or in virtual meetings (14% ±12%) such as telephone, videoconference or webinar. Note that reporting averages alone can be a little misleading and in our sample there is quite a spread of timings. For example two-thirds of our respondents are in solo activity between 35% and 71% of their time in the office.

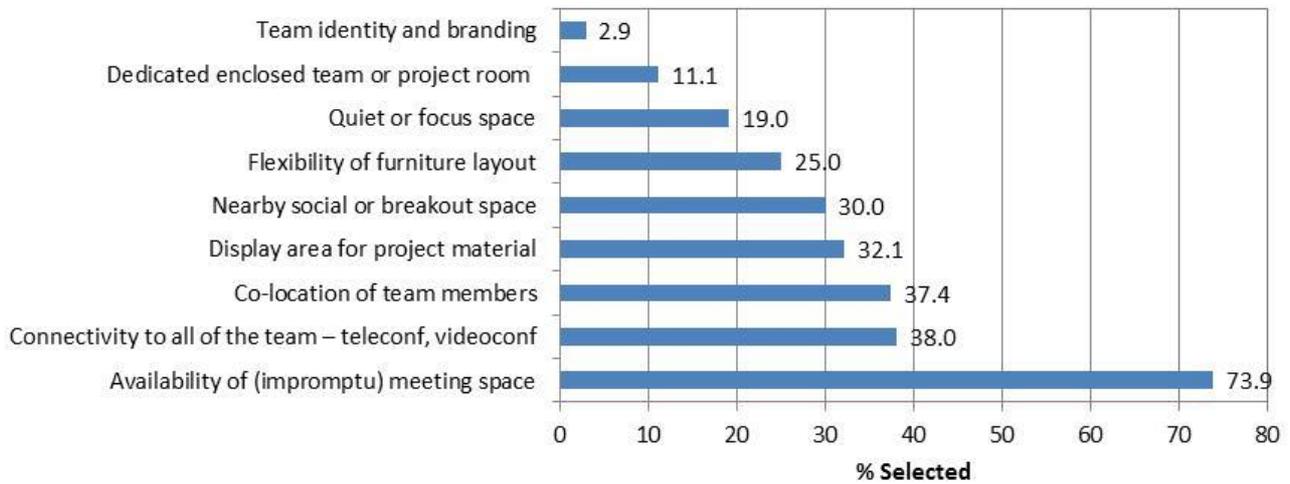
Table 3 shows that around two-thirds of our respondents prefer formal meeting rooms for sharing information and decision making, but some 14% of the sample preferred not to meet in a meeting room for any form of interaction. Approximately two-thirds of our respondents prefer private offices for discussing personal problems, but one-quarter would rather not meet in an office for any form of interaction. Local cafés or the staff restaurant are the preferred setting for socialising by approximately two-thirds of our sample. Conference suites do not appear to be popular settings with our sample, and 88% would prefer not to use a conference suite for interaction. The reason for the dislike of conference suites is not clear, but it may be because of their lack of proximity or availability.

Preferred meeting space	Sharing information	Making decisions	Creating ideas	Personal problems	Socialising - colleagues	General comms	Mean % Preferred
Meeting room	64.3	60.9	25.9	41.1	3.4	35.6	38.5
Informal meeting area	33.4	22.3	45.2	10.0	26.4	54.9	32.0
Private/enclosed office	23.7	48.0	7.4	67.4	1.8	9.2	26.3
Breakout or soft seating are	13.8	8.1	33.3	6.8	39.4	37.2	23.1
Local café or staff restaurant	5.8	3.1	15.5	9.9	63.2	19.8	19.6
Huddle or quiet room	20.6	25.3	9.5	36.1	1.6	6.7	16.6
Brainstorm or war room	15.0	5.5	39.9	2.2	2.0	4.9	11.6
Hotel or bar	1.3	1.2	6.4	3.5	38.2	7.4	9.7
Club or co-working space	4.3	2.7	8.8	1.1	16.9	10.9	7.5
Conference suite	5.3	4.1	3.1	0.9	1.0	2.7	2.9

All results above found to be statistically significant ($p < 0.01$) using Cochran's Q test; differences between the meeting spaces (rows) and between interaction types (columns) are all significant.

