Proving Cultural Value of the Arts for Health

Methods and Analysis Report for The Happy Museum: Cultural Value and Making
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Culture and leisure providers will need to work with the health sector to look at monitoring clinical outcomes to establish which interventions are the most successful in terms of improving and maintaining health. The health gains from taking part in creative activities are well documented in publications such as the Foresight Project's *Five Ways to Well-being.* This analysis, by a panel of 400 scientists, concluded that five simple steps incorporated into daily life can fortify mental health and can contribute to a more productive and fulfilling life.

1. **Connect**: Developing relationships enriches life and brings support.
2. **Be active**: Sports and active hobbies make individuals feel good and maintain mobility.
3. **Be curious**: Noting everyday moments helps foster appreciation of what matters.
4. **Learn**: Fixing a bike or learning an instrument gives satisfaction and boosts confidence.
5. **Give**: Helping others links individual happiness to the wider community and is very rewarding.

These key ingredients for health outcomes are now used widely in strategic planning for social care.

In addition, to the above benefits, both physical and creative activities promote social interaction. The delivery of good quality cultural and leisure services promotes a sense of community and common interest that combats social isolation; a key aspect for mental health and wellbeing. (Fair Society, Healthy Lives, Marmot Review, February 2010) Engaging in accessible, affordable cultural activity or contributing as a volunteer can play a major role in supporting independence, providing an opportunity for people to socialise, which is vitally important as loneliness can speed up cognitive decline and memory problems.

Methodology
The methods that we used involved tests for mindfulness, Baer, R.A. et al, 'Using Self-Report Assessment Methods to Explore Facets or Mindfulness', in *Assessment*, Volume 13, no.1, March 2006, Sage Publications.

Mindfulness data and how it presented is exampled beneath:

> **Your overall mindfulness score is 3.8**
> Closer to 1 indicates less mindfulness and closer to 5 indicates more mindfulness.
> There is no cutoff score for being mindful or not mindful, it is just a continuum from low to high.Your score on each of the subscales related to the five facets of mindfulness is below.
>
> **Your observe score is 4 -** Observe = Staying present with perceptions, sensations, thoughts, or feelings, even when they are unpleasant or painful; not distracting ourselves.
>
> **Your describe score is 3 -** Describe = Being able to describe or label in words our beliefs, opinions, emotions, expectations.
>
> **Your act with awareness score is 4.3** - Act with Awareness = Staying present with our actions,

without distraction.

Your nonjudgement score is 3.4 - Nonjudgement = Being nonjudgmental of our own experience.

Your nonreactivity score is 4.3

The participants ranged from the lowest score of mindfulness of 2.2 to the highest at 4.3 scored as a pre-test. 75% of participants were in the 'mindful range' of 2.2-4.

60% of the participants tested were from Derby/Derbyshire, under 2% came from Leicestershire, Nottinghamshire and Sheffield. Seasonality is likely to have played a part in this as the testing occurred between January, February and March 2014 on Thursday evenings 6pm-9pm and Sundays 11am-3pm.

The difficulty of quantifying impacts was outlined by Matarasso, 1996 and Moriarty 1997 in *The Social Impact of the Arts*. They both cautioned against scientific quantifiable measures. So we thought we would try and use them!

The BBC class calculator, based on Bourdieu's approach (1984), suggests that there are types of economic , cultural and social capital which give people advantage. The social capital used a 'position generator', developed by the American sociologist Nan Lin (2001) to measure the range of people's social ties, so who they knew, who had a range of occupations. Economic capital is measured on household income, owning property, savings – so different types of economic capital. Followed by education, social mobility and political attitudes. Cultural capital data was collected around engagement with 'highbrow' and 'emerging' culture and so ranged from classical music, stately homes to video games, or a preference for hip-hop.

Social Capital used the Cambridge Social Interaction and Stratification (CAMSIS) scale. So social contacts and numbers of people they knew.

As this Class calculator had an online presence and we were able to get it to do the calculation and as we did not need to keep people's data, we were only interested in their individual results.

