Dance psychology

Psychologist and dance expert Peter Lovatt looks at some extraordinary facts about dance, including its health benefits, its impacts on the way we problem-solve and the link between physical symmetry, sexual attraction and dance.

I have always been struck by the power of dance. Before I was a psychologist I was a professional dancer. Dancing made me feel relaxed and stress free, it helped me to think more clearly, and it felt like the most natural thing in the world to do.

As an academic psychologist I am trained to use experimental research methods to question hypotheses and to test the validity of theories in psychology. Dance psychology is all about turning these research methods into questions and theories about dance. It is the study of dance and dancers from a psychological perspective.

I've just claimed that 'dancing made me feel relaxed and stress free'. But is there any empirical evidence that dancing can actually change the way people feel? I've said that dancing 'helped me to think more clearly'. But can dancing actually change the way people think? And I've said that dancing 'felt like the most natural thing in the world'. But is this true? Is dancing really a natural behaviour?

Dance and depression

Dancing has the power to change the way people feel. There is a growing body of evidence which shows that dancing can improve the mood of people with both mild and severe depression.

Clinical depression

Koch et al. (2007) examined the effects of dance on people admitted to a psychiatric hospital with depression. They found that just one 30-minute session of dance was enough to reduce depressive symptoms and increase feelings of vitality (i.e. being full of energy, strong and healthy). The researchers used a lively, bouncy and uplifting circle dance to the music of 'Hava Nagila', a traditional Jewish folk song.

Of course, had the researchers used just one experimental condition, then they wouldn't have known whether the reduction in depression was due to the dancing, per se, or to the music. So in a separate condition they asked another group of patients with depression to sit and listen to 'Hava Nagila' and not dance. In this condition the patients actually became slightly more depressed. So it seems to be the case that dancing, independently of music, can reduce depression and increase feelings of vitality in a group of people with severe depression.

Mild depression

In another study, this one carried out in Korea, Jeong and colleagues (2005) examined...
whether a longer term programme of dance would lead to improvements in mood. Jeong et al. tested their theory using a group of 16-year-old girls who had mild, non-clinical symptoms of depression. The girls were divided into two groups. One group took part in three dance sessions a week for 12 weeks and the other group just carried on with their normal activities. The dance sessions were based on techniques of dance movement therapy and focused on aspects of body awareness, movement, and expressing feelings and images.

The researchers found that dancing led to a reduction in feelings of depression, anxiety and hostility, but there was no change for the girls who did not dance. Explanations given for this improvement in mood are that dancing may have its effect through physiological changes, leading to the girls becoming more physically relaxed, or through changes in the concentration of stress hormones circulating around their bodies.

What is interesting about both of these studies is that different types of dancing — something lively and energetic in the first study and something reflective and expressive in the second — both appear to have a positive impact on the mood of people with either severe or mild depression. It seems remarkable, also, that just one 30-minute session of dance is sufficient to lead to observable changes in mood.

**Dance and thinking**

In 1990 Madonna released a song called 'Vogue' whose opening line is 'Strike a pose'. The basic premise of the song is that if you want to escape the pain of life and be something else, something better, then you should lose yourself on the dance floor — the idea being that striking a pose can help you unlock your imagination.

Twenty years after the release of 'Vogue', a scientific study was published which seems to show that striking a pose really does change the way people think. Carney et al. (2010), researchers at Columbia and Harvard Universities, found that not only does striking a pose change the way people think, it also changes people on a physiological level too.

**Power posing**

Forty-two people were divided into two groups and the scientists made them stand or sit in a number of poses for just 2 minutes. The people in the first group were placed in high-power poses. A high-power pose is a way of standing or sitting that looks confident, relaxed and self-assured (e.g. leaning back in a chair, with your arms behind your head and feet up on the desk in front of you). The people in the second group were placed in 'low-power poses', which are poses that look closed and constricted (e.g. sitting on a chair with both feet flat on the floor with your hands crossed over your lap, or standing with your legs and arms crossed).

The scientists then measured three things:

**Power**

First, they asked the participants how 'powerful' and 'in charge' they felt. Those people who had been standing or sitting in high-power poses said that they felt more powerful and more in charge than those who'd been standing or sitting in low-power poses.

**Risk**

Second, they set the participants a 'risk-taking' gambling task. Imagine this. You’re given ten pounds and dice. You can either keep the money (the safe bet) or you can roll the dice (the high-risk bet). If you roll the dice and you get an odd number then you lose all the money. However, if you roll an even number you double your money and get £20.

The scientists found that 86% of those people who had been placed in the high-power poses took the high-risk bet, whereas only 60% of the people placed in the low-power pose took the high-risk bet. It seems to be the case that just standing or sitting in a particular pose for a couple of minutes is enough to change how powerful people feel and it also influences their risk-taking behaviour.