Table 3. Preferred meeting spaces for interaction

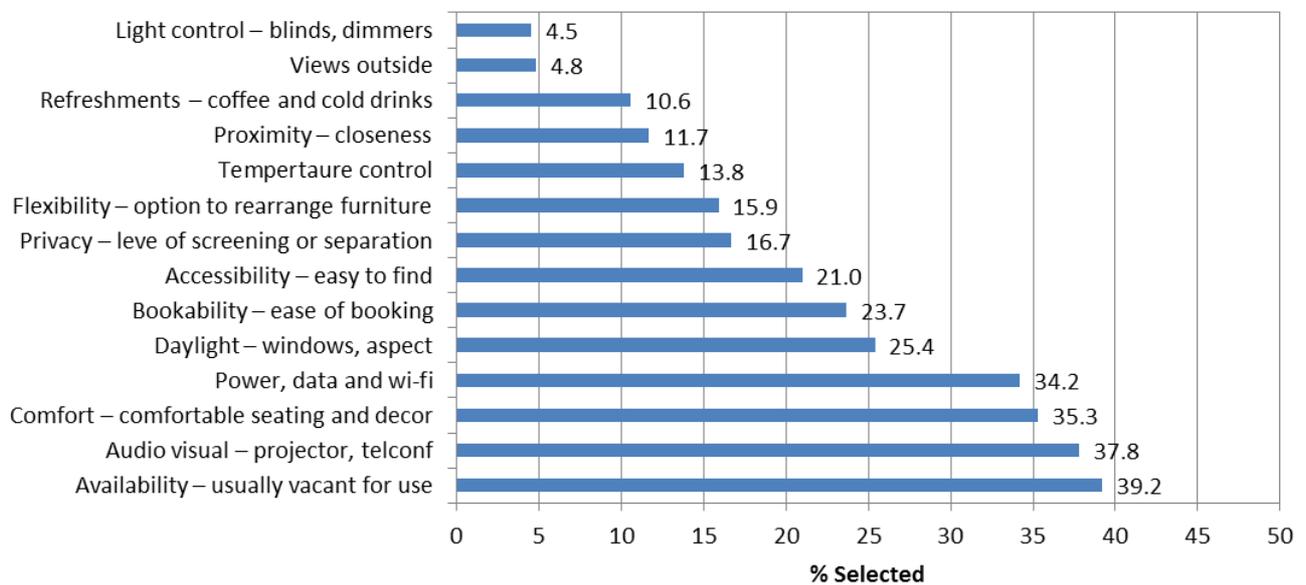
The survey enquired about the design requirements for enhancing collaborating with colleagues. Figure 3 shows that three-quarters of our sample considered availability of impromptu meeting space to be a core design consideration for collaboration. Approximately one-third selected team co-location, a display area for project material and nearby social space as key design considerations. So physical space is clearly important for collaboration, but one-third also selected connectivity to all of the team through teleconference or videoconference as key. Design requirements such as dedicated/enclosed team space and team branding were selected by fewer respondents and so are less important considerations.



All results above found to be statistically significant ($p < 0.01$) using Cochran's Q test.

Figure 3. Design requirements for collaboration

The respondents were asked to consider which design properties of physical meeting space are the most important. The design properties selected by one-third of our sample are availability, audio-visual (AV) equipment, comfort and power/data, see Figure 4. Daylight and ease of booking are considered important by one-quarter of our respondents.



All results above found to be statistically significant ($p < 0.01$) using Cochran's Q test.

Figure 4. Important properties of meeting spaces

4.3 Work activities

The mean percentage of time that our respondents spend working in their main office or other company office is 60% ($\pm 32\%$). In contrast, the mean percentage of time working away from the office is 40% ($\pm 32\%$), which mostly consists of working at home of ($20\% \pm 24\%$). These average figures are similar to those presented in utilisation studies reported by workplace consultants. However, it should be noted that the range, the \pm standard deviations shown in parenthesis, tend to be ignored in such reports. For example, in our survey two-thirds of our respondents believe they are in the office for 28% to 92% of their work time.

