

# INTERACTION OF HEREDITY AND ENVIRONMENT

Let's use a **cooking metaphor** for the **development of individuals** as a result of the combined effects of our **genes**, which we will represent by flour, and our **experiences**, which we will represent by other ingredients and different cooking methods.

The different input combinations result in different outcomes, i.e., different food items in our metaphor, which represent different organismic developmental outcomes.

Flour + salt + water, when fried in shortening, yield a flour tortilla.

Flour + salt + water, when baked without shortening, yield matzo.

Flour + salt + water + yeast, when baked, yield bread.

Flour + salt + butter + cocoa + sugar, when baked, yield brownies.

Note the following:

1. Because of the ingredients used, there are constraints on development--there is no way to end up with meatloaf!
2. Also, observe that the flour (genes) is not coded for any specific outcome; the outcome depends on the interaction with the environmental factors (other ingredients, etc.).
3. Furthermore, the final product cannot be partitioned into inherited and environmental components; there is only a finished product.
4. Finally, the finished product does not allow you to look backward to determine the starting point. "You cannot look at the brownie and see the individual ingredients or the nature of the transactions of those ingredients that occurred throughout the brownie's ontogeny" (p. 148)

Miller, D. B. (1988). The nature-nurture issue: Lessons from the Pillsbury doughboy. *Teaching of Psychology*, 15, 147-149.