

Review of: "Is creeping abandon of human cancer defences evolutionarily favoured?"

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Potential competing interests: No potential competing interests to declare.

This article begins with the observation that the high cancer rates of humans cannot be explained by their longer lifespan and larger body mass. As the authors point out:

... whales have a longer lifespan and about 30 times the human body mass, however their cancer risk remains constant throughout their life rather than increasing sharply after female reproductive age as observed in humans.

The authors go on to argue that weaker defenses against cancer had some kind of evolutionary advantage in ancestral humans, perhaps as a means to reduce inbreeding due to the reproductive success of older, high-status men who would otherwise produce too many closely related offspring.

First, there already exists another explanation for the low cancer rates of whales:

Elephants and whales are exceptions to this observation: they are some of the few animals that grow old in the wild. Elephants also increase in reproductive potential as they age. In such animals, selection for cancer resistance may persist, even for the elderly. Dogs, cats, humans, and mice, on the other hand, have become long lived because of the controlled environments they live in, and they are the mammals with the highest rates of cancer. (Albuquerque et al., 2018)

In other words, longevity is evolutionarily recent in humans. Whales have been long-lived for a very long time, with lifespans exceeding 200 years in some species. Consequently, whales have had much more time to adapt to the realities of a long life, including the steady accumulation of cancer risk.

The authors seem to believe that the genetic costs of inbreeding are greater than those of outbreeding. In reality, inbreeding and outbreeding are equally problematic. Fertility is a good measure of embryo viability, and human fertility is at a maximum in marriages between third or fourth cousins. If you marry someone more distantly related than your fourth cousin, you will have reduced fertility, and your offspring will likewise have reduced fertility. This finding has been confirmed by two studies: one in Iceland, and another in Denmark (Helgason et al., 2008; Labouriau and Amorim, 2008).

Other comments:

- Please translate “bandes de chasseurs” by “hunting bands” (and not by “hunting gangs”).
- Hunting bands usually don't have chiefs or chieftains. There may be individuals who are more successful at hunting or who are more eloquent in arguing for a particular line of action, but there are no real chiefs. The notion of “chief” is more applicable to farming and pastoral peoples.

References

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