Memory, Social Interaction, and Communicability in Extraordinary Experiences of Architecture

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ABSTRACT: Using nearly 2,900 entries from a previously documented survey on "Extraordinary Architectural Experiences" (or EAEs), this paper reports in how memory, socialization, and communication affect and, in turn, are affected by the highest aesthetic reception of architecture. More specifically, nine ('comparative mnemonic impact', 'fresh recollection', 'intensity', 'profoundity', 'vividness', 'transformation', 'body reactions', and 'weeping'), six ('social company', 'sharing', 'non-talking', 'introspection/silence', 'comparative mnemonic impact', and 'fresh recollection'), and three ('verbal', 'visual', and 'multimedia' language) categorical variables were gauged to determine the mnemonic, social, and communicability dimensions of EAEs respectively. The data was examined using three subsequent levels of statistical analysis. The results empirically demonstrate that (1) a committed aesthetic engagement of the built environment offers great opportunities for a deep and lasting existential experience; (2) EAEs cause a fundamental change in people's cognitive or affective understanding of architecture; (3) while EAEs are inevitably rooted in first-person phenomenology (i.e., not socially active events), they possess a strong a-posteriori social nature; and (4) EAEs resist communication to such an extent as to be considered ineffable. These are findings with practical and theoretical consequences for anyone interested in studying, teaching, or practicing architecture.

KEYWORDS: aesthetics, phenomenology, ineffable, socialization, survey

INTRODUCTION

As we argued in a previous ARCC article (Bermudez 2011b), the aesthetic experience of architecture remains one of the few areas in our discipline unable to address the expectations of scientific scrutiny. The reason for this situation at first appears well founded: we are talking of events unfolding 'behind' the seemingly impenetrable subjective box of embodied consciousness. Research efforts trying to address this situation have not been very successful. For instance, the investigations on the semiotics and phenomenology of the built environment during the 1980s and 1990s targeted this knowledge gap using 'meaning' as its main focus of inquiry. While valuable, these studies were directed toward our ordinary cognitive, symbolic or behavioural engagements of buildings and left untouched the most significant experiences of architecture. The fact that there is very little published information describing or even acknowledging the highest aesthetic reception of architecture is a case in point (Bermudez 2009b, Britton 2011). When scholars have tried to address this matter phenomenologically (Jones 2000, Perez-Gomez 2006), its qualitative nature returned the investigators to pre-modern methods of reasoning, hermeneutics or poetic narrative, thus failing to respond to contemporary demands for scientific inquiry.

This situation prompted Bermudez to start a research program utilizing the scientific method to study Extraordinary Architectural Experiences (or EAEs). EAEs were chosen because of their exceptional nature that (a) amplifies the experiential effects of buildings, making them easier to study than under normal aesthetic circumstances, (b) guarantees recall accuracy and thus facilitates data gathering and reliability, (c) has lasting consequences in the lives of both the public (Hiss 1990, Jones 2000) and professionals (Ivy 2006), and (d) are usually tied to well known places and/or perceptual features that simplify later objective analysis. The investigation originated 6 years ago with an online survey on EAEs done in Spanish and English over the course of one year (April 2007-April 2008). The poll defined Extraordinary Architectural Experience as:

> an encounter with a building or place *that fundamentally alters one's normal state of being*. By 'fundamental alteration' it is meant a powerful and lasting shift in one's physical, perceptual, emotional, intellectual, and/or spiritual appreciation of architecture. In contrast, an ordinary experience of architecture, however interesting or engaging, does not cause a significant impact in one's life.

Specifically, the survey asked respondents to recall their EAE and queried them about the phenomenological qualities of that event. The poll produced the largest empirical database available on the subject: 2,872 individual testimonies (1,890 in English and 982 in Spanish) gauged through 27 interrelated variables that chart their experiential structure, process, and features. In addition, the database includes detailed population data and over 250 pages of text describing the experiences from 3 open-ended entries. We will not expand on the rationale, details, and decisions shaping the survey nor the responding population characteristics. This information along with a wide range of findings are available elsewhere (Bermudez & Ro 2012, and Bermudez 2011a, 2011b, 2011c, 2010, 2009a, 2008).

In this article, we present new results addressing the following aspects of EAEs:

- The mnemonic impact of extraordinary aesthetic experiences of buildings measured in (1) vividness and recollection by themselves and in comparison to other strong life experiences as well as (2) the average years passed since reported experience.
- The social dimension of the experience: does it matter whether or not one is alone, with a friend or strangers in order to have access to these unique phenomenologies? And if so, how? Do we share our EAEs with others or, giving their highly affective and private nature, keep them to ourselves?
- The communicability potential for sharing such experience with others (via images, words, or multimedia).

