How did different skin colors come about?

What makes people have different human skin "colors"? Answer

As was discussed in Where did the human races come from?, we learned that all humans on earth today are descended from Noah and his wife, his three sons and their wives, and before that from Adam and Eve (Genesis 1-11). But today we have many different groups, often called "races," with what seem to be greatly differing features. The most obvious of these is skin color. Many see this as a reason to doubt the Bible's record of history. They believe that the various groups could have arisen only by evolving separately over tens of thousands of years. However, as we shall see, this does not follow from the biological evidence.

Skin Color

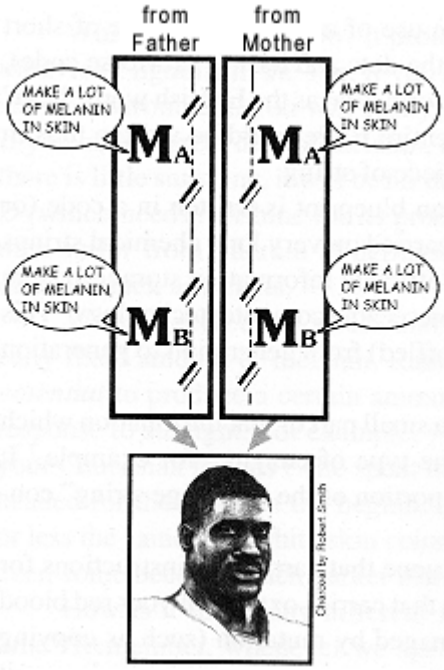

Figure 1. A "black" gene combination

We know that skin color is governed by more than one pair of genes. For simplicity, let's assume there are only two, [1] located at positions A and B on the chromosomes. One form of the gene, “M,” “says” to make lots of melanin; another form of the gene, [2] “m,” says to only make a little melanin. At position A we could have a pair such as M^AM^A, M^Am^A, or m^Am^A [3] which would instruct the skin cells to make a lot, some, or little melanin. Similarly, at position B we could have the gene pairs M^BM^B, M^Bm^B, or m^Bm^B instructing cells to make a lot, some or little melanin. Thus very dark people could have $M^AM^AM^BM^B$, for example (see figure 1).

Since both the sperm and eggs of such people could only be M^AM^B, (remember, only one of each A or B pair goes to each sperm or egg) they could only produce children with exactly the same combination of genes as themselves. So the children will all be very dark. Likewise, very light people, with $m^Am^Am^Bm^B$, could produce children only like themselves (see figure 2, below).

Let's look at what combinations would result from parents who are the type of brown-skinned person called a mulatto, or $M^Am^AM^Bm^B$ (the offspring of an $M^AM^AM^BM^B$ and $m^Am^Am^Bm^B$ union, for example; see figure 3, below).

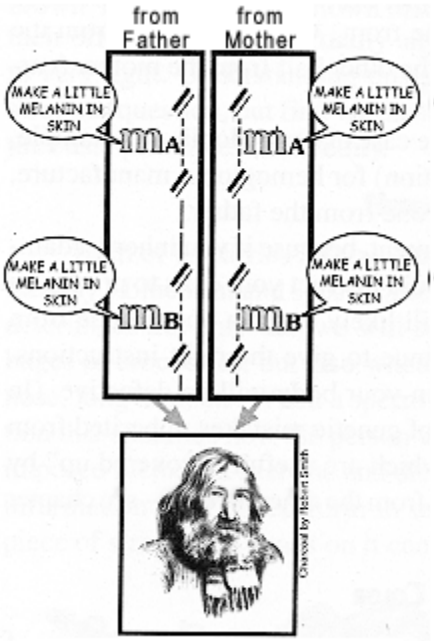

Figure 2. A "white" gene combination.