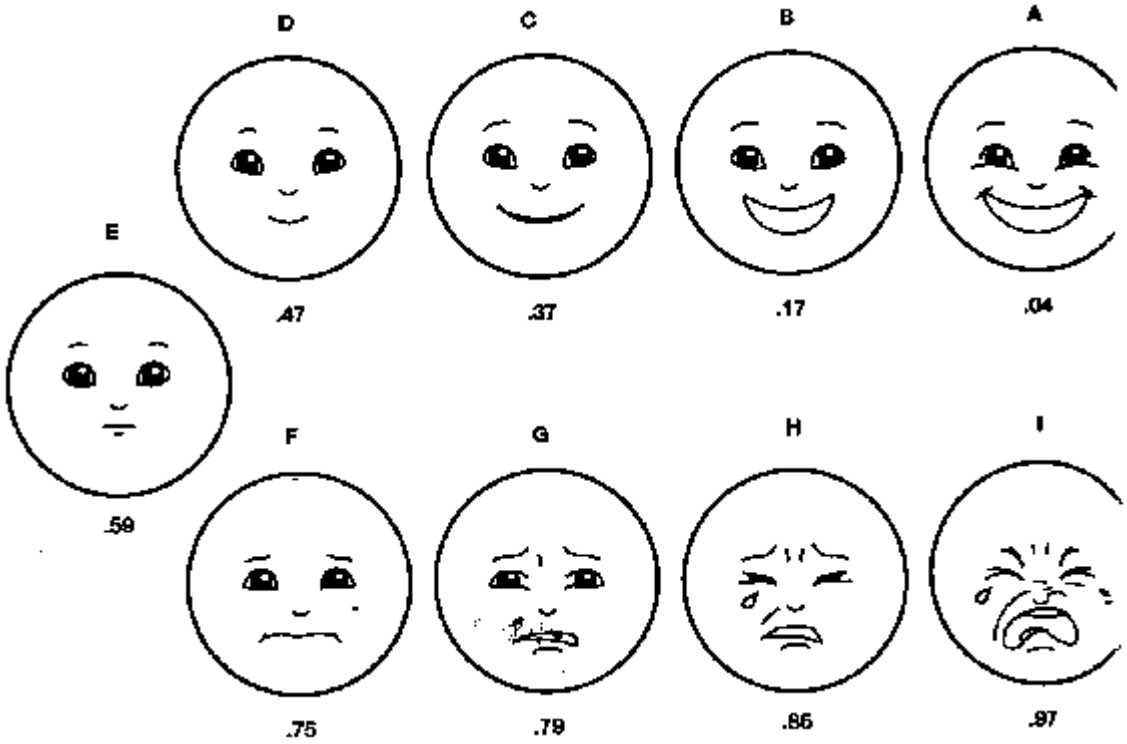
The client group came from a diverse and varied background. Some participants were employed, unemployed, retired or about to be retired. None of the client group was under 18. The largest class group to emerge from the participants tested were Emergent Service Workers followed by Precariat and the Established Middle Class, both equal. However, all categories had at least one participant – that is Traditional Working Class, Elite, New Affluent Worker, and Technical Middle Class.

We also used a wellbeing questionnaire before undertaking the activities at the museum which asked makers **How happy are you?** This was a tick box activity and had been designed by The Warwick-Edinburgh Mental Well-being Scale to measure your mental wellbeing. This was created by mental wellbeing experts, and is often used by scientists and psychologists. *The questionnaire for measuring mental wellbeing was developed by researchers at Warwick and Edinburgh Universities (see Tennant R, Hiller L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S (2007) The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation, Health and Quality of Life Outcome; 5:63 doi:101186/1477-7252-5-63).*

In this test most people score between 41 and 59. In our participants this pattern was similar with only 2% under 41. However, this 2% had below average scores which indicate that they need to take

action towards addressing how they feel. Our average wellbeing scores were in line with the national studies in that they numbered 19.5% and so were the largest group of results. However, through WEBWBS they would be advised to take action to improve their mental wellbeing. 10% of our participants were above average.

