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Individuality might be a measurable genetic trait

Emily Singer | May 15, 2015 | Quanta Magazine

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Benjamin de Bivort's lab at Harvard University is *Groundhog Day* for fruit flies. In de Bivort's version, a fly must choose to walk down a dark tunnel or a lighted one. Once it has made the choice — THWOOP! — a vacuum sucks the fly back to the starting point, where it has to decide again... and again... and again.

The contraption, which tracks scores of individual flies, makes it possible to analyze how behavior varies from fly to fly. What de Bivort found when he first used it surprised him: The animals' behavior varied much more than he expected, even when the flies were more or less genetically identical and raised under the same conditions. "If you hold genetics constant and the environment mostly constant, you still see a lot of variation," de Bivort said.

De Bivort and his team are now exploring this phenomenon in detail, hoping to discover what drives that unexpected individuality. He's found that different fly strains show different levels of variability. Some strains are like a troop of well-trained soldiers, with each fly mirroring its neighbor. Other strains resemble a wild group of dancers, with individuals moving to their own beat. By comparing soldier and dancer strains, de Bivort thinks he's identified both a gene and a neural circuit that may underlie some of these differences.

"They are suggesting that variation itself might be a genetic trait," said Gerd Kempermann, a neurobiologist at the German Center for Neurodegenerative Diseases in Dresden.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Animal Copies Reveal Roots of Individuality](#)

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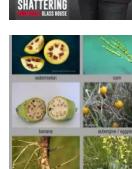
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