Arousal and Mood as Factors in Using the Arts for Wellness and Medical Outcomes.

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Abstract

This paper draws together converging threads from several areas of research that seem to indicate that mood and arousal are potentially important factors in human performance and well being. A mood/arousal perspective for further research is advocated.

Key words : mood, arousal, performance enhancement, expressive therapy, arts in medicine

The Mozart Affair

When a startling discovery is found to be less reliable than originally thought, it is not uncommon for the whole discovery to be discounted in the public mind. A recent example of this has been the so-called "Mozart effect." The "Mozart effect" refers to a belief that listening to music of Mozart causes people perform better, specifically on tests or activities. World media seized the story, in some cases claiming that listening to Mozart can make you smarter (e.g. NBC News, 1994 and Holden, 1994). Suddenly books and musical collections were being peddled, all based on this, presumably, scientific discovery. A recent web search of the Mozart effect returned over 15,000 references. Donald Campbell, who has written on the Mozart effect, and appears in a NHK special about music therapy, has the following statement on a web site dedicated to the Mozart effect,

"The Mozart Effect is an inclusive term signifying the transformational powers of music in health, education, and well-being. It represents the general use of music to reduce stress, depression, or anxiety; induce relaxation or sleep; activate the body; and improve memory or awareness. Innovative and experimental uses of music and sound can improve listening disorders, dyslexia, attention deficit disorder, autism, and other mental and physical disorders and injuries. " (source: www.mozarteffect.com)

Some people thought it too good to be true, while others became true believers. The claims, it turns out, are a consequence of distortions and misunderstanding. The original experiment by Rauscher, Shaw, and Ky (1993) was considerably more modest in its claims. They found that listening to Mozart caused a brief improvement in spatial abilities on a standardized test that was used with college students. The experiment was replicated by the same team (Rauscher, Shaw, and Ky, 1995), and by additional researchers (Chabris, 1999; Hetland, 2000), but other researchers could not replicate the experiment (most notably Steele, Bass, & Crook 1999). Rauscher and Shaw have pointed out that Steele, et al (1999) was not an exact replication and that the differences in the experiments may have confounded the findings (see article by Reena Shah, available at: www.newu.uci.edu). Chabris (1999) suspected by the reason for the effect was due to arousal. Subsequently, Thompson, Schellenberg and Husain (2001) investigated whether the Mozart effect was attributable to arousal and mood factors and found that the effect was indeed

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attributable to arousal and mood. The Thompson, et al. (2001) study and Schellenberg's subsequent writings are known primarily to psychologists and may be unknown to the many people who have an investment in the Mozart effect.

Mood and Arousal Studies

The Mozart effect has been discredited in large part because of the exaggerated claims of its supporters. There was never a profound effect. There were very interesting short-term effects that were reported and those effects, as shown by Thompson et.al. (2001), are in line with a body of literature on the effects of mood and arousal on performance. Listening to a specific piece of music, such as Mozart's "Sonata for Two Pianos in D Major," will not raise one's IQ, nor will it greatly effect the psyche or the body. As with other hoaxes, the Mozart effect has become something to not take seriously. What eventually was found was that if you like Mozart and the piece you listen to makes you happy or more energetic, then, and only then, will you benefit from it. Sadly, what was lost in the media circus surrounding the Mozart effect was an appreciation how mood and arousal can effect a person's well being. Not brought out in the media were what Thompson, et. al. (2001) referred to as "well established" evidence that changes in mood and arousal can result in enhanced or diminished performance. For example, it has been established that fear and anxiety have been found to negatively influence cognitive performance (Sarason, 1980) and that positive moods improve cognitive performance (Ashby, Isen & Turken, 1999). There are also reports of mood influences on memory (Balch, Myers, & Papotto, 1999; Eich & Metcalfe, 1989). The attention given to sensational aspects of the Mozart effect has served to obscure well-informed studies about how mood and arousal effects human performance. An example of clinical value of how mood effects performance can be taken from Balch, et al (1999) who observed that mood shifts in patients with bi-polar disorder could explain memory loss associated with that disorder.

Environmental Studies

Studies from environmental psychology have found that natural settings or artistic rendering of scenes from nature increase human recovery from stress, anxiety and even physical recovery after surgery (e.g. Friedrich, 1999; Ulrich 1999). One such study was Ulrich, Lunden & Eltinge (1993), in which pictures of natural scenes were placed for patient viewing in an intensive care unit in Sweden. In a this controlled study, those patients who could view the pictures of nature recovered from heart surgery more rapidly and needed less medication. Similarly, it was found in a Canadian study that patients with depression had shorter hospital stays when they were given rooms with more sunlight (Beauchemin and Hays, 1996). Beauchemin and Hays (1998) found that deaths from heart attacks were lower for patients in critical care areas that had more sunlight. Stress related to long-term exposure to noise does have a measurable effect on cognitive functioning. For example, Hygge, Evans & Bullinger (2002) found that the long term memory and reading ability of children living near airports were impaired due to aircraft noise, but when the environment was changed the children improved whereas children who previously were unexposed to aircraft noise showed impairment after living near an airport. Noise has been found to produce negative physical effects on patients in hospitals (Hilton, 1985). Just the presence or absence of windows has been found to impact on patient anxiety, depression and confusion (Keep, James, & Inman, 1980).