We used visual analogue indicators, (Wewers M.E. & Lowe N.K. (1990) to help with a critical review of visual analogue scales in the measurement of clinical phenomena. (Research in Nursing and Health 13, 227±236.) We used these to measure feelings, (feelings are states of the self), and incorporate moods and sensations. Although a person may appreciate precisely his state on a selected dimension, words may fail to describe the exactness of the subjective experience. The paucity of suitable quantitative terms in common speech limits the amount of information which can be transferred and so continuous phenomena have to be graded in artificial categories and a digital system is imposed on the observer, when the freedom of an analogue system would be welcome.



The data from the Visual Analogues, places the following percentages on how people felt. This visual indicator gives a variant articulation on the information about mood, wellbeing and happiness. Our scores are reflected in images B, C, D, E, F and H. H and F were an individual response and not a percentage. 34% chose image C; 16% chose image B; 14% chose image D and 10% chose image E.

An understanding of many problems in clinical research pre-supposes that it is possible to communicate the desired information from patient to clinician in a way amenable to measurement. A working party of the British Association defined measurement as, 'the assignment of numerals to things so as to represent facts and conventions about them' (Stevens 1946). For the measurement of feelings, communication based on a simple visual analogue seemed appropriate. Lines, with their

boundaries clearly defined as the extremes of the feeling, serve well for marking (Hayes & Paterson 1921). The limitations of an analogue system are no more than those true of words; even speech contains an assumption that the same language is being spoken in order to communicate information, though this assumption may be far from true. The same word can be used with different meanings, and need not imply that people experience the same feeling. The same amount of change may take place, but in only some people will this alter a category term, and then only if the change is from a certain initial value. (RCB Aitken, Department of Psychiatry 1969 in A *growing edge of measurement of feelings*)

This was accompanied by a Brief Mood Introspection Scale (BMIS), (Mayer, J. D., & Gaschke, Y. N. 1988, 'The experience and meta-experience of mood', *Journal of Personality and Social Psychology*, 55, 102-111.) Brief Mood Introspection Scale, created by Mayer and Gaschke (1988), contains sixteen mood adjective items that measure eight mood factors using two items each*. These eight factors are happy, loving, energetic, fearful, calm, angry, sad and tired. A respondent on a scale of 1 to 4, rating how well each phrase describes the mood, measures the score for this scale. Four is indicating a good match between the adjective and the respondent's mood. There are four scales used for the BMIS scoring: Pleasant-Unpleasant scale, Arousal-Calm scale, and Positive-Tired scale and Negative-Relaxed scale. In the first mentioned scale, the adjectives that are added are active, calm, caring, content, happy, lively, loving and peppy, where the rest 8 of the adjectives are subtracted. In the Arousal-Calm scale, adjectives such as active, caring, fed up, gloomy, jittery, lively, loving, nervous, peppy, and sad are added, where the calm and tired are subtracted. The Positive-Tired scale, the adjectives added active, caring, lively, loving and peppy, and subtracts drowsy and tired. The last scale adds up fed up, gloomy, jittery, nervous and sad, and subtracted is calm. The adding and subtracting is the suggestion from the original paper (Mayer and Gaschke, 1988) how to score the scale, however there is a suggestion of reversed scoring (full scoring method attached). Furthermore, there is no information how to compare and interpret or analyse the final score.

Manner *et al.* (2012) used the scale to examine categorization of the Intrasexual rivals, but did not mention how they were scoring the results of the BMIS; on the other hand, Biss and Hasher (2012) extended the 4 point scale to the 7 point scale of the final scoring of their morning-type positive attitude affects. Baumeister et al. (1998), Jones et al. (2012) also mentioned the BMIS in their experiment but as in previously mentioned researches there was no scale provided how to interpret the results. However, all of them refer to the original article and sustain that the scale is reliable.

