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Q6(b)

"The agenda of biological anthropology became more scientific from the middle of the twentieth century." Justify

UPSC Civil Services Mains 2025 · Anthropology GS 1 · 15 marks · Biological Anthropology.

(b) Biological Anthropology.

Core demand of the question

- State what biological anthropology looked like before the mid-twentieth century
- **Show what became more scientific from that period:** theory, method, and ethics of race
- Justify with named thinkers and techniques
- **Justify the quote:** more scientific, without claiming earlier work was empty

Revision summary

Earlier physical anthropology often measured skulls and built racial types.

From the mid-twentieth century the field joined the modern synthesis and Washburn's new physical anthropology.

Dating methods and African fossils made evolution a testable chronology.

Genetics and Lewontin's variation argument weakened race as essence.

Field primatology and human adaptability studies added living data.

More scientific means hypotheses and populations, not a claim that the past had no measurements.

Introduction

Before the mid-twentieth century, much physical anthropology measured skulls, built racial types, and ranked groups. From about the 1940s and 1950s the agenda shifted toward evolutionary theory, hypothesis testing, genetics and behaviour. The quote is justified by that shift in names and methods, not by dismissing all earlier measurement.

Body**What had to change**

Nineteenth- and early twentieth-century physical anthropology often treated race as a fixed type. Calipers were real; the theory was weak. **Franz Boas** had already attacked fixed-form racism with immigrant head-form studies, but museum typology still dominated many laboratories. The species was sliced more than it was explained.

The scientific turn

- **Modern synthesis:** **Theodosius Dobzhansky** and **Ernst Mayr** made population genetics and speciation the language of biology. Humans had to be thought as a variable population, not as a row of types.

- **Washburn's new physical anthropology:** **Sherwood Washburn** (early 1950s) called for functional anatomy, palaeontology, and primate behaviour under evolutionary questions. Bones were for locomotion and life, not only for racial catalogues.
- **Dating and the fossil record:** Potassium-argon and later radiometric clocks, plus the **Leakey** work at Olduvai, turned human evolution into a dated African narrative rather than a guessing game of missing links.
- **Molecular and genetic methods:** Blood groups, then proteins, then DNA made variation countable. **Lewontin** used that count against race as a biological essence.
- **Field primatology:** **Jane Goodall**, **Dian Fossey** and **Biruté Galdikas**, and earlier Japanese primatology, brought systematic observation of living apes. Behaviour became data, not anecdote.
- **Human biology of adaptation:** The International Biological Programme and work on altitude, heat and cold treated the living body as an experimental and biocultural object (**Baker**, **Harrison**, and others).

What "more scientific" means here

It means explicit hypotheses, comparable measurement, evolutionary theory, and a willingness to drop race typology when the data refuse it. It does not mean that ethics automatically became perfect. Blood sampling, remains and "tribal" surveys still need critical ethnography.

- **A current continuation is ancient DNA and GWAS:** still scientific, still in need of population ethics.

Flow diagram

Old agenda -> Racial types
Mid-century turn -> Synthesis / Washburn
Mid-century turn -> Genetics and dating
Mid-century turn -> Primates and adaptation
Synthesis / Washburn -> Populations not types

Conclusion

The agenda became more scientific when biological anthropology joined the modern synthesis, replaced types with populations, dated fossils, counted genes, and watched primates as well as skulls. Washburn, Dobzhansky, the Leakeys and Lewontin justify the quote. Measurement had existed before; evolutionary explanation and testable method are what changed.

Facts & figures

Sherwood Washburn

He called for a new physical anthropology based on evolutionary function, fossils and primate behaviour rather than racial typology.

Theodosius Dobzhansky

A principal architect of the modern synthesis who framed humans as genetically variable populations.

Boas on head form

Franz Boas showed that cranial form could change across immigrant generations, undermining fixed racial types even before the mid-century turn.

Olduvai and radiometric dating

Leakey excavations plus potassium-argon dating placed early hominins in a measured African timescale.

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