Archimedes is particularly well-known for running naked down the street shouting Eureka (which means ‘I have found it’ in Greek). What prompted him to do this? The story is that Archimedes was asked by the King to establish whether a goldsmith had included any silver in his gold crown but to do so without melting or damaging the crown. Archimedes’s solution to this problem occurred to him while taking a bath. He observed that the water level in the bath rose when he got in and realized that the crown would displace a volume of water equal to the volume of the crown. From this he realized that he could calculate the density of the crown and thereby establish whether it contained silver (it would be less dense if it contained silver). Archimedes was so excited by his sudden insight that he ran naked into the streets shouting Eureka.

But which moods might facilitate such flashes (pardon the pun) of creativity and give you that Eureka moment? For example, was Archimedes’s creative insight aided by a relaxed mood induced by a long hot soak in the bath? Or was it spurred on by the anxiety he was feeling about finding a solution to the King’s problem? While it is fun to ponder such questions with regard to Archimedes, knowing how mood shapes creativity is actually important for our everyday lives. For example, creativity is needed by engineers to develop new product designs
and by shop employees to enhance customer service. Creativity is also needed by artists searching for a new way of depicting an idea and by musicians when trying to find a new melody or sound.

Numerous studies have tried to find out which moods make people more creative. Not all of these studies agree on the answer, so Baas and colleagues conducted a meta-analysis to identify the main trends in studies of mood and creativity. A meta-analysis uses the data from several studies to provide a statistical estimate of the strength and significance of a relationship between things. As the findings are based on many studies, you can be more confident that the reported relationship is not just due to a bias in one particular study. Their analysis suggests that mood influences creativity when it has a positive hedonic tone (i.e., is pleasant rather than unpleasant) and a high level of activation (i.e., when it involves alert, aroused mood states). Thus, moods such as happiness and joy which combine a positive hedonic tone with higher activation are typically associated with higher levels of creativity than moods which combine a positive hedonic tone with low activation (e.g., calm, relaxed) or moods that combine a negative hedonic tone with high activation (e.g., anxiety) or low activation (e.g., sadness).

**Creativity And Positive Activated Moods**

So why do positive activated moods such as happiness and joy increase creativity? First, moods with a positive hedonic tone (i.e., pleasurable) are thought to increase the amount and breadth of stored cognitive information available for processing, such that a person will be better able to combine information in novel and creative ways.
Positive moods may have this effect because they stimulate the release of dopamine in the brain, which increases the selection of different areas of knowledge.

Second, the activation level of a mood is thought to shape the capacity for complex thinking. Moods with a low level of activation (e.g., sadness, calmness) lead to greater inactivity, lower motivation, and a greater chance that the person will disregard information. Individuals in sad or calm moods may therefore be less likely to develop new ideas or to persist in the search for new ideas. However, if the activation level of a mood is too high (e.g., intense anger, anxiety or elation) then this tends to result in ‘tried and tested’ responses to situations. While this can be advantageous when a quick response is needed, such as in a threatening situation, it may inhibit the ability to respond in a novel way.

In fact, it appears that moods with a moderate level of activation are optimal for creativity, because they stimulate the search for alternative solutions, give better access to working memory, and facilitate the integration of information, thereby enabling more complex and creative thought.

In sum, when a person is in a positive and moderately activated mood, such as happiness, he or she is likely to have a higher level of cognitive flexibility and be more persistent in the search for new ideas. Being in any kind of positive mood may not be enough to promote creativity, because being in a calm and relaxed state may lower a person’s motivation and ability to access and integrate different sources of information.
Do Negative Moods Ever Play A Positive Role In Creativity?

Intriguingly, a number of studies provide evidence that negative moods might promote creativity. For example, Carsten De Dreu and colleagues conducted a study in which participants completed a short questionnaire about what moods they had felt so far that day. Participants then performed a brainstorming task which required them to develop ideas about how to improve university teaching. Participants’ creative behavior was rated in four ways: the number of ideas they had, the originality of their ideas, the flexibility of their ideas (i.e., were their ideas about different aspects of teaching), and their perseverance with ideas (i.e., the number of their ideas divided by number of aspects sampled).

The researchers found that positive activated moods such as happiness were associated with the number, originality, and flexibility of ideas. These results fit in with the general idea that positive moods promote creativity by enhancing cognitive flexibility. However, they also found that negative activated moods, such as fear, worry and anger, were positively associated with the number of ideas and with idea perseverance. Given that participants did not report very intense negative moods, these results suggest that negative moods with a moderate level of activation may promote creativity because they motivate people to look for new solutions and ideas to the problems that might be causing their negative feelings.
How Important Is Mood?

But how important are the effects of mood on creativity relative to other factors? Much research on creativity has focused on its relationship to general intelligence and personality\(^5\). Evidence indicates that general intelligence and personality traits, especially being open to experience, have a greater effect on creativity than mood. Knowledge is also of central importance to creative endeavours\(^6\). This suggests that while a positive mood may enhance creativity in areas you know something about, it probably won’t give you creative insights into areas of which you know little. In other words, no matter how good your mood, it is extremely unlikely that you will suddenly unlock the secrets of the atom if you don’t know much about particle physics. To return to the example at the beginning of this chapter, Archimedes’s sudden insight most likely resulted from his intelligence and mathematical knowledge, with his current mood playing a supportive role.

Summary

So which types of mood are most likely to give you that Eureka moment? Well, research suggests it is positive activated mood states such as happiness and joy. But whether such moods make you more likely to shout Eureka whilst running naked down the street is something that remains to be established by scientific study.

Practical Tips

- Getting yourself into a happy mood appears to be important when trying to generate original ideas. If
you are not in a good mood, or want to try to improve your mood, why not write a short story about what makes you feel happy or listen to music that makes you feel happy. Do this in a quiet place without distraction from others. You might also want to look at the chapter that asks, ‘Can I run myself happy?’

Further Information

Which Moods Give Eureka Moments?