*-Happy (happy, lively)

-Loving (loving, caring)

-Calm (calm, content)

-Energetic (active, peppy)

-Anxious (jittery, nervous)

-Angry (grouchy, fed up)

-Tired (tired, drowsy)

-Sad (gloomy, sad)

We set out to examine if there was a significant difference between the scores from pre and post mood scales, a paired t-test was conducted. As the data was normally distributed and independent, and there was homogeneity of variance the standard paired t-test was conducted. The results of the t-test have shown that there was a significant difference between pre and post scores, as the p-value was equal 0.00506. From 28 pre and posts mood questioners, 20 of the pre-test score went up in the post test, and 8 went down, none of them stayed the same. The average distance between pre and post score in those that went up is equal 5.45 and the median is equal 4, and for those that went down 2.38 and 1, for average and median respectively.

With our small pilot test group it was important to use a mix of recognised indicators of measurements and indicators of wellbeing, so that the verbal and the analogue and digital, the scientific, the quantitative and qualitative judgements could inform the overall information.

In addition, we also tested salivary biomarkers, blood pressure and heart rate looking for fluctuations in results before and after activities.

At the Silk Mill people were made to think about the function of the space and their relationship to it. The problems we are dealing with relate to the legitimacy of activities and of feelings about those activities when perhaps the power of involvement should stand for itself. It is this legitimacy of subjectivity as a measure that may need to be recognised as a significant marker in finding value in artistic and creative practices. We certainly give this value when linked with allied health care in occupational health environments by providing people with the opportunity to learn new skills, that take them out of themselves, to provide a flow. The idea of flow is identical to the feeling of being *in the zone* or *in the groove.* The flow state is an optimal state of *intrinsic motivation,* where the person is fully immersed in what he/she is doing. This is a feeling everyone has at times, characterized by a feeling of great absorption, engagement, fulfillment, and skill—and during which temporal concerns (time, food, ego-self, etc.) are typically ignored. (**Csikszentmihalyi, M.**, *Finding Flow*, 1997.)

Our physiological tests involved testing cortisol levels, Secretory Immunoglobulin Antibody or (S-IgA), Brief Mood Introspection Scale, created by Mayer and Gaschke (1988), heart rate and blood pressure.

Immunoglobulins are proteins consisting of two heavy chains and two light chains of which there are five main forms IgM, IgG, IgD, IgE and IgA (Schroeder and Cavacini 2010). The Secretory Immunoglobulin Antibody (S-IgA) is an antibody that is found in secretory fluids such as saliva (Matousek *et al.* 2006). Immunoglobulin A is produced locally in the saliva glands by plasma cells (Bokor-Bratic 2000; Brandtzaeg 2007). S-IgA is the most dominant of the immunoglobulin antibodies that are secreted by salivary glands, as it is the primary defence in mucosal immunity (Phillips *et al.* 2006; Wang *et al.* 2010). The majority of infections occur at the mucosal level, therefore, S-IgA is very important for the immune system (Gallagher *et al.* 2008). S-IgA aids the immune system in fighting against pathogens that are ingested, inhaled or are on the bodies surface (Wang *et al.* 2010).

S-IgA is composed of 'natural antibodies' that have broad specificity and can recognise many different types of antigen, therefore, levels of S-IgA are independent on the re-exposure to antigens; this shows that it is a valuable indicator for stress (Phillips *et al.* 2006). There is some inconsistency in the literature with regards to the usefulness of S-IgA as a stress marker, however, it is suggested that these disagreements may be due to differences in methodology (Matousek *et al.* 2006). Matousek *et al.* (2006) have suggested that S-IgA is reliable as a marker of stress and measurement of relaxation response. This view is shared by Tsujita and Morimoto (1999) however they express the need to separate analysis of delayed stress effect and immediate stress effect to

ensure reliable results. Furthermore evidence suggests that S-IgA responds positively to relaxation techniques (Matousek *et al.* 2006)

