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Q4(a)

Why Heath and Carter used anthropometric measurements instead of photographs of an individual to assess the somatotype? Elaborate their method

UPSC Civil Services Mains 2022 · Anthropology GS 1 · 20 marks · Ageing and senescence. Theories and observations

Ageing and senescence. Theories and observations-biological and chronological longevity. Human physique and somatotypes. Methodologies for growth studies.

Core demand of the question

- Why **Heath and Carter** used anthropometric measurements instead of photographs of an individual to assess the somatotype? Elaborate their method
- Write about 250 words for 20 marks

Revision summary

Sheldon's photoscopic somatotype depended on nude pictures and rater eye.

Heath and Carter used **skinfolds**, girths, bone breadths, height, and weight.

Three components are calculated, not guessed from a print.

The method fits sports and growth surveys.

It describes present shape, not race or temperament.

Introduction

William **Sheldon** photographed bodies and scored endomorphy, mesomorphy, and ectomorphy by eye. **Heath and Carter** replaced the photograph with callipers and a formula so that somatotype could be repeated in the field.

Body

Why not photographs

- **Sheldon's** atlas needed posed nudes and a trained rater. Bias, privacy, and poor repeatability followed, which **Hooton** and later sports scientists criticised.
- A photo cannot give true girths or **skinfolds**. Camera distance and posture change the apparent type.
- Anthropology in schools, armies, and villages cannot run a nude photo studio. **Heath and Carter** (1967 onward) needed a method that works with tape, stadiometer, and skinfold calliper.

The Heath-Carter method

- **Ten measurements are standard:** height, weight, four **skinfolds**, two bone breadths, and two limb girths.
- **Three components are calculated:** endomorphy from **skinfolds**, mesomorphy from bone and girth corrected for height, ectomorphy from height-weight ratio.

- The result is a three-number somatotype plotted on a **somatochart**. A wrestler and a distance runner separate without a photograph.
- **Carter** applied it to Olympic athletes. Indian physical anthropologists used it in growth and sports selection studies.

Limit

- Somatotype is a shape index, not a race or a character type. **Sheldon's** temperament claims are dropped.
- Fat and muscle change with training and diet, so the score is a present body, not a destiny.

Flow diagram

Sheldon photo rating -> Bias privacy
Heath Carter -> Skinfold girth bone height
Skinfold girth bone height -> Somatochart 3 numbers

Conclusion

Heath and Carter left the photograph because it was unethical, unrepeatable, and metrically weak. Their anthropometry turns somatotype into a field measurement of shape, not a moral portrait.

Facts & figures

Sheldon

The Varieties of Human Physique used photographs and linked types to temperament, a step later rejected.

Heath and Carter

Published an anthropometric somatotype that can be computed from listed measurements.

Somatochart

A plot of the three-number score used to compare athletes and populations.

Skinfolds

The main input to the endomorphy component, which a photograph cannot measure.

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