The analysis will include comparisons between responses given by the English and Spanish populations. Please note that statistics of the English poll will be formatted in **bold** whereas the Spanish numbers will be in *italics.*

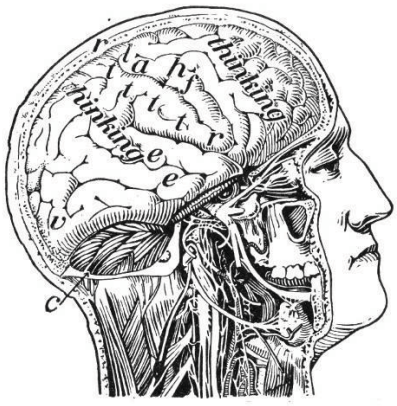

Figure 1: Extraordinary experiences of architecture have a powerful effect on memory and embed themselves in our subjective box of embodied consciousness. Source: (Illustration from A. Davison, *The Human Body and Health Revised* [1908], p.226, *CC-BY-SA-2.0,* http://creativecommons.org/licenses/by/2.0)

1.0. METHODOLOGY

Following Bermudez 2011b, we applied three consecutive statistical analyses to the survey data. The first level is univariate descriptive statistics consisting of the general responses to a survey question and was produced using the mathematical engine of *StudentVoice* —the online survey provider that encoded the questionnaire and then collected and organized the data (www.studentvoice.com). The second level of analysis incorporates bivariate descriptive statistics. *Pearson's Chi-Square* tests are performed between the responses to different survey variables (i.e., questions) and employed to determine if there existed correlations between them. Following standard statistical practices a *probability p-value* equal or below 5% (0.05) was recognized as reliable significance.[1] Lastly, and when necessary, a third level of bivariate analysis considered the established correlations by 'segmenting' the survey data into cross-tabulation or contingency tables with *StudentVoice* statistical software. This latter study allowed the comparison of, for example, how those responding "yes" or "no" to a particular question answered a second question, thus illuminating their correspondence at a higher level of statistical resolution.

2.0. MEMORY

Three survey questions were designed to address the mnemonic dimension of EAEs. The first of these is question 22 which requested survey participants to determine *how vivid and memorable their EAE was in comparison with other very strong life experiences*, and provided five choices: *Well Above, Just Above, Similar, Just Below,* or *Well Below.* **46.7%,** *32.4%* of the respondents reported EAEs to be '*Above'* other powerful existential moments, followed closely by the ranking '*Similar'* (**44.7%**, *44.5%*). The fact that a large majority in both groups (**91.4%**, *76.9%*) judged EAEs to be similar or above other powerful events in one's existence underlines the importance of aesthetics, particularly architectural aesthetics, in the lives of the people surveyed.[2]

Question 28 prompted people to determine *how fresh/vivid the recollection of their EAE was* and offered three choices: *Strong (feels like yesterday), Moderate,* or *Vague.* A clear majority (**63.5%**, *63.7%*) answered 'Strong' with only a minuscule minority selecting 'Vague' (**3%,** *2.2%*) thus, at least partially, explaining the high rating of EAEs in relation to other powerful life experiences (question 22) and the longevity of the impression in people's memories (question 3 below).

Last, question 3 among other things,[3] asked individuals to define *the length of time that had passed since the actual occurrence of the experience*. Considering the 10 most common places cited by the respondents (which account for **21%** and *24.6%* of the total number of survey entries) the average recollection was at least **13** and *11* years old with the oldest experience going back to **1950** and *1958* (with many from the 1960s and 1970s). Memories that last over a decade (and some much longer) without losing much of their freshness (see answers to question 28) is a significant finding and only possible if a person's inner psychological core has been touched —something that would also account for the responses to question 22 (Figure 1).