There is a wide range of evidence that suggests that stress has an effect on immune function (Cohen *et al.* 2001). Lower levels of IgA have been attributed to higher levels of stress where higher levels of IgA are seen in healthy individuals (Gallagher *et al.* 2008). It has been shown that psychological stress influences the composition of proteins in saliva (Bosch 1996; Tsujita and Morimoto 1999). Furthermore, evidence suggests that acute psychological stress is associated with a decrease in S-IgA concentration and secretion rates (Phillips *et al.* 2006). The decrease of S-IgA due to acute stress has also been suggested by Cohen *et al* (2001) where stress has been linked to a daily increase in S-IgA. *Studies also suggest that down-regulation of S-IgA, which may occur due to stress could increase susceptibility to infections, especially upper respiratory tract infections (Phillips et al. 2006).* Chronic stress has been shown to either decrease the production or reduce the efficiency of transportation of S-IgA to the saliva, however, it is unclear which of these assumptions is true (Phillips *et al.* 2006). Furthermore, negative life events have been shown to be associated with decreased S-IgA secretion rate indicating that chronic stress affects levels of S-IgA (Phillips *et al.* 2006). Previous studies have shown that caregivers experience lower immune function; a study by Gallagher *et al.* (2008) has shown that this may be attributed to low levels of IgA, especially in the elderly. Decreased levels of S-IgA have also been observed with smoking and chronic alcohol consumption, so these are factors that need to be monitored when testing for S-IgA (Waszkiewicz *et al.* 2012).

Blood serum is sometimes used for the measurement of IgA, however, saliva sampling has advantages in that it is less invasive and can be carried out without medical supervision (Lima *et al.* 2010; Wang *et al.* 2010). Furthermore saliva sampling is easier and the cost of storage is also lower (Lima *et al.* 2010). There are a variety of methods for testing IgA such as radial immunodiffusion and enzyme-linked immunosorbent assay (ELISA). In recent years ELISA is the preferable technique as it is more sensitive and simpler (Bokor-Bratic 2000). A competitive ELISA is the simplest method, which is lower in cost than other techniques, takes less time and is more reproducible (Wang *et al.* 2010).

A study that was conducted found that stressful daily events, negative effects and agitation were associated with high levels of cortisol. The level of cortisol with stressful daily life events depended on whether the event was ongoing and how frequent a similar kind of event had occurred (Eck *et al*, 1996). The mood of the person has shown to play a crucial role in the relationship between stressful events and cortisol secretion (Eck *et al*, 1996). It also showed that negative affectivity is related to elevating cortisol secretion (Eck *et al*, 1996).

Factors that have proven to reduce cortisol levels include: omega 3 fatty acids, music therapy, massage therapy, laughing and black tea (Uedo *et al,* 2004; Field *et al*, 2005). Factors that have been proven to increase cortisol levels: caffeine, deprived sleep, traumas and continuous consumption of alcohol (Lepruoult et al, 1997; Lovallo, et al, 2006).

In the biological and clinical tests, there were no significant differences between heart rate and blood pressure.

However, the saliva tests showed significant differences -Overall, the difference in pre and post sIgA was highly significant (P=0.003), indicating that there was a physiological change as a result of the intervention. Most of the changes were increases in S-IgA, which was indicative of a boost to the immune system. This has also been seen previously after meditation training over longer periods . *(Fan et al. (2010) Mucosal immunity modulated by integrative meditation in a dose-dependent fashion. J Altern Complement Med 16:151. Rosdahl, D.R.L. (2003) The effect of mindfulness*

meditation on tension headaches and secretory immunoglobulin A in saliva. Doctoral thesis, University of Arizona.)

The qualitative data proved most interesting and significant in how participants presented their health and wellbeing and what they subsequently felt.The **purpose** was to **examine** and **evaluate the impact of a cultural experience on health and well-being**, and in particular, **the role of 'reverie'** within this. During the second half of the nineteenth century, *reverie* became an increasingly important subject in British art. Many artists (Rosetti, Whistler and Clausen) explored the visual manifestations of reverie, and to this end, art criticism used scientific writings on psychology. The contemporary criticism discussed works with respect to trance, vacancy, somnambulism, absorption, contemplation, abstraction, ecstasy, spiritualism, passive dreaming, hallucination, unconsciousness, half-conscious, reverie. Our intention was to take ***the celebration of unconscious reverie*** as the purpose for analysing the **user-participants'** experience and perceptions of its value, examining whether it was possible to formally demonstrate that 'cultural value', as a scientific experiment with 'evidence-based' practice, using clinical and biological science methodologies.

