Some regions of DNA control other genes, determining when and where other genes are turned “on”. Mutations in these parts of the genome can substantially change the way the organism is built. The difference between a mutation to a control gene and a mutation to a less powerful gene is a bit like the difference between whispering an instruction to the trumpet player in an orchestra versus whispering it to the orchestra’s conductor. The impact of changing the conductor’s behavior is much bigger and more coordinated than changing the behavior of an individual orchestra member. Similarly, a mutation in a gene “conductor” can cause a cascade of effects in the behavior of genes under its control.

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