102. THE PSYCHOLOGY OF TICKLING AND LAUGHING. G. S. Hall and A. Allen (American Journal of Psychology, 9, 1897, pp. 1-42).

The authors received reports from nearly 3,000 persons in response to a syllabus sent out. The analysis shows that in exceptional cases the first symptom or source of laughter may take place in almost any part of the body, but it is most frequent in the eyes and next in frequency at the mouth. The eyes become brighter, smaller and oscillate, and the mouth opens, stretches and curves upward, but sometimes downward. In some few cases the laugh begins with dimples in the cheeks; in others a movement of the muscles just below the ears; in others a throwing back of the head.

Subjectively, too, the "funny feeling" may begin in the stomach, throat, head, diaphragm, face etc. Sometimes beauty is evoked or increased, or ugliness is produced. The eyes are sometimes open, sometimes shut, sometimes grow dull, both lids may tremble and balls twitch. They may grow rigidly fixed or roll wildly, may be turned upward and inward and are often suffused with tears. The mouth, too, may take almost every variety of position, as does the eyes, and almost any sequence may be inverted.

In the height of laughter individual peculiarities become multiplied and emphasized. Two returns described laughter so intense that death from ruptured blood-vessels ensued.

The onset may be very gradual or instantaneous and explosive; and the omitted sounds may be almost any kind of noise, although *he he*, passing over to *ha ha*, are the usual. Some sob.

The after effects of a hearty laugh were described as exhaustion, heavy breathing, fatigue, shame, weakness, depression, soberness, sadness, relief, weakness localized in various parts of the body, the deep sighs, giddiness, perspiration, headache, stitch in the side, soreness, thirst, sweating, chills, sleepiness, uncontrollable movements, nausea, tears, fear of impending disaster, breathlessness, etc. On the whole, Dr. Hall remarks, the laugh is not unlike an epilepsy from the aura, at which stage it may be checked, to the subsequent exhaustion. In a number of cases laughter was evoked by news or sights really sad.

Dr. Hall refers to Brücke's experiments, showing that when the head is thrown back, shoulders up, and the body generally is bent backward, the blood tends to flow from the arteries, where pressure is high, into the veins, where pressure is low, and thus, he concludes, that "if laughter is more often associated with the later position, and crying with the former, this would go far to account for the subjective difference between the two and would connect the relief of a laugh with the remission of arterial tension. In the majority of adults it begins with the highest level in consciousness and the finer muscles, and passes down to lower levels and earlier developed musculature, although sometimes in children this order is exactly inverted."

From the returns children were found to be the most ticklish, as follows: Soles of feet, 117; under the arms, 104; neck, 86; under the chin, 76; waist and ribs, 60; cheeks, 58; knee, 25; down the back, 19; behind the ears, 15; palms, 14; corners of mouth, 8; breast, 8; nose, 7; legs, 5; elbows, 3; lips, 3, etc. Some of these children mentioned several places and so appear several times. Two small children are so ticklish they scream with laughter if touched. Mention of the word "soles" would, in some cases, cause slight tickling, and the mere pointing the finger in 107 cases. When near the cry-point, some children, otherwise very ticklish, are like stone to every stimulus. Some are ticklish only near bed time or when very tired. Sixty clearly marked cases were ticklish when "happy" or "unwell," or "after a good meal," "when perfectly well," etc., and their susceptibility, through the different senses, varied greatly.

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