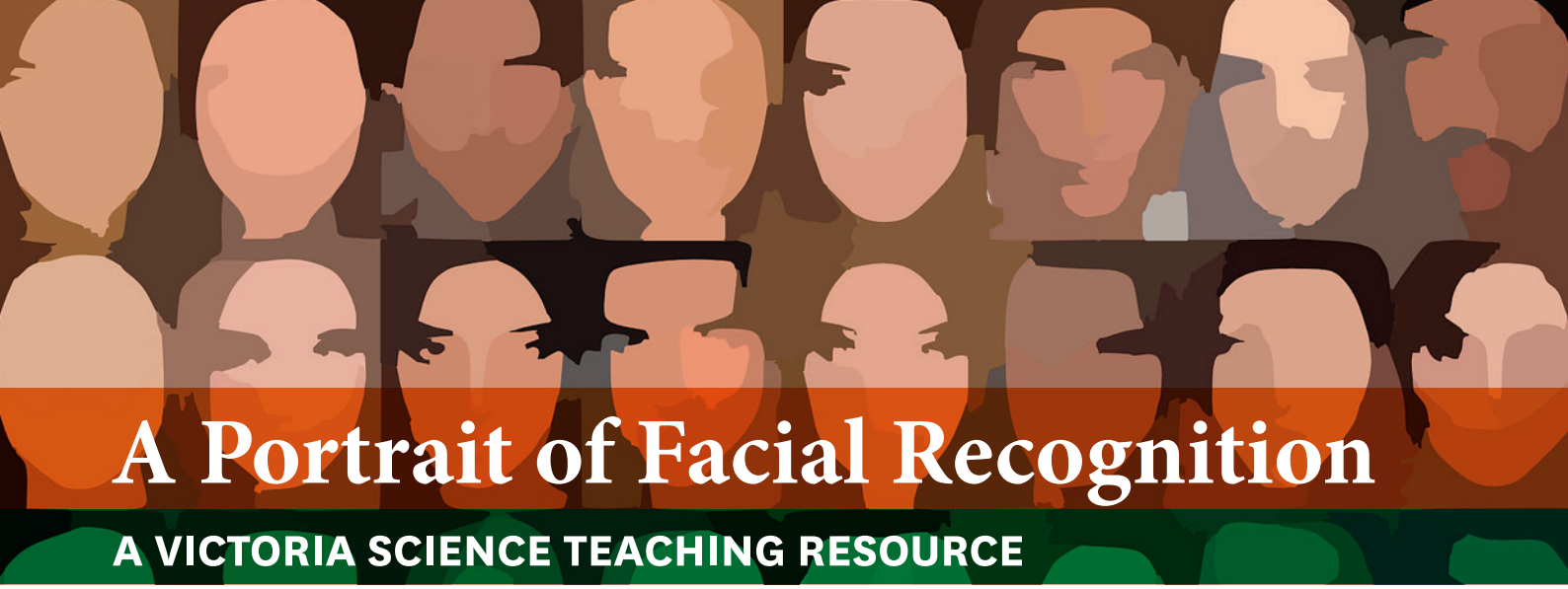

A Portrait of Facial Recognition

A VICTORIA SCIENCE TEACHING RESOURCE

WHO?

Researchers Dr. Christel Devue and Associate Professor Gina Grimshaw from Victoria University's School of Psychology

WHAT ARE THEY INVESTIGATING?

Being able to recognise faces is vital to our social interactions, and yet not everyone has the same level of ability. Some people might be able to recognise someone after only meeting them once, while other people are completely unable to remember faces (this is called prosopagnosia or 'face blindness'). Portrait artists are one group that display a better than average ability to process faces. The question is, do professional portrait artists get better at facial processing as they practice, or are they more likely to become professional portrait artists due to pre-existing ability?

WHAT'S THE HYPOTHESIS?

If portrait artists benefit from pre-existing advantages with face processing, there should be a positive relationship between face processing skills and the ability to draw faithful portraits in people who have no practice in drawing.

- Before reading on, design your own study to test this hypothesis.

HOW DID THEY TEST IT?

First, they conducted new analyses of data from two previously conducted studies (common practice for researchers), and then performed their own follow-up study to confirm the results.

In all three studies, participants were directed to draw a picture of the same woman's face, as well as a picture of a house. Once they had completed the pictures, they took a number of facial recognition tests including the Cambridge Face Perception Test. The pictures were then judged for faithfulness (how closely it resembled the model) and artistic quality by a panel of judges with no expertise in drawing.

Study 1
Drawings by 11 artists and 11 novices were used to test the association between face processing and artistic ability. These were judged by a panel of 12 judges.

Study 2
The data from Study 1 was expanded to look at drawings by thirty one novices and the artists' drawings were removed. This time there was a panel of 72 judges.

Study 3
The same methodology was used, this time with 104 novice drawers. They were assessed by a panel of 147 judges.

WHAT DID THEY FIND?

Devue and Grimshaw found a positive association between face processing skills and the faithfulness of portraits drawn by people unpractised in drawing. This may mean that portrait artists may be leveraging off a pre-existing advantage in facial processing.

Examining the Results

EVALUATING THE STUDIES

- What are the limitations of this particular type of study design?
- Compare the three different studies and identify the pros and cons of each version. Which one is most likely to lead to a statistically significant results?
- Analyse the raw data from Study 3 provided alongside this online resource on the Victoria University website. Draw your own conclusions about the significance of the results.

CHECK OUT THE RESEARCH ARTICLE.
https://osf.io/8t7k4/
Devue, C., & Grimshaw, G. M. (2018, January 23). Face processing skills predict faithfulness of portraits drawn by novices.

RUN THE EXPERIMENT

Right are the two images used as references for all three studies. The two facial processing tests available online are:

- Cambridge Face Memory Test
- University of Western Australia's Face Memory Test

Use these tools to run the experiment again. Some aspects to consider are:

- How do you assess the experience level of the participants and judges?
- What is the best sample size to use when taking into account both statistical significance and ability to actually carry out the study?
- Are there any variations on the study that you could run? What would the implications of them be?
- Using a similar methodology, investigate the following:
  - Are there differences between year groups in facial processing or portrait drawing?
  - Are there differences between students who mostly take humanities subjects and students who mostly take science subjects?