ON THE GENETIC DIVERSITY FOR OUR EMOTIONAL SYSTEMS

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Jaak Panksepp's account of subcortical systems containing a few ounces of living tissue that is the foundation of our emotional lives is compelling. I was reading *The Archaeology of the Mind* of Jaak Panksepp and Lucy Biven not long ago and loved this account. In the past few years, after the success of Four-Sphere Theory I became interested in Single Human Race, Personality Psychology, our emotional lives.

Naturally I am interested in understanding more precisely the Genetic basis of our emotional lives.

I want to tell you about the genetic diversity of the subcortical systems in humans.

Let me show you a nice graphic that gives us a good estimate of how we differ genetically across the globe for subcortical genetic material.

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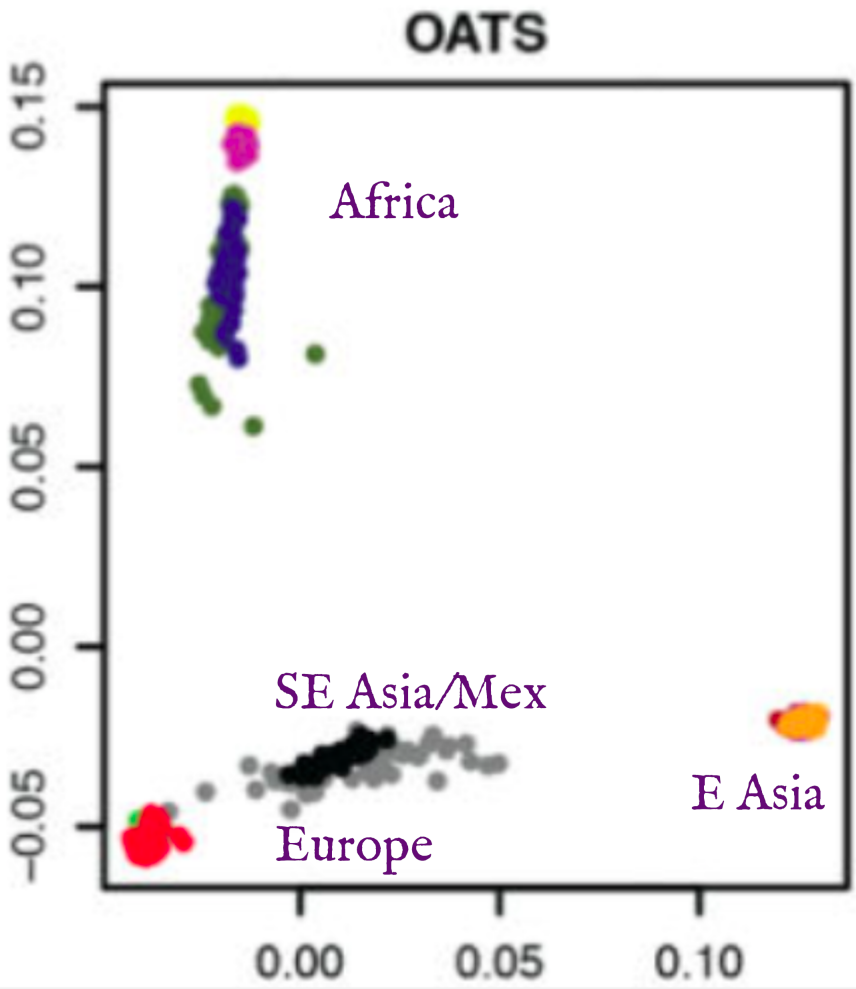

The actual groups are from 1000 Genomes Project and I won't get things confused by going into details because what is important here is to get a sense of understanding of the sort of thing that Human Genetic Diversity is doing for our *emotional lives*. These axes are going to produce very small differences in our emotional experiences and what is important to understand is that for diversity in ethnicities, this is all there is to it.

And this is what is important to understand, what is the actual difference and what is the similarity in the emotional lives of human beings.

You see this is such a small bound that we have no problems with being emotionally engaged with some pop song about love and loss across the world even if its in a foreign tongue. I remember being very moved by Sting's song "Why Should I Cry For You" years ago. The groupings that you see in the graph does not actually extend beyond the orbit where one's emotional reactions are quite close to each other to some of this sort of emotional pull and tug. These are remarkably closely clustered. And this is what we need to understand.

1. The Seven Emotion Systems

The ancient subcortical regions of mammalian brains contain at least seven emotional systems. (1) SEEKING (expectancy), (2) FEAR (anxiety), (3) RAGE (anger), (4) LUST (sexual excitement), (5) CARE (nurturance), (6) PANIC/GRIEF (sadness), (7) PLAY (social joy).

These emotion systems exist in mammals and even some birds. And so they are definitely extremely generic.

2. Central Question Of Human Subtlety

A very basic question we ought to ask is whether our Human Race is actually more sophisticated in emotional understanding generally than the simplest possible model with the seven systems.

Let me describe what I mean. Suppose I produce a simple model of humans that is seven dimensional. Over continuous time, I consider the state of the human being to be a curve

$$e : \mathbf{R} \to \mathbf{R}^7$$

The values will represent the state of of the seven emotional systems. The scientific null hypothesis will be then that for any given human being on Earth in any time past or future, this is sufficient to describe the emotional state of the human being. Then I calibrate the model and have a sufficient description of *every nuance of emotional state* that is accurate.

Panksepp actually considered a personality trait model based on the seven systems, and except for a collapse of a couple of the systems found that the popular big five personality trait model of Robert McRae exhausts the same space.

So my null hypothesis gives us a reasonable zeroth order model of human emotional states.

I claim that my seven factor emotional state model is related to the big five personality traits as follows. We collapse seven to five appropriately and then claim that long term average values for the five are relatively constant per person.

3. Precision Scientific Models For Behaviour and Personality Still In Chaos

Jaak Panksepp's book with Lucy Bevin *The Archaelogy of the Mind* contains rich details about the efforts from multiple angles that have not yet produced any canoncial Scientific Model of Emotion, Personality and Behaviour in Human Beings. What is clear to me looking over the literature is that there exist some strong canonical simple models that have not been formulated yet. This is the usual condition of a confused pre-scientific field. At the same time, it is also clear that high thoroughput genomics and some issues having been resolved in this space implies that eventually we will have a coherent canonical theory that can stand the test of time. In fact, I am interested in this problem myself and am outrageously irritated by the shenanigans of the Evil Criminal Bill Gates whose face should be blown to bits by shot gun and every bone of whose body should be crushed to powder for disturbing an immortal great genius like myself. He's worthless. Kill him. At this point I am convinced that finely nuanced emotional states of all people can be described quantitatively by a seven factor model, something that was not apparent to me before I delved into Jaak Panksepp's great works. I read Rene Descartes' *On*

the Passions of the Soul and did not think that it was compelling yet. This seven system emotion system is in the right track. It will yield a canonical model that is deep and sophisticated. It is amazing to me to examine how the *linguistic approach* led to five traits by factor analysis, and reinforcement by seven neural subcortical emotion systems is truly marvelous reinforcement. It could have been 55 systems; it is only seven. So the five factor model is quite good.

References

[1] Hibar et. al, Common genetic variants influence human subcortical brain structures ,Nature. 2015 April 9; 520(7546): 224–229