

# Why do only humans weep?

## *Ad Vingerhoets*

*“Lorenzo! Hast thou ever weigh'd a sigh? Or studied the philosophy of tears? (A science, yet unlectur'd in our schools!) Hast thou descended deep into the breast, And seen their source? If not, descend with me, And trace these briny riv'lets to their springs.”*

This quote nicely represents the situation with respect to the study of tears as it was nearly 300 years ago, but today it is not really different. The study of tears is still in its infancy and it is still a lonely business.

That is in some way amazing because tears have fascinated humans since ancient times. In creation stories of ancient Egypt and classic Greece, the tears of the Gods were used to create humans. All over the world, tears are associated with fertility and new life, but also with purity and sincerity. In addition, in many cultures, people came and come together for common singing, praying, or weeping in times of adversity or after disasters, to promote the necessary social coherence.

Occasionally, there was also some limited interest by scholars, who debated about the origin of our emotional tears: did they come from hearts that were melting due to the hot passions? Or did they originate from the moist brains, so characteristic for the weak (children, females, old men). Others discussed about the capacity to weep of werewolves, witches, humans in afterlife, angels and God.

When I tell people about my fascination for tears, the reactions are very different: some react with interest, surprise and wonder, others with disbelief, and sometimes even a kind of reproach. You see

people think: can't you devote your time to more serious work. Apparently, I have some explaining to do, because people can hardly imagine why the study of tears is so intriguing and possibly important.

Three experiences triggered and fueled my fascination for this topic.

The first was a question at a party: "Did I, as a researcher in the area of stress and emotions, think that crying is healthy?" I did not know the answer, and therefore checked the scientific literature, but I could not find any relevant research, only musings. Some students overheard me sharing this story and quickly decided: well, then we shall be the first to conduct such a study. The findings of their modest study suggested that there was absolutely no relationship between the frequency of crying and self-reported health.

And that was it – or so I thought, until a few years later, it was a personal crying experience that rekindled my fascination for tears. It occurred when I was watching a film on television that had all characteristics to qualify it as a sentimental, "B-movie." It was ***A child's wish***, based on a true story, about a 16-year old girl (Missy) with cancer. The father lost his job because of taking too much time off to care for her and ultimately was responsible for the passage of the Family and Medical Leave Act in the US Congress. The Make-A-Wish Foundation allowed Missy to go to Washington DC, to visit the White House, and meet the president (Bill Clinton played himself).

Clinton welcomed her in his Oval Office and told her that this room is the place where he receives the most famous and important people from all over the world, but that he considered her as his most important guest ever.

This specific scene triggered a totally unexpected reaction in me: a real flood of tears. I was completely overwhelmed. And very

confused. What was happening here? Why did I show this excessive reaction?

Maybe you consider this reaction as just proof that I had turned into an old, sentimental, weak bloke, with too little testosterone in the blood. That is an understandable reaction, but haven't you ever had a similar experience? And how did you reflect on it and try to understand why you displayed that most curious behavior?

I felt that the study of these kinds of reactions might help us to obtain a better insight into who we, humans, really are.

A further stimulation was, when I read about Charles Darwin's denial of the usefulness of emotional tears. In 1872, thirteen years after *The Descent of Man*, Charles Darwin launched another most important book: *The expression of emotions in man and animals*. In this book, he emphasized the importance of the expression of emotions for our well-being. More precisely, in the concluding chapter he wrote:

### **Slide 1**

"The movements of expression in the face and body, whatever their origin may have been, are in themselves of much importance for our welfare. [.....] We readily perceive sympathy in others by their expression; our sufferings are thus mitigated and our pleasures increased; and mutual good feeling is thus strengthened."

But surprisingly, in a previous chapter in the same book devoted to weeping, his remarkable conclusion with respect to emotional tears was that they do **not** serve any function. Darwin described weeping literally as "purposeless".

For me as a scientist, it is, of course, a major challenge to prove that Darwin – at least in this respect - was totally wrong.