As mentioned in Section 4.2, on average half (47%) of the respondents' time is spent in interaction and the other half (53%) in solo activity. If 53% of the time is spent at the desk when in the office but on average the respondents are only in the office for 60% of work week, then on average only one-third of the working week (32%) is actually spent at the desk. This finding supports the economics behind the agile working agenda, which questions whether desks should be provided at a ratio of 1 desk per person, when many desks remain unoccupied much of the time. We actually found that the average time in the office at the desk to be $32\% \pm 22\%$, so the majority of our respondents are at their desk 10% to 53% of the time.

We asked our respondents to select the two spaces they prefer for carrying out various work activities which reflect their performance at work. One of the most interesting results highlighted in Table 4 is that nearly three-quarters of our sample prefer to take a break from work by going outside in a garden or park, and a half selected a local café or bar. We also found that half of our respondents prefer their home office for quiet and concentrated work, which is slightly more than those selecting their usual desk or a private office. Where people consider themselves most productive is split between their desk and the home-office. So clearly the home office is considered a productive place, particularly for concentrated work, but the desk (and office) is still favoured by some.

Preferred spaces for core work activities										
	Your desk in office	Meeting room	Private/ enclosed office	Informal meeting	Café or bar	Home office	Elsewhere at home	Outside - garden	Sports facility	Co-working club
Where are you most creative and have your best ideas?	26.0	9.2	11.0	29.9	13.2	24.1	31.0	25.6	5.6	5.3
Where do you like to do quiet, focused and concentrated work?	39.7	12.7	38.6	5.8	4.9	51.0	15.8	1.6	0.1	2.7
Where do you prefer to meet colleagues?	11.5	37.1	6.6	67.1	33.7	1.2	0.9	4.7	0.9	12.4
Where do you like to go to take a short break from work?	2.2	0.9	0.9	18.0	50.7	0.5	7.0	70.6	15.1	3.5
Where are you usually most productive?	50.0	10.6	22.7	12.5	4.9	44.7	15.4	1.3	0.1	3.9

All results above found to be statistically significant ($p < 0.01$) using Cochran's Q test; differences between the work activities (rows) and between the work spaces (columns) are all significant.

Table 4. Preferred spaces for work activities and performance

Two-thirds of our respondents prefer to meet colleagues in an informal meeting area or breakout space, but one-third also prefers cafés and meeting rooms. The results for creativity are less clear with around one-quarter of our sample selecting their desk, informal meeting areas, the home office and elsewhere at home and outside. What is clear is that our respondents do not believe that creativity is supported by meeting rooms or private offices.

We also asked our respondents about their social media habits. The average number of social media sites subscribed to by our sample is 4 with a maximum of 13. The social media sites subscribed to are predominantly LinkedIn (73% of respondents), Facebook (59%) and Skype (48%). The average number of visits per week to non-work related social media sites such as Facebook is significantly higher (11 visits on average) than visits to business orientated sites such as LinkedIn (8 visits).

The majority (77.9%) of respondents believe they are most productive in the early morning (before 09:00) or in the morning (09:00-12:30). The majority say they tend to use social media either during early morning (31.6%) before work or in the evening after work (46.1%).

5.0 Results for five personality types

5.1 Overview

All the variables in Section 4.0 were tested against the Big Five personality factors. Appendix A includes tables showing the statistically significant results, which are summarised below.

5.2 Openness

The respondents who score high in Openness (creative and artistic types) prefer to hold 1:1 face to face meetings for sharing ideas. They also prefer to meet colleagues in the bar, huddle, war room or café but prefer not to meet in formal meeting rooms. When asked where they are their most creative, those more open-minded selected the outside and garden. In contrast, those more closed-minded prefer formal meeting rooms for creativity and generating ideas and prefer not to use informal meeting space. So it appears those more open to new ideas prefer non-traditional spaces for meeting, creativity and generating ideas. The more open respondents also value daylight and views out, which may help stimulate their creativity.

Unexpectedly a higher percentage of those more open-minded preferred co-working spaces and clubs for quiet work and taking a break, and they also felt more productive in such spaces. This result may possibly be because the more creative respondents are more likely to have access to and work in co-working spaces and clubs.

