

PS 643

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1 Understanding Science and Knowledge

- **Science vs. Superstition:** Early knowledge systems (like astrology and alchemy) were once considered valid science.
- **Evolution of Science:**
 - Science, or “natural philosophy,” became systematized in the 17th century.
 - **Falsifiability:** Modern science requires hypotheses that can be empirically tested and proven false.
 - **Theory and Hypothesis:** Scientific theories must be tested through observation and prediction.

2 Pseudo-sciences in History

- **Essentialism:** The belief that characteristics of people (like race) are fixed and unchangeable. This idea has been debunked but influenced historical beliefs and practices.
- **Examples:**
 - **Phrenology:** Judging character based on skull shape.
 - **Physiognomy:** Assessing character based on facial expressions.

3 Modern Technology and Emotion Detection

- **History of Emotion Detection:** Charles Darwin’s early work suggested that emotions could be inferred from facial expressions, a theory now largely disproven.
- **Challenges in Emotion Detection:**
 - Emotions and expressions are influenced by social, cultural, and contextual factors.
 - Facial expression is not a universal indicator of emotion.
- **Implications of Emotion Detection Technology:**
 - Technology to detect emotions is often misused, especially by those in power.
 - Emotion detection can be used as a form of surveillance, which raises ethical concerns about privacy and autonomy.

4 Social and Political Impact of Technology

- **Power Dynamics:** Technology that assesses emotions or intentions may disproportionately impact vulnerable groups.
- **Ethics in AI:** Today’s AI-driven emotion detection mirrors colonial practices of measurement and surveillance.

5 Historical Context of Surveillance and Control

- **Colonialism and Surveillance:** British colonial administration relied on extensive data collection and categorization of people.
- **Criminal Tribes Act:** A historical example of how certain groups were targeted and stigmatized, practices that lingered post-colonialism.

6 The Role of Empirical Science

- **Evolution:** Charles Darwin's theory of natural selection provides a foundational example of how empirical science progresses by testing and revising ideas.
- **Natural Selection:** Contrary to common misconceptions, evolution occurs through random mutation and survival, not direct adaptation by choice.

7 Reflection on Emotion Detection

- **Limitations:** Emotion is contextual, and facial expressions vary widely between individuals and cultures.
- **Current Research Challenges:** Researchers must account for social dynamics and avoid oversimplified interpretations of human behavior.