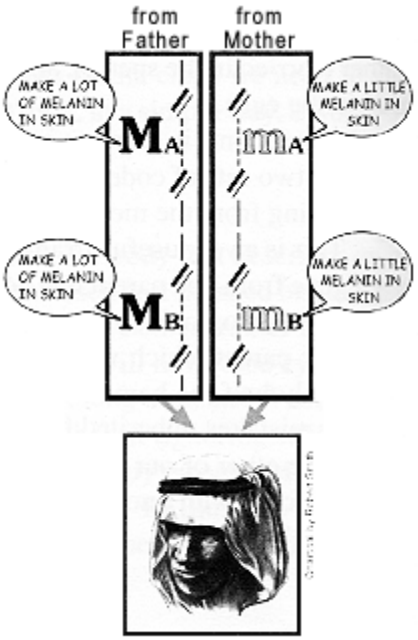

Figure 3. A "brown" gene combination.

We can do this with a diagram called a “Punnet square” (see figure 4 below).

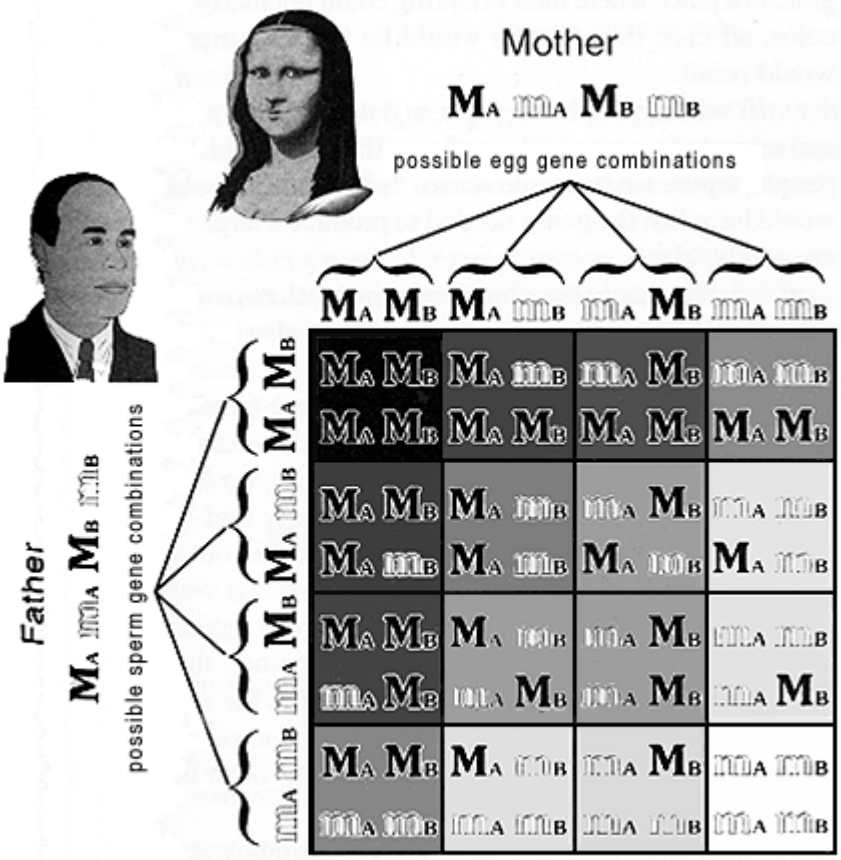

Figure 4. "Punnet square" showing the possible offspring from "mulatto" brown parents.

The left side (of the above table) shows the four different gene combinations possible in the sperm from the father and the top gives the combinations possible in the eggs from the mother (remember that a parent can only pass on one of each pair of genes to each sperm or egg). We locate a particular sperm gene combination and follow the row across to the column below a particular egg gene combination (like finding a location on a street map). The intersection gives the generic makeup of the offspring from that particular sperm and egg union.

For example, an M^Am^B sperm and an m^AM^B egg would produce a child with $M^Am^AM^Bm^B$, just the same as the parents. The other possibilities mean that five levels of melanin (shades of color) can result in the different offspring of such a mulatto marriage, as roughly indicated by the level of shading in the diagram. If three gene pairs were involved, seven levels of melanin would be possible.

Thus a range of “colors,” from very light to very dark, can result in a single *generation*, beginning with this particular type of mid-brown parents.

If people with $M^AM^AM^BM^B$, who are “pure” black (in the sense of having no genes for lightness at all), were to intermarry and migrate to a place where their offspring could not marry other people of lighter color, all their descendants would be black—a pure “black line” would result.