Eigenface: The image and the machine

Lee-Morrison, Lila

2015

Link to publication

Citation for published version (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
Eigenface: The image and the machine

The Berkeley Conference on Precarious Aesthetics
UC Berkeley, October 15-17, 2015

Lila Lee-Morrison
PhD candidate, Lund University
Division of Art History and Visual Studies
lila.lee-morrison@kultur.lu.se

Abstract

Contemporary applications of machine vision involve processes that often obscure human perception. An example is the use of biometrics, a family of advanced visual technologies, most often used at national border controls to identify and/or validate a person's legal and national status through a visual scanning of parts of the body. This paper examines a specific imaging process within biometric technologies, the automated facial recognition technique called eigenface through a relationship to aesthetic practices within art production. The technique of eigenface presents a paradox between clarity and obscuration, in its function to make concrete security risks within the geopolitical context of its use, while on the other hand, doing so through a process of visual abstraction.

Eigenface involves a process of flattening the physical topography of the human face through a spectral decomposition of light and shadow, rendering the image of the face completely blurred. This is then matched against a set of eigenface templates of so-called standardized face ingredients. The differentiation between the individual facial image and the templates is expressed in numerical values and entered into a database as a record of identification for the individual. In my paper, this process of revealing a form of clarity, i.e, the identification of an individual, through multiplicity is explored further through the motif of composite portraits within the aesthetic realm.

Of particular interest are the photographic experiments by Ludwig Wittgenstein done in the 1920s and the contemporary artwork Delegations by Ali Maiharbi. Wittgenstein, referencing
the composite portraiture technique of racial and ethnic identification of Francis Galton, referred to them as a 'picture of probability'.\(^1\) Rather in an inverse approach to the concretizing function of both the eigenface and Galton’s work, Wittgenstein saw all manners of possibilities to be represented in the fuzziness.\(^2\) Maiharbi’s work directly deals with eigenface through a deconstruction of the functional logic behind identity and identification politics associated with its application. He does so in the context of problematizing electoral representation in politics by producing eigenfaces of the viewer of his work, set against templates made from the faces of members of parliament.

Eigenface can be understood as a contemporary production of, what Vilem Flusser has termed, the technical image, which functions ‘to make concrete’ that which has become abstract.\(^3\) Positioned at the interface between human and machine vision, the eigenface image represents a paradox within contemporary modes of visualization, simultaneously countering and revealing human perception in the digital age.

---