**Hormones**

Before the participants took up their poses they provided a saliva sample. These were tested for concentrations of the sex hormone testosterone and the stress hormone cortisol. It is thought that high testosterone is a marker of high dominance and that a high level of cortisol is a marker of low power. Once the participants had finished posing they provided a second saliva sample.

For people in the high-power posing group, their testosterone levels went up and their cortisol levels went down. The complete opposite happened for the people in the low-power posing group. Their testosterone levels went down and their cortisol levels went up. So, striking a pose affects how we think about ourselves and it also influences our hormonal state. Standing or sitting in a particular way for just 2 minutes has a profound effect on us.

As a dance psychologist I think this is an amazing finding. The way we hold our body affects the neurochemicals that regulate our behaviour. In my lab I have carried out studies into the effects of different types of
dancing. What I've found is that different forms of dancing can help people to solve different types of problems.

Dance and problem solving
Carine Lewis and I tested novice dancers on their ability to solve divergent and convergent problem-solving tasks before and after doing 15 minutes of either improvised dance or non-improvised (structured) dance. A divergent problem-solving task is one where there are multiple correct answers to a given problem. A convergent problem-solving task has just one correct answer.

We found that following a period of improvised dance there was an increase in scores on divergent thinking tasks but there was no change in convergent thinking tasks. However, following a period of non-improvised dance we observed that people were quicker to respond to convergent thinking tasks but there was no change to scores in divergent thinking tasks.

Dance can be seen as a natural human behaviour

We have interpreted these findings to suggest that body movement can influence flexibility of thought, such that unplanned movements release people from set patterns of thinking whereas structured movement can speed up cognitive processes underlying verbal and visual tasks. The evidence appears to show that dancing can change the way we think.

Dance and genetics
Unbelievable as it sounds, there appears to be a relationship between the symmetry of our physical features (e.g. the relative size of our two ears) and the way we dance. Researchers led by William M. Brown asked teenagers to dance freestyle in a laboratory. The scientist used motion-capture equipment to record the way people danced. They then measured the size of everyone’s ears, fingers, wrists, elbows, ankles, feet and knees. They were interested in the relative size of each body part on the left and the right side of the body. With this information they were able to calculate how physically symmetrical each person was.

They showed the dancing animations to a group of observers and asked them to rate how good or bad each person’s dancing was and found that the dancing of more symmetrical people was rated as better than the dancing of less symmetrical people.

It is thought that physical symmetry is an indicator of genetic quality and that physically symmetrical people are better-quality specimens than physically asymmetric people. There may well be evolutionary reasons why, when we are looking for a mate, we want to find a mate whose genetic make-up is compatible with, or complements, our own. If this is the case, then we need to have a way of signalling our genetic make-up. Perhaps dance serves this need. If physical symmetry is an indicator of genetic quality, and if the way we move signals that genetic quality and influences people’s perception of the quality of our dancing, then it seems that dancing is an entirely natural behaviour.

References

Peter Lovatt is a principal lecturer and reader in psychology at the University of Hertfordshire, where he runs the Dance Psychology Lab. Before starting his academic career he was a professional dancer.
Dance psychology

Look at my article on pages 18–20 and then try the following.

Quick tasks

1. In what way is dance different from other forms of physical exercise? You might consider one or two other forms of sport and/or exercise and make a list of all the similarities and differences between them and dance.
2. Not all styles of dancing are the same. Which styles of dance do you think might be good for a person’s mood? In your answer you should consider both men and women, people of different ages and people from different cultures.
3. How would you persuade people to dance to improve their health, mood or thinking styles?
4. Is it ethical to make people in hospital dance in the hope it will improve their mood?
5. If dance can help people to think more creatively, how could dance be introduced into a school classroom to help people learn subjects such as physics, history or maths?

Peter Lovatt shows you how to get more from his article

Investigations for you to try

6. Some people love to dance and others hate it! How would you design a study to measure people’s attitudes about dancing?
7. Find examples of newspaper articles that describe the relationship between dance and health. How have the newspaper editors treated the relationship between dance and health? Are they sceptical or enthusiastic? Are they willing to believe anything that is published in a scientific journal?
8. Find evidence that animals or birds engage in movement-based courtship displays. What are the similarities and differences to human movement-based courtship displays (dancing)?

Be thoughtful

9. Given the finding that standing in a particular pose for just two minutes influences a person’s risk-taking behaviour, how could this be applied in the real world to reduce the likelihood of people engaging in unwanted risky behaviour, such as driving dangerously, smoking or engaging in unsafe sex?
10. Are people from some cultural groups better dancers than others? Consider your answer in relation to the evolutionary psychology perspective that we dance to communicate our hormonal and genetic make-up.

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