Emotion detection: a multi-billion market with very shaky scientific substance.
The individual context is more important than artificial intelligence recognizes.

In July 2019, a meta-analysis completed by emotion researchers regarding the reliability of and/or the excessively high error rates of automated emotional monitoring was published which found worldwide resonance. This did not include the German trade press for market and brand research, however. (Sources at end)

In BrainCandys 35 and 36 I reported in detail that emotions do not manifest themselves reliably in any standardised physical representations. On the one hand, our emotions are not simply joy or anger, but can also range from a gossamer feeling to exuberant outbursts of emotion. And we have all learned how to adapt our behaviour to specific situations. The context influences our behaviour. We can be boiling with rage inside, but we can also signal ice-cold rage or indulge in explosive outbursts of rage in an unrestrained way or even deliberately.

In the world of market research things are far more difficult for us anyway, because brands and advertising only trigger weak emotional reactions, if at all. There is always, of course, the promise that weak emotions can still be measured in the form of minimal eye movements, or very cleverly, in the form of micro-level muscle movements in the face. If the basic assumption is already wrong, however, the particularly fine measurement is obviously nothing more than a smokescreen for hopeful customers.

The Washington Post writes the following about the study¹: “In just a handful of years, the business of emotion detection — using artificial intelligence to identify how people are feeling — has moved beyond the stuff of science fiction to a $20 billion industry. Companies such as IBM and Microsoft tout software that can analyze facial expressions and match them to certain emotions, a would-be superpower that companies could use to tell how customers respond to a new product or how a job candidate is feeling during an interview. But a far-reaching review of emotion research finds that the science underlying these technologies is deeply flawed.”
The problem? You can’t reliably judge how someone feels from what their face is doing.

The group of scientists brought together by the Association for Psychological Science spent two years exploring this idea. After reviewing more than 1,000 studies, the five researchers concluded that the relationship between facial expression and emotion is nebulous, convoluted and far from universal.

In their comprehensive review, these leading experts from the worlds of psychology, neuroscience and information technology made the following comments:

“It is not possible to confidently infer happiness from a smile, anger from a scowl, or sadness from a frown, as much of current technology tries to do when applying what are mistakenly believed to be the scientific facts.”

“About 20 to 30 percent of the time, people make the expected facial expression, such as smiling when happy,” said Lisa Feldman Barrett, a professor of psychology at Northeastern University.

In other words: in most cases, they aren’t doing what we expect them to do according to our clean-cut understanding of the situation. Full stop. How should one detect patterns if the right pattern occurs much less often than the ‘wrong’ one?

It isn’t so surprising that something as complex and as learned (!) as human emotions defy a straightforward classification.

According to the Washington Post, Microsoft declined to comment on how or whether this review would affect their approach to emotion detection.

My conclusion: I believe that in the medium term at the earliest, we can be sure of a more accurate deriving of emotions – and even this won’t be an easy undertaking. The scientists will have to collect a great deal of data from each individual simultaneously (e.g. face, changes in the tone of voice, posture, head movements, skin resistance, brain waves, etc.). Therefore, purely observational applications can be ruled out. (As a private individual, this is something one should be happy about). In addition, the software must also learn the individual response profile with every application first, and in specific contexts/situations. Therefore, it might never become the straightforward method which it is being praised today.

Therefore, please mistrust all the promises of a supposedly objective evaluation of your new marketing ideas. We ourselves invest a lot of energy into the work with brain waves (EEG), we secured generous funding, and we were ultimately sobered by the non-replicable results. After all, emotion doesn’t only take place at certain places, but is a network in the whole of the brain – which is linked together individually.

We now know that we could have saved ourselves the effort – we followed a beautiful mirage. If the theoretical basis is flawed, then the measured results are as well. In this respect, no amount of artificial intelligence can help.
Quellen:

https://www.sciencedaily.com/releases/2019/07/190718085318.htm

https://journals.sagepub.com/stoken/default+domain/10.1177%2F1529100619832930-FREE/pdf

Book recommendation:
By Ralph Ohnemus:

Markenerleben. Die Strategie im Hyperwettbewerb und Informationstsunami > hier bestellen

Markenstaunen. Gewinnen im Informationstsunami > hier bestellen

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