Those rating high in Openness spend less of their working week (49% of time) in their main office or their other company offices than their more closed-minded colleagues (66%). Their time away from the office is mostly spent at home rather than client sites, perhaps because of the creative process involved in their work activity and the home better supports solo creative activity. We found that on average the Open respondents spend slightly more time in quiet work i.e. thinking (10%) than their closed-minded colleagues (7%) and they spend slightly less time carrying out analysis on computers (12%) than the closed-minded respondents (15%).

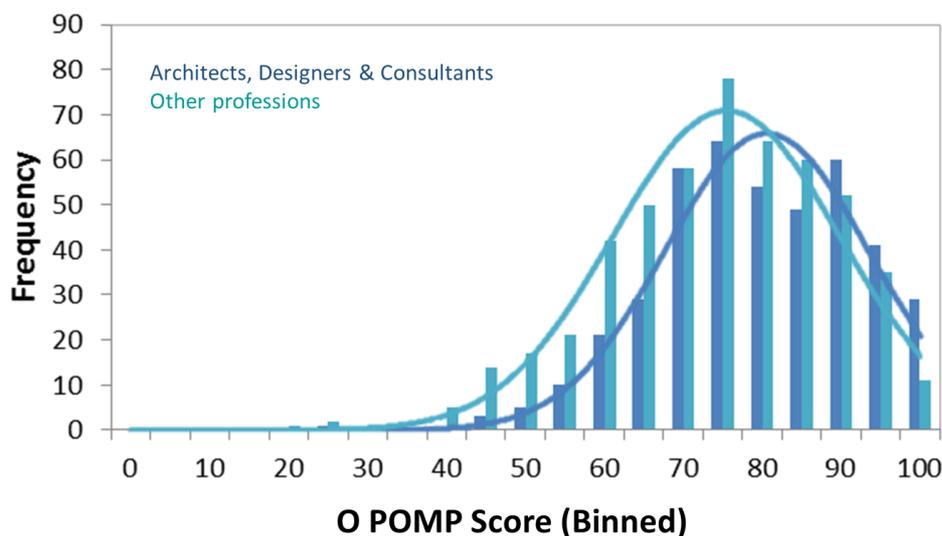


Figure 5. Histogram of Openness for “designers” and other professions

We found that practicing architects, interior designers and workplace consultants have a statistically significant higher score in Openness (78%±13%) compared to other professions and industries (73%±14%), see Figure 5. This tendency to Openness may impact how workplace professionals design office spaces and influence what they perceive is required by others.

Openness also correlates with the number of visits to LinkedIn and the number of social media sites subscribed to. So it appears that social media is more appealing to those open to new ideas.

5.3 Conscientiousness

There were fewer statistically significant differences between those scoring high on Conscientiousness and the rest of the sample. However, a higher proportion of those more conscientious prefer the breakout space for socialising and generating ideas, whereas those low in Conscientiousness prefer the bar/hotel, co-working space or club for socialising, meeting colleagues and generating ideas. The conscientious may take a break from work in a local café but do not consider it a workspace. So it appears that Conscientiousness affects what we consider to be an acceptable place to carry out work activities.

The conscientious visit social media sites less frequent and subscribe to fewer social media platforms than the less conscientious. This maybe because they consider social media a non-work activity that should be conducted outside of normal working hours.

Unexpectedly, we found that the respondents who work for themselves are generally less conscientious than those working for larger organisations. This may be related to more freedom over work hours and deadlines than caring less *per se*. Those working for themselves did not differ to the other groups of workers on any other personality traits.

5.4 Extroversion

The Extroversion sale is one of the most widely discussed personality traits in psychology and, thanks to Susan Cain⁴ and others, the differences between introverts and extroverts is now receiving some attention in business management. Our data set flagged up quite a few statistically significant differences between introverts and extroverts, and supported our hypotheses regarding these personality types.

A higher proportion of or extroverts prefer quiet/huddle spaces and the hotel/bar for sharing information. They also prefer meeting rooms for generating ideas and feel most productive in meeting rooms, possibly because they enjoy presenting. We also found that extroverts feel more creative in informal meeting and breakout spaces and value views out of the office.

