Reply on James Wright article - VibraImage: how suspect AI are increasingly used to profile people from their head vibrations

As vibraimage technology developer during last 20 years, I feel different emotions reading James Wright article about vibraimage. I think this article could be interesting for readers and open actual questions of behavior detection ethics. However, there are some misunderstanding or mistakes in this article that need to be mention.

Firstly about the mistakes. **Vibraimage technology is not AI technology.** It is not correct to mix vibraimage and AI because vibraimage is based on understandable physics&cybernetics&physiology principles and transparent equations for emotions calculations, see the first vibraimage patent and basic publications

https://patents.google.com/patent/US7346227B2/en

https://www.researchgate.net/publication/327306560_Vibraimage

https://www.researchgate.net/publication/329214081_Vibraimage_and_Multiple_Intelligences

https://www.researchgate.net/publication/339044452_Vibraimage_Cybernetics_and_Emotions

Now passed more than 20 years from this patent priority date, so it is open for worldwide users. Until this time, we published 7 patents on vibraimage technology development and all this patents are transparent for testing, so it is also incorrect to say that vibraimage has algorithmic opacity. Vibraimage technology is similar to EEG technology. EEG studies electrical activity of head-brain, vibraimage studies movement activity of a head. There are correlation between EEG signals and vibraimage signals for people with deviations from normal psychophysiological state.

The second mistake of James Wright is noting that vibraimage technology using AI for behavior detection and emotion recognition. **Vibraimage solutions do not use AI in behavior detection.** AI solutions request learning and for learning needs to have a big data and clear rules for database discrimination. This combination is ok for medical diagnostics (there are standard medical tests for learning) and is not acceptable for behavior detection by vibraimage technology plus AI.

https://www.researchgate.net/publication/350276927_Behavioral_Parameters_as_COVID-19_Signs_New_Opportunities_and_Old_Problems_of_Medical_Diagnostics

https://m.scirp.org/papers/106293

For behavior detection and emotion recognition there are no world-wide standards and is impossible to learn AI solution to discriminate databases by the other

algorithm then vibraimage and there are no so much high-quality video data of suspicious people detection. The science status of emotions and behavior detection is open and discussed from different positions

https://www.researchgate.net/publication/ 350978491_Evolution_Emotion_and_Facial_Behavior_A_21_st_-Century_View

I explained the relations between vibraimage, cybernetics and emotions in said monograph

https://www.researchgate.net/publication/ 339044452_Vibraimage_Cybernetics_and_Emotions

This study is based on about 15000 people testing in different psychophysiological state (relax, normal, aggressive) and shows distributions and dependences of 16 emotional and behavior parameters measured by vibraimage technology. Given 16 equations for emotion measurement and calculations like any other physical dependences. The emotion parameters database publicly available. http:// www.psymaker.com/downloads/CyberVibraV2.zip

The third mistake of James Wright is mixing AI processing problems and behavior detection status. **There are no reasons to combine AI properties and behavior detection science status in one package.** I replied on it before

https://www.researchgate.net/publication/ 344476055_Suspect_Inquisition_Reply_to_Suspect_AI_Vibraimage_Emotion_Re cognition_Technology_and_Algorithmic_Opacity

AI processing has real opacity in taking a solution because it is impossible to control hidden ANN layers. It is one of the principle property of ANN and AI. However AI processing has so much advantages that AI have more and more applications. For example Artificial Intelligence Computing and Applications for COVID-19

https://www.researchgate.net/project/Special-Issue-of-Applied-Sciences- ISSN-2076-3417-Impact-Factor-2474-Artificial-Intelligence-Computing-and- Applications-for-COVID-19

Also AI opacity is not so important, because AI solutions are usually tested on big databases and have calculated error rates. All technical systems has errors not only AI systems and in most part of AI applications errors are less than other technical systems errors.