Although the environmental psychological literature emphasizes the viewing of nature or physical settings of institutions, many of these studies mention emotional responses in terms not unlike those used in mood and arousal literature. Standley (1986) and Menegazzi, Paris & Kersteen (1991) found that music in the hospital reduced anxiety and stress, especially for patients with pain complaints. In a presentation by Roger Ulrich, entitled "Evidence Based Environmental Design for Improving Medical Outcomes" (available: www.muhc.mcgill.ca), uses phrases such as "healthful social/emotional support"... "comfortable"... "annoyance"... "pleasant music"... "positive distractions." Are these reports of wellness

outcomes related to some longer-term impact of mood and arousal effects? Could mood and arousal effects provide an explanation for why the arts, arts therapies in general, and certain environments result in health and wellness outcomes?

To be sure, it is a considerable leap from the relatively fragile effects reported in the mood and arousal literature to the quite substantial claims that some types of art and natural scenes and other environmental items result in health and wellness outcomes. The literature on medical outcomes, for example, suggests that stress reduction is the underlying mechanism that causes people to recover better. Nevertheless, the discussions in these studies usually refer to how visual settings irritate or soothe people, something very akin to mood effects. Perhaps the most obvious difference between these studies is the time of exposure-- in the mood studies there are very brief exposures, but in the environmental studies the exposure is constant over an extended period of time. Direct linkage of these very different types of studies would be seemingly impossible. Nevertheless, there is an attractive, although intuitive, convergence that both short-term and long-term studies implicate that the relative pleasantness of features in the personal environment have been found to influence human functioning.

Art Motivating Art

If the foregoing body of evidence has not been convincing, there is one connection which is clearly observable-- that the arts help to facilitate other types of expression including expression through other art forms. At a recent workshop in Tokyo on Person-centered Arts Therapy by Natalie Rogers, I was able to observe first hand how arts-related activities (e.g. movement, drawing, clay work, vocalization) motivate subsequent activities (writing, conversation, other art activities). Rogers method itself is based upon what she calls the "creative connection"-- that using one art form will motivate deeper work in another art form (Rogers, 1993, 1999). Therapeutically, the use on art by the client will lead to deeper exploration when followed by use of another art form. In the workshop that I participated in, I was astonished by the remarkable quality of the work produced by the participants and the energy levels that were sustained over three days. It is an often stated belief in expressive arts therapy is that it is the process that is most important, and that the product is not intended as decorative or for evaluation as an art work. Nevertheless, the work I observed was stunning in many cases. Given that it was a very large workshop (70 participants) that was scheduled over a raining weekend, it is surprising that all of the participants were full of energy and in high spirits for the entire 38 hours of sessions and interactions during the weekend. Obviously, they were aroused. In retrospect, I see how the atmosphere of the workshop, the mood if you will, developed from the arts activities, just as Rogers maintains. If the movement and artwork had not altered mood and arousal states in the participants then such an outpouring would not have been possible. The participants were unblocked for a remarkably long period of time in fairly crowded conditions. Just to be in the mood to create that long was surprising, but that all of the many participants felt and produced creatively was truly remarkable.

Two months later I was privileged to attend the Forum on Caring for the Caregiver, Japan-U.S. Project. Much of the material presented at that forum was confirming that the use of the arts in a number of situations facilitates healing and facilitates deeper communication. Of particular relevance to the present topic, Nancy Pierce Morgan gave a presentation about the Georgetown University Medical Center Lombardi Cancer Center Arts and Humanities Program. Morgan talked pointedly about one aspect of the program, which she is involved in-- transformative language arts. Morgan maintained that the stress involved for both the patient with cancer and the family/caretakers was tremendous, yet it is precisely at times when people most need to express themselves that language fails. Either they can't bring themselves to communicate or it is that they simply cannot put their feelings into words. Morgan and her staff employ art-related activities that are then followed by a writing activity. She has found that the activities with arts help to soothe patients and caregivers so that when the writing activity begins these individuals are able to express themselves poignantly in writing. Although the words mood and

arousal were not used, it was clear that before the introduction of art-related activities these patients and their caregivers felt tense, anxious, afraid and distressed. It was only after the initial nonverbal self-expression took place that verbal expression came, and, at that, it came in creative writing context.

Conclusion

Many therapists prefer to think of their work as facilitating a release from an inner tension. Some may even feel that to suggest that the use of the arts causes a shift in mood and arousal states would be to trivialize the process. To the contrary, I believe that shifts in mood and arousal may be very difficult to achieve, but may also be a necessary component before any further therapeutic work can take place. Additionally, it is also possible that a mood and arousal factor may have methodological implications for both clinical work and for research into the effectiveness of expressive therapies. Mood and arousal are not trivial subjects, for as was learned from the environmental psychologists, these are life and death matters.