When we take into account that **71.3%,** *78.8%* of survey participants had 10 or less EAEs in their entire lives (with over 50% in either poll reporting 5 or less),[4] we realize the uniqueness, power and rarity of these experiences and why they are ranked so high (i.e., as in responses to question 22— see above), remembered so well, and for such a long period of time. Moreover, the strength in mnemonic freshness, impact, and longevity of EAEs is all the more impressive when we consider that **45%**, *44.6%* of those who were surveyed clocked the entire duration of their EAE at 'under 30 minutes' (nearly the same percentages of those estimating it at 'over 30 minutes').[5] The brevity of the experience underlines the tremendous emotional and perceptual force of the event. Not surprisingly, respondents describe their EAE as being '*emotional*' (**70.3%**, *76.7%*), '*intense*' (**80%**, *88.3%*), '*profound*' (**89.2%**, *91.7%*), '*vivid*' (**85.3%**, *84.5%), 'spontaneous'* (**78.5%**, *91%*), and causing '*strong body reactions',* such as goose bumps, heart pounding, shivers (**56.3%**, *43.4%*), and '*weeping'* (**17.9%**, *28.7%*). The compounded effect of all these characteristics and effects of the lived EAE could account for **81.4%**, *79.4%* of people reporting some kind of transformation in their cognitive or affective understanding of architecture,[6] something remarkable given the high educational level (i.e., college and above) and expertise (i.e., architecture) of a majority of survey participants (Bermudez 2010, 2008).

We conducted Pearson's Chi-Square analysis to test correlations among all of the phenomenological dimensions of EAEs related to memory (represented as 'Comparative Mnemonic Impact' [question 22] and 'Fresh Recollection' [question 28]). Table 1 presents the results of this analysis and shows a strong dependency in 11 out of 16 cases. The remaining 5 are in such borderline or split statistical conditions as to generally validate their overall interdependency (except in three sub-cases). This suggests, for example, that the more '*Comparative Mnemonic Impact'* an EAE has, the more '*Fresh Recollection'* it possesses (and vice versa). Similarly, the more 'intense', 'profound' or 'spontaneous' the EAE, the clearer its recollection and higher its ranking in comparison to other strong life events (and vice versa). Picking just one example so we can go in further detail, EAEs deemed (well and just) 'above other very strong life experiences' were more '*Emotional'* (**+21%**, *+10%*), '*intense'* (**+28%**, *+13%*), '*profound'* (**+14%**, *+7%*), '*vivid'* (**+14%**, *+8%*), '*spontaneous'* (**+12%**, *+6%*), more likely to cause a *change in one's understanding of architecture* (**+5%**, *+8%*), *'fresher recollection'* (**+43%**, *+23%*!), and involve more '*weeping*' (**+16%**, +14%) and '*body reactions'* (*+17%*) than EAEs judged (well or just) 'below other very strong life experiences'.

While these statistical findings are hardly surprising in light of common sense and what philosophers and psychologists have long argued (e.g., Johnson 2007, Merleau-Ponty 1962), it is important to empirically demonstrate the essential role that emotion and embodiment play in establishing and keeping architectural memory (for more on this see Bermudez 2011b). While the correlations between Memory and 'Transformation' is borderline (with 'Fresh Recollection') or only half there (with 'Comparative Impact'), there is enough empirical circumstantial evidence in the rest of the survey findings, to make a claim that a committed aesthetic engagement of the built environment offers great opportunities for profound and lasting

existential experience. This is something particularly significant for those interested in studying, teaching, or practicing architecture.

Table 1: Correlation matrix summary of Chi-square test results analyzing the dependency or independency between 9 variables. The existence of a correlation is established by a probability p-value <0.05 while no correlation by a p-value >0.05. Underlined numbers indicate 'borderline' p-values (0.07>p<0.05) that are likely to point at a dependency between the variables. N varies depending on the question/variable. Black cells show at least one of the p-values to be above 0.05 (and beyond borderline condition), that is, prove no significant correspondence between the variables. As in the rest of the paper, bold numbers stand for English survey statistics whereas italics for Spanish data. Source: (Authors 2013)

	Comparative Mnemonic Impact	Fresh Recollection	Weeping (Q9)	Body Reactions (Q10)	Transformation (Q27)	Intensity (Q14)	Profoundity (Q15)	Vividness (Q16)	Spontaneity (Q17)
Comparative Mnemonic Impact (Q22)		**0.000** *0.000*	**0.001** *0.008*	**0.000** *0.000*	**0.581** *0.020*	**0.000** *0.028*	**0.000** *0.016*	**0.000** *0.633*	**0.000** *0.000*
Fresh Recollection (Q28)	**0.000** *0.000*		**0.002** *0.070*	**0.000** *0.176*	**0.070** *0.074*	**0.000** *0.000*	**0.000** *0.004*	**0.000** *0.000*	**0.000** *0.029*

3.0. SOCIAL DIMENSION

As social beings, we humans have the natural tendency to share what happens to us the individually with others. Any thorough study of EAEs, therefore, demands to consider its societal dimension. Following are the three questions specifically designed to address this matter, which, in relation to response to other survey questions (as we will see) helps us cast empirical light on the issue at hand.