In opposite to AI, vibraimage solution in behavior detection are transparent, in every case we see the detail reasons for abnormal behavior linked with vibraimage parameters deviation from statistics norms more than 2SD. This is standard approach used in physics and math statistics transferred to behavioral parameters.

The main feature for any physical or technical solution is error rate and these error rates could be calculated in transparent comparative testing as it is usually done for biometric identifications solutions.

https://www.nist.gov/speech-testimony/standards-biometric-technologies

Currently vibraimage does not use AI functions for behavior detection and emotion recognition. However we will include AI processing to vibraimage technology to behavior detection when we will have technical necessity for it. Possible EU limitations to AI in behavior detection gives only competitors advantages to China and Russian teams in this field. It does not matter what algorithm is inside the system (equations processing or AI) only errors has matter. So if James Wright want to limit technical solutions for behavior detection is more correct to speak about technical profiling combining AI and direct measurement algorithms.

Discussion

There are many subjective reasons for different people do not accept vibraimage. Contactless and simple technology of psychophysiological detection looks so fantastic that supposed to be fake. In addition, it made in Russia that add negative association with modern Russia in the world. Also vibraimage damages traditional conceptions in several science fields like medicine, psychophysiological detection and emotions recognition

https://www.researchgate.net/publication/350276927_Behavioral_Parameters_as_COVID-19_Signs_New_Opportunities_and_Old_Problems_of_Medical_Diagnostics

https://www.researchgate.net/publication/351482935_Psychophysiology_and_Homeokinesis_Synchronization_of_Stimuli_Presentation_to_Chronobiological_Processes

Of course, said reasons and competitors give many opponents to vibraimage. I do not want to convince anybody. My task is to do vibraimage technology better, so to develop programs operating faster and do fewer errors in processing. Great psychologist Carl Jung said that introvert and extraversion person never understand each other. We develop vibraimage technology based on physical laws, cybernetics and information theory. Physical laws as Newton's laws are identical in UK and Russia. Physical laws are objective; ethics norms are subjective, different in different countries and it is impossible to have one ethics for all the world. We studied ethnic identity in multiple intelligences profiles in Japan, Iran and Russia https://psymaker.com/downloads/ppt/3/EnEdition/4NikolaenkoEng.pdf

James Wright is specialist in ethics and my specialization is physics and information, so based on Jung approach we have different view to the same object. There is a great scientist in UK, Roger Penrose, having Nobel Prize in past year for

the discovery that black hole formation is a robust prediction of the general theory of relativity https://en.wikipedia.org/wiki/Roger_Penrose

In my understanding Roger Penrose was worthy of receiving a Nobel Prize earlier for the number of his work in the physics of consciousness. https://en.wikipedia.org/wiki/The_Large,_the_Small_and_the_Human_Mind

The physics of consciousness claimed by Penrose with quantum vibrations in microtubules is more near to vibraimage technology than ethics questions and maybe empirical measurements from vibraimage technology are the results of Penrose theory of quantum gravity effects in microtubules.

I do not see the problem that vibraimage results do not correlate with some methods of psychological testing. It is normal situation and there are several reasons on it. The main reason is that conscious and unconscious responses to stimuli have different nature, vibraimage calculates both responses, however the most part of psychological testing calculates only conscious responses and the most part of psychophysiological testing calculates only unconscious responses. From the other side we see more and more independent publications showing high level of correlation between vibraimage results and results of well-known psychological or psychophysiological tests.

https://psymaker.com/downloads/ppt/3/EnEdition/17KosenkovEng.pdf

https://psymaker.com/downloads/ppt/4/EN/VIBRA2021_08en.pdf

https://psymaker.com/downloads/ppt/4/EN/VIBRA2021_12en.pdf

In conclusion, I can only note that vibraimage as technical profiling (behavior detection) system captures and processes real physical effects having place in human consciousness and unconscious. To reject vibraimage results is the same as to reject Newton laws because of ethical principles. You can try to do it, however you cannot stop apple to fall.

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