I strongly believe that emotional tears also have played an important role in our evolution and still do serve important functions. Without tears, we, humans, would never have become the empathic, ultra-social species that we currently are (i.e., that we take care for the sick, elderly, and disabled and that we can work together).

I hope to clarify this viewpoint further by focusing on the question: Why do only humans weep?, which I will consider in two different ways:

### **Slide 2**

1. Why do only humans, and no other animals, produce emotional tears?

### **Slide 3**

2. What are the causes and effects of crying (both on the crier him or herself and on others)?

Regarding the first perspective, i.e. why only humans and no other animals produce emotional tears, I am convinced that the key to the answer to this question lays in another unique human feature: our prolonged childhood.

### **Slides 4 + 5**

Compared to most other animals, human infants are extremely helpless. Since they are born immature, their brains keep developing during their life, until at least the age of 20-25. Most other animals, in contrast, are born ready-made and well-equipped with their physical appearance and their limited behavioral repertoire to survive in their specific normal living environment (for example the jungle, the desert, mountains, rain forest, etc.). The disadvantage, however, is

they are not flexible and can hardly adapt to changes in their natural habitats.

Human children with their continuously developing brains, in contrast, are real learning machines, with a great flexibility and adaptive power. They can easily adapt to a wide variety of situations and conditions. However, the downside is that human childhood is also a very vulnerable period, because children are still largely dependent on adults. Especially in this phase of life, tears are most important to elicit the necessary care, protection, and love from specific adults to make their full development possible.

Why tears and no vocal crying as all other mammals do? As soon as the infant is able to move towards a specific individual (e.g., the mother) for the necessary love, care and protection, the great advantage of silent tears (different than for vocal crying) is that this call for help can be aimed at a specific individual, without showing one's weakness to others, including possible predators or assaulters, and thus is much safer than vocal crying.

Regarding the second question - what kind of situations make us – humans – weep, the answer is: that depends.

### **Slide 6**

Age is important. As you can see, crying is a dynamic behavior, and its causes and triggers show some remarkable developments during life. Powerlessness, separations, and the loss of significant relationships, remain significant reasons to cry throughout life. On the other hand, crying over physical pain shows a remarkable decrease with advanced age, whereas empathic crying and sentimental (or moral) crying shows a strong increase. So, adults not only cry in negative situations, such as losses, failures and helplessness, but also in

opposite, positive situations, e.g., the intensification of relationships, all kinds of prosocial behaviors, and exceptional performances.

Apparently, once we are adults, tears also become exclamation marks, signals to ourselves, to remind us of our ultra-social nature and to stress the importance of good social and moral functioning.

They are no longer just a signal to others, but especially also to ourselves. Not just receiving help, but also prosocial and unselfish behavior, providing help is important.

### **Slides 7 + 8**

Concerning the effects of crying on the crying individual him or herself, we learned that the effects on mood depend on three factors:

(1) characteristics of the crier (depressed patients seldom report mood benefits),

(2) the specific nature of the cause (the extent to which we are in control over the situation), and,

(3) in particular, how others react to our tears. When others react with understanding and comfort, it is a completely different story than when they react with disapproval and anger.

### **Slide 9**

We further showed in our laboratory that it might take some time before the positive effects of crying manifest themselves.

### **Slides 10, 11, 12**

Finally, how does crying influence others? When we expose study participants to pictures of crying individuals, they reportedly experience more empathy, feel more connected to the depicted

individual, and are more willing to provide support than to the same individuals without tears. Visible tears thus make a **strong** difference on how we perceive others and tend to react to them.

So next time you (have to) cry, be aware of the power of tears, it might not really be healthy, but be comforted, not just by the weeping itself, but especially in the knowledge that you are doing something that has been so important in our evolution. And that is still important for our social and moral functioning. Tears connect and make us more human (get a tissue out of your pocket). Tissue anyone! ;)

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