- *Question 6: When you had this experience, were you: (with one friend, with many friends, alone, with strangers, don't recall.)*
- *Question 26: Have you shared your EAE with others? (Yes, No, Don't recall)*
- *Question 29: If you wish, and in less than 500 words, tell us of your EAE as close as possible to how you remember it.*

The social dimension of EAEs is clearly behind **70.9%**, *73.8%* of people who acknowledge visiting the inspiring places with others (either one friend, several friends or strangers) although a good quarter of the respondents (**27.1%**, *25.3%*) reported being alone. Of course, this answer also has to do with the fact that buildings generally function as socio-cultural environments and are of a scale that welcomes large numbers of people, even if such places end up being tourist destinations (Figure 2). Yet while the responses would seem to suggest some social type of aesthetic experience, the reported phenomenology of EAEs is far from it. In effect, when we analyze what survey participants describe as happening during their EAE, we find that a good majority (**61.9%,** *56.8%*) indicate that their experience was strong enough to cause them to *refrain from talking* (a convincing indicator of lack of social engagement).[7] Similarly, **87.1%**, *87.1%* of those surveyed recognized that their EAE made them '*introspective and silent*'.[8] A Chi-Square test between these two variables (talking and introspective/silent) shows a p-value of **0.000**, *0.000* that confirms their significant correlation and suggests that EAEs cause individuals to cease being social even when they may have been with others. In other words, despite the inevitable social expectations of verbal and non-verbal communication that being with others demands, the event was sufficiently strong enough to shift the person's attention to subjective, first-person, or internally felt experiences. Thus, the EAE was not principally lived nor shared socially even though, later on, people may have felt the necessity to share it with others.

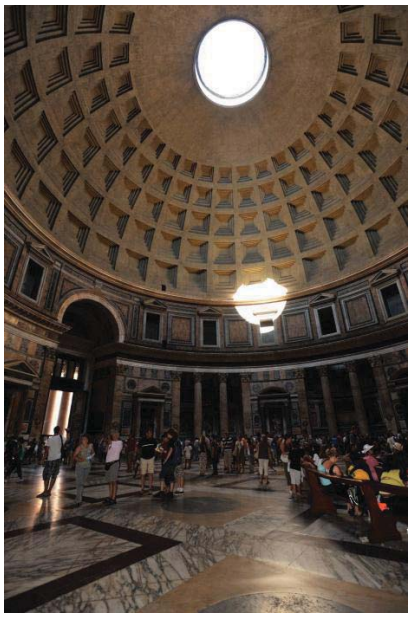

Figure 2: The Roman Pantheon, one of the top cited buildings from the survey, is one example where the social dimensions of EAEs came into play (see Bermudez & Ro 2012). Source: (Emilio Labrador, *CC-BY-SA-2.0,* http://creativecommons.org/licenses/by/2.0)

Cross checking responses between '*social company*' (question 6) and *how vivid and memorable the EAE was in comparison with other very strong life experiences* (question 22), we found no statistical evidence that the '*comparative mnemonic impact*' of an EAE in someone's life was affected by the social dimension of experience. In other words, whether one was alone or with others had no relevancy as to the power of the experience; however, we did find that the type of experience was different. EAEs were **29.2%**, *27.5%* less talkative and (consequently) almost **7%**, *9%* more introspective and silent for those who were alone than for those who were with one or more friends.[9] There are obvious reasons for this finding, such as being alone results in not having someone to talk to about the experience while it takes place; nevertheless, the net result is that less talking and more introspection/silence probably deepens the quality of the experience. We also found that those who had their EAE alone had more (**+8%**, *+11%*) '*fresh recollection*' than those who were with one or more friends.

Responses to question 26 overwhelmingly (**85.2%)**[10] portray people sharing their EAE with someone else after it had happened. The large testimonial percentage clearly indicates the need people had to communicate their experience to others and the importance of the event which made it worth sharing (supported by answers to question 22).[11] It is here where EAEs find their true social dimension as opposed to when they are happening. Several Chi-Square tests support all these interpretations (See Table 2).

Table 2: Summary of Chi-square test results analyzing the dependency or independency between 6 variables related to the social dimensions of EAEs. Source: (Authors 2013). The code used to shade the table cells is the same as in Table 1.