In contrast, a higher proportion of introverts prefer email for sharing information and for general communications. They also prefer private offices for general communications and formal meeting rooms for generating ideas. We also found that introverts feel most productive at their desk in the main office and would like to use it for carrying out quiet and focussed work, although in reality they may be subject to interruptions. Unexpectedly, a higher proportion of introverts also consider the home office as the place they are most creative. Regarding the design of meeting spaces, introverts prefer enclosed team spaces. A higher proportion also preferred informal meeting spaces for discussing personal problems.

On average those scoring high on Extroversion spend less time in the office (53% of working week) and more time working elsewhere than introverts (66%). Furthermore, when in the office extroverts spend significantly less time carrying out solo activity (47%) than introverts (61%) spending more of their time interacting face to face or virtually. The additional solo activity of introverts appears to be conducting analysis on their computer as they spend significantly more time in this activity (20%) than the extroverts (11%). Tasks involving detailed and repetitive tasks are more appealing to the introvert than the extrovert, which influences their job choice and in turn core work activities. Workplaces should facilitate solo work activities, which may require concentration, as well as interaction.

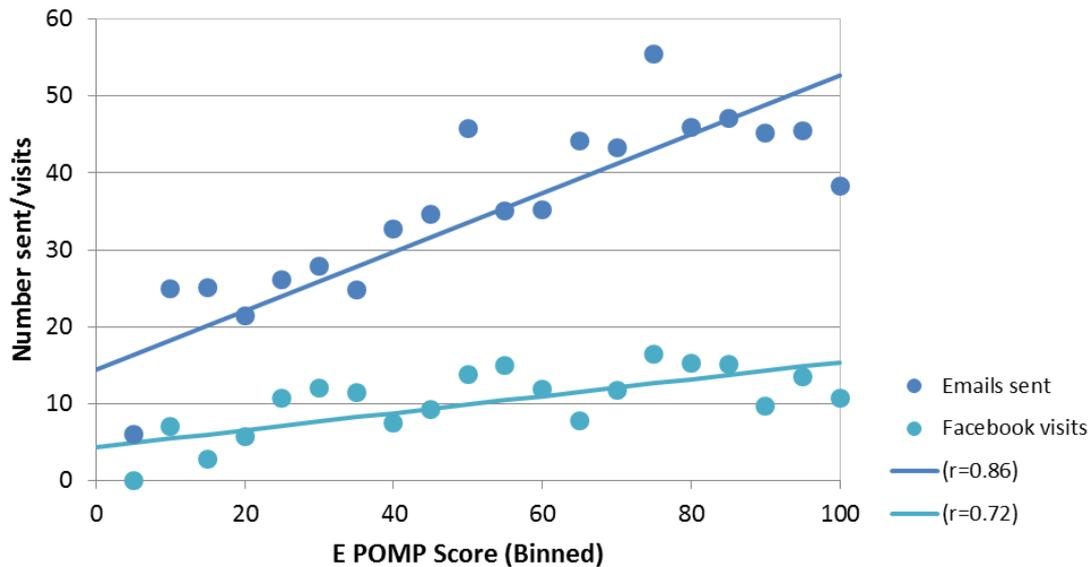


Figure 6. Emails (sent per day) and Facebook (visits per week) per Extroversion score

The score on the Extroversion scale correlated with the number of emails, Facebook visits, LinkedIn visits, tweets made and social media sites subscribed to, see Figure 6. Unexpectedly, extroverts send more emails than introverts so it seems they are more active in all forms of communication. It is plausible that introverts send fewer but more detailed and considered emails than extroverts.

Susan Cain⁴ recently commented that modern offices appear to be designed for the “extrovert ideal” with little regards for the needs of the introvert. One of our hypotheses was that architects tend to be extroverted as a consequence design more for extroverts. However, the architects and designers in our sample are a mix of extroverts and introverts, but as mentioned earlier they score higher on Openness than other professions.

5.5 Agreeableness

Like Conscientiousness, we found little differences in interaction and meeting preferences depending on ratings on the Agreeableness trait. A higher percentage of those more agreeable prefer meeting in groups for generating ideas but appear to prefer 1:1 (tête-à-tête style) meetings for socialising.