Where to go from here? Coping with stress is an immediate need in medical and wellness situations. Programs have developed to meet the needs of the people they serve, based on the best information available. Mood and arousal research in these settings could confirm much of what is already known from practice, but could also be extended to find additional or more effective ways of helping. There is a need for research based on the perspective of mood and arousal effects on health and well being, and I would propose that an excellent starting point would be to make use of the many mood/arousal measures that have been developed to date. The sad experience of the Mozart effect is not that a single composer's music, or even a type of music should fail to make our lives better; rather it is that the underlying potential was missed because of controversy. Music, indeed, has been found to help people.

References

Ashby, F, Isen, A., & Turken, A. A neuropsycholgical theroy of positive affect and its influence on cognition. Psychological Review, 106: 529-550.

Balch, W., Myers, D. & Papotto, C. Dimesions of mood in mood-dependent memory. Journal of Experimental Psychology: Learning, Memory, and Cognition. 25: 70-83. 1999.

Beauchemin, K. & Hays, P.Sunny hospital rooms expedite reccovery form severe and refractory depressions. Journal of Affective Disorders, 40: 49-51. 1996.

Beauchemin, K. & Hays, P. Dying in the dark: Sunshine, gender and outcomes in myocardial infarction. Journal of the royal society of Medicine, 91: 352-354. 1998.

Chabris, C. Prelude or requiem for the "Mozart effect"? Nature. 400: 826. 1999.

Eich, E. & Metcalfe, J. Mood dependent memory for internal versus external events. Journal of Experimental Psychology. 15: 443-455. 1989.

Hetland, L.Listening to music enhances spatial-temporal reasoning: Evidence for the "Mozart effect." Journal of Aesthetic Education. 34: 105-148. 2000.

Hilton, B. Noise in acute patient care areas. Research in Nursing & Health, 8: 283-291. 1985.

Holden, D. Smart music. Science. 266: 986.

Hygge,S., Evans, G. & Bullinger. M. Aprospective study of some effects of aircraft noise on cognitive perfomance in school children. Psychological Science. 13: 469-474. 2002.

Keep, P., James, J & Inman. Windows in the intensive therapy unit. Anesthesia, 35: 257-262. 1980.

Leather, P., Pyrgas, M., Beale, D. & Lawrence, C. Windows in the workplace: sunlight, view, and occupational stress. Environment and Behavior. 30: 739-762. 1997.

Menegazzi, J. Paris, P. & Kersteen, C. A randomized controlled trial of the use of music during laceration repair. Annals of Emergency Medicine, 20: 348-350. 1991.

Mozart Effect web site: www.mozarteffect.com

NBC News. Dateline NBC. September 1, 1994.

Rauscher, F., Shaw, G. & Ky, K. Music and spatial task performance. Nature. 365: 611. 1993.

Rauscher, F., Shaw, G. & Ky, K. Listening to Mozart enhances spatial-temporal reasoning: Towards a neurophysiological basis. Neuroscience Letters. 185: 44-47. 1995.

Rogers, N. the creative connection: Expressive arts as healing. Palo Alto, CA: science and Behavior Books. 1993

Sarason, I. Test anxiety: Theory, research, and applications. Hillsade, NJ: Erlbaum. 1980.

Shah, R. article on Mozart Effect. available at: www.newu.uci.edu)

Standley, J. Music research in medical/dental treatment: Meta-analysis and clinical applications. Journal of Music Therapy. XXII: 56-122. 1986.

Steele, K. Bass, K. & Crook, M. the mystery of the Mozart effect: Failure to replicate. Psychological Science. 10: 366-369. 1999.

Thompson, W., Schellenberg, E. & Husain, G. Arousal, mood, and the Mozart effect. Psychological Science. 12: 248-251. 2001.

Ulrich, R. View through a window may influence recovery from surgery. Science. 224: 420-421. 1984.

Ulrich, R. Effects of garden on health outcomes: Theory and outcomes. In C. Marcus & M. Barnes (Ed) Healing Gardens: Therapeutic Benefits and Design Recommendations. New York: John Wiley. 27-86. 1999.

Ulrich, R., Lunden, O., & Eltinge, J. Effects of exposure to nature and abstract pictures on patients recovering from heart surgery. Paper: Society for Psychophysiological Research, thirty-third meeting. Abstract available: Psychophysiology, 30: 7. 1993.

精神昂揚と気分
――心身の健康および医療成果を目的とした芸術の駆使における要因

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＜要約＞

複数の分野にまたがる研究において、精神昂揚および気分という要素が人間の行動や健康な生活において潜在的に重要な要因であるということが示唆されている。本稿では、この点における相似性を一つの研究枠の中に集約し議論することを試み、精神昂揚と気分という見地に基づく研究の必要性を主張する。

キーワード：気分、 精神昂揚、 行動における向上、 芸術療法、 医療における芸術