Why did the chicken cross the road?

It is a behavioral biological question.

Sapolsky, R. Behave
Sapolsky, R. *Behave*
because...her estrogen levels made the her brain responsive to the rooster’s call to mate.

Because...evolutionarily,... chickens that responded to such gestures at a time that they were fertile left more copies of their genes...

Each scientific discipline has an explanation for behavior.

Sapolsky, R. *Behave*
biologist

economist

psychologist
Advantage: categorizing helps us organize information.

* remember facts better
Disadvantage:

Lose the ability to think critically
The Curious Politics of the ‘Nudge’

By Craig R. Fox and David Tannenbaum

Sept. 30, 2015

The New York Times

The response to the executive order has been generally positive, but some conservatives have been critical, misunderstanding it as an example of government overreach. "The Obama administration is attempting to use behavioral economics to manipulate and control our personal decisions," one conservative commentator wrote in The Daily Caller.

However, it is worth noting that when a similar "behavioral nudging" program was rolled out as part of the economic recovery plan, the backlash was intense, especially from conservative figures. David Cameron, at the time the British prime minister, was criticized for his role in the plan, which included nudging people to save money on energy bills.

It is possible that these concerns are unfounded. Behavioral economics is not about manipulating people's decisions. It is about providing clear, simple, and relevant information to help people make better decisions. In the end, it is up to the individual to choose whether to accept the advice or not.

The goal is not to manipulate or control people, but to help them make better decisions for themselves.

How ethical was the nudge?
encourage low income individuals to enroll in food stamps ...
... wealthy take advantage of capital gains tax breaks ...
... encourage low income individuals to enroll in food stamps ...

... wealthy take advantage of capital gains tax breaks ...
We found that the illustrations — which were arbitrary examples, logically speaking — greatly influenced their evaluations. In almost every case, respondents on the left of the political spectrum supported nudges when they were illustrated with a liberal agenda but opposed them when they were illustrated with a conservative one; meanwhile, respondents on the political right exhibited the opposite pattern.
Boundaries between different categories are arbitrary.
Boundaries are arbitrary.

However, we forget & assign meaning to the categories.
Show someone two very similar colors...
If the color-name boundary in that person’s language is...

...between the two colors – person will overestimate the difference between the two colors.

If colors fall within the same category, the person will underestimate the difference between the two colors.
SUBCALLOSAL FASCICULUS
Picture Naming Task (Left)

THALAMO CORtical RADiaTIONS
EBM to Test Sensory Perception

PYRAMIDAL TRACT
Contralateral Hemibody Motor Tasks
Double Task

OPTIC RADIAITIONS
Picture Naming Task
(Naming two pictures in opposite quadrants)
Thalamic projections
The descending input to thalamic relay neurons comes from in layer 6 of the cerebral cortex. These corticothalamic neurons exert both an **excitatory** and an **inhibitory influence on relay neurons**, and it is the balance of this excitation and inhibition that is thought to influence many of the activity patterns and sensory response properties of relay neurons.

lateral geniculate nucleus (LGN)
reticular nucleus (RTN)
Diagram of the visual system:
- Eye
- Optic nerve
- Retina
- Optic tract
- Thalamus (lateral geniculate nucleus)
- Primary visual cortex (V1)
- LGN (lateral geniculate nucleus)
Left field

Visual field

right
Sensory regions interact with thalamic nuclei. The thalamus is often called the “hub” of the brain. It is not the only hub, but perhaps the most important. Notice that vision, hearing and touch pathways all stop off in the thalamus on their way to their cortical projection regions.

However, information is constantly bounced back from the cortex to various thalamic nuclei, so that there is a constant flow of signaling between all parts of the cortex to various thalamic nuclei.

In some cases, the thalamus amplifies cortical activity, while in other cases it blocks or inhibits it.

Note the striking similarities between cortical input and output layers in these three senses.