Regarding meeting spaces, a higher proportion of those scoring high in Agreeableness prefer conference suites or clubs for sharing information, and the breakout space or local café for generating ideas. The more agreeable also selected informal meeting areas as places they have their best ideas in, prefer to meet colleagues and feel most productive.

Provision of informal meeting areas and breakout space therefore appear important for the more agreeable (trusting, cooperative, helpful) members of the workforce, particularly for sharing ideas on a 1:1 basis.

5.6 Neuroticism

There were few significantly different results between our Neurotic and emotionally stable respondents. However, an important finding is that when sharing information, a higher proportion of those scoring high in Neuroticism prefer email and a lower proportion prefer group meetings. This result is similar to that found for introversion/extroversion, so introverted neurotics in particular may struggle with sharing information at group meetings, even though they will possibly be the workers with the most detail to share.

The more neurotic also appear to prefer documented information and avoid sharing information that is not recorded in meetings. They also do not appear to like 1:1 meetings for personal problems or for general communications; this may be perceived as confrontational which they prefer to avoid.

On average the more neurotic spend statistically significant less time (31% of working week) in face to face meetings than the emotionally stable (36%). Conversely, the more neurotic spend statistically significant more time (55%) in solo activity than the emotionally stable (44%). These results support the preference for email over meetings.

In terms of designing for interaction, a higher percentage of the neurotic selected quiet rooms and privacy, plus power and data as their key requirements.

6.0 Practical implications

The intention of our research was to test two key hypotheses:

1. *Spaces of different design and location better facilitate the range of interactions that occur in the workplace.*
2. *Different personality types prefer different means of interaction and different spaces for interaction when meeting.*

Both hypotheses were confirmed through the research. Our sample prefer different work settings for different types of interaction, in particular: meeting rooms for sharing ideas and making decisions, office and quiet rooms for resolving personal problems, local cafés and breakout for socialising, and informal meeting spaces for creating ideas and general communications.

Our research also showed that people of different personality types prefer to interact through different media. Written email communication is preferred by the more introverted and neurotic staff, and they may feel stressed at the thought of presenting their material to large groups, which will impact on their productivity. Unexpectedly, we found that whilst extroverts spend more time in meetings than introverts and prefer to meet in spaces other than traditional meeting rooms, they are also heavy users of email (and social media) as a means of communication; they basically like to communicate and share by whatever means available.

Different personality types also prefer to work in different work-settings, within and outside the office, depending on the task they are performing. We need to provide spaces that support all tasks, for example provide quieter areas for carrying out work requiring focus and concentration as well as a range of areas for different types of interaction such as 1:1 personal meetings or creative team meetings. Furthermore, we need to provide work spaces that accommodate all personality types and suit the introverts, conscientious and more neurotic, rather than simply build stimulating, open plan, buzzy environments that best suit extroverts. We need to be cognizant that whilst we can facilitate behaviour change through design, some work-settings will never be favoured by some of our workforce.



Figure 8. *Modes of work within the Living Office concept*

Whilst this research was carried out independently by Workplace Unlimited, our findings nevertheless support some of the core elements of Herman Miller's *Living Office*⁵ concept. Using the terminology of the *Living Office*, different personality types favour different *settings* for the various *modes of work* such as *chatting*, *conversing* and *huddling* with their colleagues or *contemplating* and *creating* alone, see Figures 7 and 8.



Figure 8. Settings within the *Living Office* concept

For example, introverts and those more open (creative/artistic) require a *haven* to *contemplate* and *create*, whether working through a complex problem or developing ideas. Some personality types, such as extroverts and those more open, value *chat* whereas other types like the conscientious and introverts may consider *chat* a non-work activity. It is therefore important that the settings provided to facilitate *chat*, such as a *landing*, are located away from (but nearby) the main workspace or *hive*. Some personality types will prefer to *co-create* or *huddle* in a more formal *meeting space* or *forum* whereas others may prefer it happened around them in a *clubhouse* or *workshop* environment.