Groups of **user-participants** were identified as Silk Mill staff, random members of the General Public and a randomised group of individuals, participating in the *Re:Make Reimagining Derby's Silk Mill*, Derby Museums project. Some of the pre-cultural experience discussion with 'users' afforded us the opportunity to perceive (have a sense of) their sense of themselves, their spirit and wellbeing before they started the 15 minutes cultural experience experiment.

1. How far does **reverie** in the **museum and gallery** *support* **positive health** for *the individual*?

2. How can we **holistically assess and test the mind/body/spirit of the individual** spectator/visitor/'user' (their use of the cultural experience) of the museum and gallery, in order to *evaluate the contribution* of **the cultural value of reverie towards wellbeing?**

3. How can the *cultural value of reverie* in *the museum and gallery experience* contribute to **Eudemonic wellbeing**, which means an assessment of the extent to which people think the things they do in their lives are worthwhile and valuable?

Each 'user' was escorted to the 'curated exhibition space' and given a list of instructions to read carefully, before commencing any activity. Once inside the room, on their own, they read that, 'there are five areas of defined space in which you can contemplate, meditate, daydream, or fall into a state of being lost in your own thoughts.' They read that they can choose to focus their concentration on either Artwork 1: a painting; Artwork 2: a photograph; Artwork 3: a view out of the window; Artwork 4: two painterly photographs; Artwork 5: a collection of objects. They are asked to look at all five choices before deciding which Artwork area to sit down in, and once seated, to start looking at their chosen Artwork and 'to use this opportunity to enjoy this contemplative space setting and the chance to enjoy the experience of being lost in your own thoughts.'

A 'Microscopic' moment of analysis

When asked if their choice of artwork had enabled an experience of 'contemplation, meditation or daydreaming, people positively described it as 'inspiring', 'nourishing' - **'It made me think about things I wouldn't normally think about.'**, and spoke to their personal circumstances and challenges in the present moment, **'Feeling a bit better, but could be 2 cups of tea.'**, and **'This whole place does [the Silk Mill], but spoke to me.'** Examples of problems or issues for them at present included 'A troublesome relationship with a partner or child': **'Not troublesome, but worrying. I find my son worrying; he's too laid back. I can imagine him still living with us at 50, still playing games. Our relationship is good.'** 'The ongoing burden of caring for a sick relative': **'My dad has thrombosis. I don't do the main caring. He has a wooden leg. I put his socks on this morning.'** Users spoke of 'The stress of a difficult boss', 'The pain of unrequited love', 'low self-worth and self-

esteem', 'depression or mental health problems', and a variety of 'health problems', including, **'Headaches…recent MRI…Have heart problems – not good circumstances for the stressed life of a student…Tachycardia and arrhythmia'**; **'very minor health problems; I'm recovering from a bout of flu'**; **'Low thyroid and been through the menopause; I still get lots of symptoms and am on HRT.'**; **'My neck – accident, 2 months ago, pain hasn't gone away and it's just getting worse. It wasn't a nice situation either.'**

Users described what the 'cultural experience of contemplation' gave them as:

'It was peaceful. It calmed me down. Thoughts about Art generally, should consider watching/looking at Art more. We should watch or look at Art more often. It gives you unpredictable feelings, for example, I thought about my family, my relationship, people – even though there were no people in the photo.'

'A certain sense of relaxation.'

'Just time to myself, 'cos I can be quite busy and I'm in a relationship. I find it quite difficult to find time to just sit and be with myself. Sometimes I try to escape from my thoughts, so it makes you concentrate on them.'

'Just to be able to be quiet in a room, enjoy a painting as a work of art.'

'Additional time to reflect outside of my daily activities.'