	Social Company (Q6)	Sharing (Q26)	Non-Talking (Q8)	Introspection-Silence (Q11)	Comparative Mnemoic Impact (Q22)	Fresh Recollection (Q28)
Social Company (Q6)		**0.254**	**0.000** *0.000*	**0.000** *0.006*	**0.221** *0.074*	**0.000** *0.000*
Sharing (Q26)	**0.254**		**0.000**	**0.318**	**0.137**	**0.000**

If there is still any doubt about how important it is for people to share their experience with others, poll participants casted an affirmative vote by going well beyond the minimal demands of the survey and typing their story when responding to open-ended question 29. A good **46.7%**, *40%* of respondents decided to give even more of their time (often writing stories well beyond the 500 word limit requested) to share their exceptional aesthetic moment with others! And we could go further. After all, how else can we see the completion of the survey but as an attempt to share one's EAE with the world?[12] Such an effort shows the compelling need people have to communicate their significant lived experiences with others, even when most individuals understand at some level the difficulty behind conveying it (see 'Communicability' section below). As Nehamas (2007) and many other philosophers argue, the very desire and effort to make others see the beauty we have experienced and, if possible, convince them that it is so are the hallmarks of a true aesthetic experience.

4.0. COMMUNICABILITY

Since there is no way to engage in the social dimension of EAEs without a common intersubjective language that enable the interaction between individuals, it is important now to complete our study by looking at what we term, for lack of a better word, 'communicability'. Three survey questions probed people's perceived ability to communicate their EAEs.

- *Question 23: Could your extraordinary experience of architecture be fully communicated through Words? (Yes, No, Don't know)*
- *Question 24: Could your extraordinary experience of architecture be fully communicated through Images? (Yes, No, Don't know)*
- *Question 25: Could your extraordinary experience of architecture be fully communicated through Multimedia [e.g., video, sound, immersive 3D]? (Yes, No, Don't know)*

(Un)fortunately, the word 'fully' was missing in the Spanish version of these questions. Its absence greatly affected the answers and accounts for the large differences between Spanish and English responses. While we could all probably agree that something (however limited) about one's EAE may always be communicated, it would be much harder to concur with one's ability to 'fully' or 'completely' transmit such an experience. Hence, on the one hand English speakers agreed that words, images, and multimedia were *incapable* to 'fully' communicate the lived experience (**56.8%, 57.0%** and **51.9%** respectively).[13] On the other hand, Spanish speakers reported that words, images, and multimedia were *capable* to communicate (something about) the lived experience (*73.8%, 65.6%*, and *55.6%).*[14] Pearson's Chi-square tests between questions 23, 24 and 25 found a p-value of **0.000** and *0.000* across the board, thus demonstrating a significant relationship between how respondents answered one question to how they answered the others. It is noticeable that respondents in general had more confidence in using words (**33.2%**, *73.8%*) rather than either images (**32.4%**, *65.6%*) or multimedia (**26.9%**, *55.6%*) to share their experience.

These three questions empirically tested the 'ineffability' claim so often made regarding extraordinary aesthetic events. We are talking of what Le Corbusier (1948) called the experience of 'ineffable space', meaning the indescribable, inexpressible, or incommunicable nature of profound experiences of architecture. Rudolf Otto (1970) presented a similar condition when discussing the phenomenology of the 'numinous.' According to Otto, when we encounter the Holy Other through beauty (and this is the ultimate reach of aesthetics for him), such an experience resists and transcends all ability of human communication and/or language. Looking at the responses of the three questions, it is clear that a good **2/3rds** of the English speaking respondents (if we include the 'Don't Know' group, which seems a legitimate move) agree with Le Corbusier and Otto whereas 'only' *1/3rd* of the Spanish speakers do, but then again their responses seem to be even more poignantly in support of such ineffability considering the context in which they were answered.

Such realization did not keep survey participants from trying to communicate their experience, especially those that enjoyed EAEs the most. For example, survey participants that ranked their EAE to be *'above other strong life experiences'* were nearly **7**, *2* times more likely to share their stories in Question 29 than those who ranked them 'below'. Quite simply, as we argued above, we are compelled to share with others our most important experiences even when such effort may end up falling short.

CONCLUSION

We conclude summarizing the results of our empirical study of the mnemonic, social and communicability dimensions of EAEs. Regarding memory, we found that a committed aesthetic approach to architecture offers a real chance to produce a profound and lasting impact on one's life. Survey participants made clear

that EAEs are second to none when compared to other powerful events in one's existence. They also reported that EAEs caused them to change their cognitive or affective understanding of architecture. These are findings with practical and theoretical consequences for anyone interested in studying, teaching, or practicing architecture. In addition, the high level of mnemonic recall discovered is important to claim that the testimonies, indeed the survey results, are trustable, valid and thus relevant. Poor recollection would have been the kiss of death to any argument that EAEs are at all extraordinary. Exceptional things get recorded in our memory, whereas ordinary events succumb to oblivion.