The key message is to understand the psychological make-up of the organisation and then provide the *settings* to support them. This process could form a new advanced stage of "activity based working" where the space requirements and work settings provided are based on the mix of personality types as well as roles and work activities.

Our research has also demonstrated that architects, designers and workplace/business consultants tend to be more open (creative, artistic) than other professions. This may affect their perception of what they believe makes a good/ideal workplace. In the absence of good briefing the workplace professionals may default to their own preferences for stimulating, open-plan, buzzy, funky environments. Furthermore, different job functions attract different personality types, for example the processors in our sample are highly introverted. This is akin to a "double whammy" effect as particular roles require particular work settings and so does the personality of the people carrying out that role.

Our research also verifies previous findings which show that the average time spent in the office and spent at the desk is quite low. This supports the needs for alternative settings to the desk, to support the other modes of work. Moving away from one desk per person and introducing desk sharing will reduce the space needed for desks and allow for non-desk spaces (other *settings*) to be introduced without increasing the space requirement. However, desk sharing may not be favoured by particular personality types and cause them stress leading to reduced productivity – but that is a whole other research topic.

We also found that the home office is preferred as a place to concentrate and conduct quiet work, but it is also preferred to *create*. The more creative and artistic respondents spend more of their time at home than others, possibly to allow them to focus on and formulate their creative ideas. The home clearly supports work activity and should be considered as a viable work *setting*. However, we also found that some of our respondents, particularly the introverts, would prefer to carry out focussed and quiet work at their office desk. Again we should respect that not all the workforce require stimulating noisy environments, and many may not have the opportunity to regularly work from home when they require peace and quiet.

As found in previous studies, the challenge for the designer is to create work environments that facilitate all three Cs: concentration, collaboration and creativity. A balanced workplace is required that offers a variety of work-settings to support a range of work activities and personality types.

8.0 References

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This paper should be referenced as:

Oseland N A (2013) *Personality and Preferences for Interaction*, Occasional Paper WPU-OP-03. Berkhamsted: Workplace Unlimited.

Appendix A – Interaction and personality

Preferred interaction media	Sharing information	Making decisions	Generating ideas	Personal problems	Socialising - colleagues	General comms
Email	-E,N					-E
Telephone or teleconf						
Videoconference or skype						E*
1:1 face to face meeting			-N, O	-N	A	-N
Group meeting or presentation	-N		A			
Webinar or webex	-N*					
Social media site eg LinkedIn						
Texting						

Only statistically significant results shown ($p < 0.05$); * caution as very small sample, -ve sign indicates result for opposite end of personality factor, e.g. -E = introvert, -N = emotionally stable

Table A1. Preferred interaction media

Preferred meeting space	Sharing information	Making decisions	Generating ideas	Personal problems	Socialising - colleagues	General comms
Meeting room		-O	-E,-O			-O
Conference suite	A	N*				
Hotel or bar			E, O		-C	
Brainstorm or war room			O			
Huddle or quiet room	E, O					
Private/enclosed office						-E
Informal meeting area			-C,-O	-E		
Breakout or soft seating are			E,A,-N		C	
Local café or staff restaurant			A, O		E	
Club or co-working space	-C*	-N*,O*	-C	O*	A	

Only statistically significant results shown ($p < 0.05$); * caution as very small sample, -ve sign indicates result for opposite end of personality factor, e.g. -E = introvert, -N = emotionally stable

Table A2. Preferred meeting space

Preferred spaces for core work activities	Your desk in the office	Meeting room	Private/ enclosed office	Informal area or breakout	Local café or bar	Home office	Elsewhere at home	Outside / garden	Sports facility	Co-working club
Where are you most creative and have your best ideas?		-O		E, A		-E, -A		O		
Where do you like to do quiet, focused and concentrated work?	-E									O
Where do you prefer to meet colleagues?				A	-C, O					
Where do you like to go to take a short break from work?					C				-C	O
Where are you usually most productive?	-E	E, C		A						O

Only statistically significant results shown ($p < 0.05$); * caution as very small sample, -ve sign indicates result for opposite end of personality factor, e.g. -E = introvert, -N = emotionally stable

Table A3. Preferred meeting space

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