'Sanity. Keeps me grounded. Puts things in perspective. Life in context. Balancing. Mentally healthy place to be; calms your senses.'

'Took me back to childhood, to when I was 20-40 and what I'd gone through, and where I am now.' **

'Time to reflect on myself. Time to do nothing, which is quite rare.'

'I don't know. Not a lot. I don't think (that) I'm a very contemplative person. I was thinking of my grandson, a couple of months old – a new recruit to the family,'

'Time to think. Space. When you're at work, so busy…a little bit of space allows you to think about things sensibly. To think about other things, other than work. You don't often sit down and look at someone else's work. In a gallery, you wander around and then sit down with a great work of art, but that's a rarity.'

'Time to reflect. Enjoyed the silence…feel a little bit better.'

'Best thing was a new environment, because it helps & it shakes you up a bit. Change is so good – relaxing – a restful change.'

'It did make me feel relaxed. A very calming image; possibly a really sad image as well. Very empty; it looked like the room had been abandoned. I am mainly talking about the room with the chest in; that was the one [artwork] I was interested in. It made me wonder whose chest it was; it had initials, 'S' something. I used to live in an older property. It makes me think how much more relaxed we were, living in that property, than we are now. In a way, my life was much simpler, when I was living at that property. Maybe that's an illusion, that I was more relaxed. No electronic gadgets. Maybe that's why I picked that picture?'

The '15 minutes experience' of sitting alone in a room in the Silk Mill, contemplating an artwork was 'culturally valuable' because:

'**You appreciate art, the painting and photos you could see; it gives you unforgettable feelings and experience.'**

'It has, because I don't look at art, and it deserves to be appreciated. Especially with the painting, 'cos someone painted it, and it's their feelings that are going into it.'

'It's promoted an opportunity for me to contemplate with my focus on something I wouldn't normally look at, and in a setting that I wouldn't normally find myself meditating in.'

'It's a benefit to others and has a deeper meaning to our cultural understanding of our health and well-being. Benefits us to become more calm.'

'I never had this opportunity as a young person. I'm getting old, and using this opportunity to share my feelings – not to speak to anyone.'

** Sample 2 – 28-38

'Yes, I'll definitely remember it. It is nice to be asked questions about myself.'

'Yes, because I've looked at things that I've not looked at before in any detail. You just don't look. Looked at shapes…'

'**Yes. It has opened my mind. The questionnaire has made me think.'**

'Valuable in that it reinforced my connection to thinking about movement in relation to the natural movement of the world – it encourages thinking.'

'Yes. Foul mood when I went in and come out better - …

'Yes. I don't know. It has cemented my love of old things – museums and old houses. They take me back to a time, when life was simpler. Art speaks to you; and it is a major contribution to wellbeing.'

'No, I know my culture, and I think that culture is from outside, from doing things, not from looking at things.'

Some Conclusions and Implications of this Research

'We saw a highly significant increase in sIgA in some participants, which means that they got an immune system boost!' Dr Heidi Sowter, Reader in Oncology, Biological and Forensic Science, University of Derby, UK

Serious Personal Testimony

'Arts on prescription', where people are referred to cultural organizations
A demand for Evidence-based practice, as part of the evaluation of the impact of cultural activities on health
A 'culture and health framework', delivering health interventions in an innovative, radical way that engages local public health, museums and galleries, in order to address the needs of the local community

It is clear from the 'serious personal testimony' of the users (from the Qualitative Interviews data set), and from the 'Evidence-based practice' of this scientific experiment, that the contemplation of a cultural exhibit can improve mood and a sense of well-being; that reverie in the museum and gallery can support positive health for the individual. We holistically assessed and tested the mind/body/spirit of the individual user, within the wider context of the impact of cultural activities on health and their contribution to Eudemonic wellbeing. The hypothesis is proven: **A cultural**

experience of 'reverie'/contemplation/meditation affords a positive health experience for the individual.

We would now like to conduct a larger study across the cultural houses of the city of Derby, working with the health authority and city council.