

Response Paper to the Article:

Nina G. Jablonski and George Chaplin: Skin Deep

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I enjoyed learning from this paper. It gave a clear and concise overview of how and why human skin developed different colors. I knew some of the information presented here but this article filled in the gaps for me. Based on my limited knowledge I have to agree with the authors that losing body hair, UV radiation, vitamin D and folate must have been the major factors that related to the different kind of adaptation within one species.

Because I never saw a visualization or picture that would have shown in phases how we lost our hair during evolution I was interested in it how and when it happened. The article summarizes Peter Wheeler's finding according to which the bipedal Turkana Boy (of the Homo ergaster) who lived 1.6 million years ago developed sweat glands and lost most of its body hair to stay cool and protect brain from overheating. That sounded very logical to me and I do not know of any other better theory, thus I am ready to accept it.

Being a very light skin person I experienced many times the harm UV radiation can cause. When I was a small child and even later I got sunburned very easily. I didn't know of course then that it is caused by UV radiation. On the other hand I never saw a dark skinned person sunburn, but did see them blush. For me this means that their skin had some sort of protection from the harmful rays. The article taught me that this material is melanin, "nature's sunscreen". It is natural that those people who spent generation after generation in the equatorial region, exposed to the Sun more than people living in other regions of Earth, would naturally select those individuals within their species who are more resistant, who has more melanin under their skin. A perfectly logical and scientific explanation for their dark skin. I wish all those who harbor racist ideas, making distinction among humans purely based on the skin color, would see and understand this simple fact.

Reading about the importance of B vitamin folate in the body was also fascinating. The scientist attributed various roles to it including influencing birth defects and the synthesis of DNA. However one of the studies that supported their claim was based on only a sample of 3. Three mothers gave birth to babies with neural tube defects after using sun beds to tan themselves. I would say that this evidence is rather inconclusive. A much higher number of cases would be needed to prove direct relationship and causality between the two events.

The vitamin D connection did a good job of explaining how the Inuit people, who live so close to the arctic can have relatively dark skin. Some UVB radiation and absorption is needed for the body to make vitamin D. Too much melanin in the skin can prevent it and this is one of the reasons people living further away from the equator, in areas that have less sunshine in a given year have lighter skin. So how come the Inuits can be dark? Because they consume subsistence rich in vitamin D already they don't need the sun and its UVB rays to make it for them. I have to admit though that the fact that they moved to that area relatively late in history, only 500 years ago let me think that maybe they just didn't have enough time to naturally select towards lighter skin. The true reasons for their unique pigmentation probably lies somewhere in the combination of the two factors.

I very much liked the closing lines of the article, because it ventured into interdisciplinary area. They gave voice to the sentiment I share: "Our variation in skin color should be celebrated." I also checked out the 3 webpages listed at the end. On one of them I found a beautifully colored map of the Earth. The colors were ranging from red at the Equator towards blue at the arctic. These colors reflect the degree of ultraviolet radiation at different latitudes. The image also has background patterns to illustrate three zones of human skin tone. It supports very visually the authors claim about the connection between UV radiation and skin pigmentation.