We found that the social dimension of EAEs plays an essential role after and not during the event. While an extraordinary experience takes place, the aesthetic phenomenology is unavoidably first-person bound. However, immediately afterward, when we find the need to share the experience with ourselves (in order to explain or rationalize what has happened to us) and definitely with others, we frame a largely non-verbal, multidimensional, and non-intellectual phenomenology (Bermudez 2008, 2009a, 2011c) into the straight jackets of a language (through words, images and so on). There is little doubt that much is lost in translation, hence the long-held argument on the ineffability of EAEs — something for which we acquired a good empirical proof in our study of communicability. Here we remember our own findings on the powerful role that embodiment and emotion play in EAEs (Bermudez 2011b) and how such nature points at the ultimate impossibility to literally convey the full 'thickness' of an extraordinary aesthetic moment through any language or media. This radical physical, emotional, subjective quality of EAEs also explains their remarkable mnemonic longevity, power, and attraction.

ACKNOWLEDGEMENTS

We want to thank the thousands of individuals worldwide who gave their time to participate in the survey. Not only is each selfless act helping advance the state-of-the-art of our knowledge but, more importantly, is also a living proof of the true and staying power and relevancy of architecture in our lives.

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ENDNOTES

[1] The Pearson's Chi-Square test for independence considers how likely a result is due to chance. In our case, this statistical test looks at whether responses for one question are independent of the responses for another. That they are independent (i.e., no relationship exists) is the null hypothesis. A Chi-Square probability value (*p-value*) of less than or equal to "0.05" is justification for rejecting the null hypothesis that the two variables are unrelated. In other words, a p-value of "0.05" means that there is a five percent (.05) chance of being wrong — or that there is a 95% chance that there is a true correlation between the two variables being compared. In general, anything below "0.01" (i.e., 1%) is considered to be an excellent result (i.e., 99% confidence). For more on this, see Agresti & Finlay (1997, 223-228).
[2] We did find a large difference between English and Spanish speaking populations when comparing their lower assessment of EAEs. Whereas a small minority of the English speaking respondents (**8.5%**) considered EAEs '*Below*' other strong life experiences, over a fifth of Spanish speakers (*23.2%)* ranked them in this manner. We could hypothesize that this might be due to how Latin cultures place more importance on socially driven events in a person's life as compared to the more individualistic attitudes of English speaking cultures.
[3] Question 3 stated *"Please name the building or place that elicited your extraordinary experience and, if possible, the year you had it and how far you lived from the location."* For a list of the 10 most cited places see Bermudez 2009a, Bermudez 2010. For findings about distance refer to Bermudez 2011a
[4] These statistics cover responses to Question 2: *"How many extraordinary experiences of architecture have you ever had? (1, 2-5, 6-10, over 10)."*
[5] Question 20 asked *"How long did your EAE last in its totality? (Under 5 minutes, 5-15 minutes, 16-30 minutes, Over 30 minutes, Don't Recall*),"
[6] These are the results of answering survey question 27: *"Did this experience change your understanding/appreciation of architecture? (Yes, No, Don't know/Not sure).*"
[7] This finding comes from answers to *question 8: As it was happening, did your extraordinary experience of architecture make you talk? (Yes, No, Don't recall)*
[8] Question 11 asked survey participants if, *"as it was happening, their EAE made them introspective /silent"* and offered three possible answers: *"Yes, No, Don't recall"*
[9] To be precise, the **7%**, *9%* statistics refers to being with many friends. The difference shoots to *+15%* when we compared it to experiences taking place with only one friend.
[10] This question was missing (due to an error) in the Spanish Survey.
[11] Of course, there is the potential that those reporting more sharing possess a more 'social' type of personality. In our case, they tended to be slightly more female (**+4%**), educated (**+11%** with graduate school or above), and with less background in architecture (**–6%**).
[12] There are other possible interpretations, such as the need to validate one's experience.
[13] There was also a relatively high level of "Don't know" responses: **9.9%**, **10.6%** and **21.4%** respectively; the latter indicates a lack of understanding of what multimedia could do.
[14] In comparison to the English, there was a very low level of "Don't know" responses: *0.8%*, *1.1%* and *2.5%*.