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Q2(a)

Elucidate the biological and cultural factors in Human Evolution

UPSC Civil Services Mains 2015 · Anthropology GS 1 · 15 marks · Biological and Cultural factors in human evolution.

(a) Biological and Cultural factors in human evolution.

Core demand of the question

- Elucidate the biological and cultural factors in Human Evolution
- Write about 200 words for 15 marks

Revision summary

Bipedalism, brain growth, and long childhood are biological platforms.

Tools, fire, sharing, and language are cultural forces.

Washburn and later gene-culture work treat the loop as two-way.

Hadar, **Laetoli**, and Olduvai are the teaching fossils and sites.

Lactase persistence shows the loop still at work.

Introduction

Human evolution is a feedback loop. Biology opened new behaviour; culture then selected further biology. Neither side writes the whole story.

Body**Biological factors**

- Bipedalism freed the hands, as **Australopithecus** at **Hadar** and **Laetoli** footprints show.
- A larger brain, reduced canine, and longer childhood appear with **Homo habilis** and **Homo erectus**.
- **Endurance walking**, sweat cooling, and a changed birth canal are somatic answers to savanna and later to cooked food, as **Wrangham** argued.

Cultural factors

- Stone tools from **Olduvai** and **Attirampakkam** extend the diet and the home range.
- Fire, shelter, and later language turn learning into a second inheritance, which **Tomasello** calls cumulative culture.
- Food sharing and alloparenting, stressed by **Hrdy**, let big-brained infants survive.

Feedback

- **Washburn** called tools a cause of bipedal refinement, not only a result.
- Gene-culture cases today, such as **lactase persistence**, show the same loop still running.

Flow diagram

Bipedal brain childhood -> Tools fire teaching

Tools fire teaching -> Further selection

Further selection -> Bipedal brain childhood

Conclusion

Biology supplied bipedalism, brain, and delayed growth. Culture supplied tools, fire, and teaching. Human evolution is their joint product.

Facts & figures

Laetoli

Footprints show bipedal gait well before stone tools become common.

Washburn

Argued that tool use selected for the human hand and brain, not only the reverse.

Wrangham

Cooking hypothesis: fire reduced gut cost and fed a larger brain.

Hrdy

Cooperative breeding and allomothers help explain human childhood.