

## **Class Notes: Oct 25, 2024**

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#### ***Literature Review (for course project)***

Not just summarizing paper

Need to examine diverse perspectives

Researching gaps in papers and criticizing sources.

Determining whether the literature is credible and useful for public policy application.

#### ***Science and Historical Beliefs:***

- **Victorian Roots of Facial Recognition:** This idea has pseudoscientific origins. The popular article from "Real Life" magazine explores these Victorian-era beliefs.
- In ancient times, science was known as "natural philosophy", though it had no evidentiary basis even by today's standards. Astrology and alchemy were once considered sciences until modern skepticism introduced the criteria of falsifiability.
- Darwin's Work: Darwin's "Expression of Emotions in Man and Animals" hypothesized that the face can reveal emotions, a construct that shifted away from previous thinking such as pathognomy; according to this, the shape of the skull could explain character. Pathognomy was shortly repudiated because individual features change over time, creating an early stage of scientific critical thinking.

#### ***Pseudoscience and Physiognomy***

- **Physiognomy:** The belief in judging character by facial expressions, as proposed by Darwin, was a replacement for pathognomy. However, it remains a pseudoscience because character is complex, internal, and influenced by social context.
- Today's AI-based emotion recognition mirrors physiognomy by attempting to classify people's emotions based on facial features, which oversimplifies expressions that depend on individual and cultural factors.

#### ***Modern Emotion Detection Technology:***

- Although pseudoscientific, AI emotion detection technology is marketed for financial and political purposes.
- Issues with this technology include that emotional expressions vary by individual and cultural context, making it difficult to accurately gauge true emotions.

#### ***Social and Political Impact:***

- At times, emotion-reading technology hints at the power dynamic of colonial or authoritarian practices.
- Well, here during colonial times people were classified for control by the government, like in the Criminal Tribes Act, which termed certain communities as born criminals. Similar ideas are in existence today with certain groups monitored under categories and identified as potential risk elements.

#### ***Key Terms and Concepts:***

- **Essentialism:** The outdated belief that human qualities are fixed and inherent, often used to justify racism and stereotyping.
- **Affective Computing:** Technology designed to recognize and simulate human emotions, which is often used in surveillance.
- **Computational Physiognomy:** A modern term critiquing AI-based emotion detection for trying to read character from facial expressions, similar to outdated physiognomic practices.

***Reflection of Science and AI Ethics:***

- AI-based emotion recognition is essentially control-driven and surveillance-oriented. It raises the issues of question around privacy and personal freedom.
- These tensions of technological capability and scientific validity are most evident within the growing move to bring emotion recognition into AI, whose foundations are based on debunked pseudoscientific methods.