Theory-making in American Cultural Anthropology, or, Can Neuroscience Help?

Shuenn-Der Yu
Institute of Ethnology
Academia Sinica

The concept of culture and American anthropology

- Thousands of definitions
- Each anthropologist has his or her own definition

Theory-making: Anthropologists study culture-making to construct theories of culture

In the process of anthropologists' theory-making, can neuroscience help?

Why is this an issue?

- Many anthropological theories of culture involve assertions of brain or mental operation.
- Theory-making within anthropology has moved toward considering culture as something “internal”.
- Neuroscience was rejected by anthropology in the 80s but it returns in significant manners making it hard to ignore it, again.

How brain and mind were considered in anthropological theory-making?

- Most famous: Levi-Strauss binary oppositions
- Symbolism:
  - Geertz: culture is not in anyone's head
- Cognitive anthropology:
  - Roy D'Andrade: investigates cultural knowledge that is embedded in words, stories, and artifacts, and which is learned from and shared with other humans.
- Body-turn and Sense-turn
  - Consider body (and senses) as the means in our encountering the world.

Mind is the activity of the brain; there is a link between brain processes and mind processes. (cognitive neuroscience, brain and cognition)

Anthropological theory-making becomes increasingly "internal"

- From superorganic to embodied cognition
  - American anthropology emerged from opposition to social/cultural evolutionism and racism. Culture was considered as non-biological; anthropologists often reframed themselves from discussing biological inheritance or abilities.
  - A strong division of nature and culture in anthropological thinking. Culture is transmitted and learned.
  - Kroeber's concept of superorganic: culture is a reality *sui generis,* and is external to the individual.
  - Noam Chomsky: Although language is not part of an individual's biological make-up, but the ability to use language is wired into the neural mechanism of the human.
  - Eric Lenneberg: There exists a critical period for the acquisition of language, which is linked to the maturation of the our brain

Embodiment and Cognition

- Perception is active, or an action
- Concepts emerge when interacting with the world through our bodies
- Connectionism vs lineal thinking

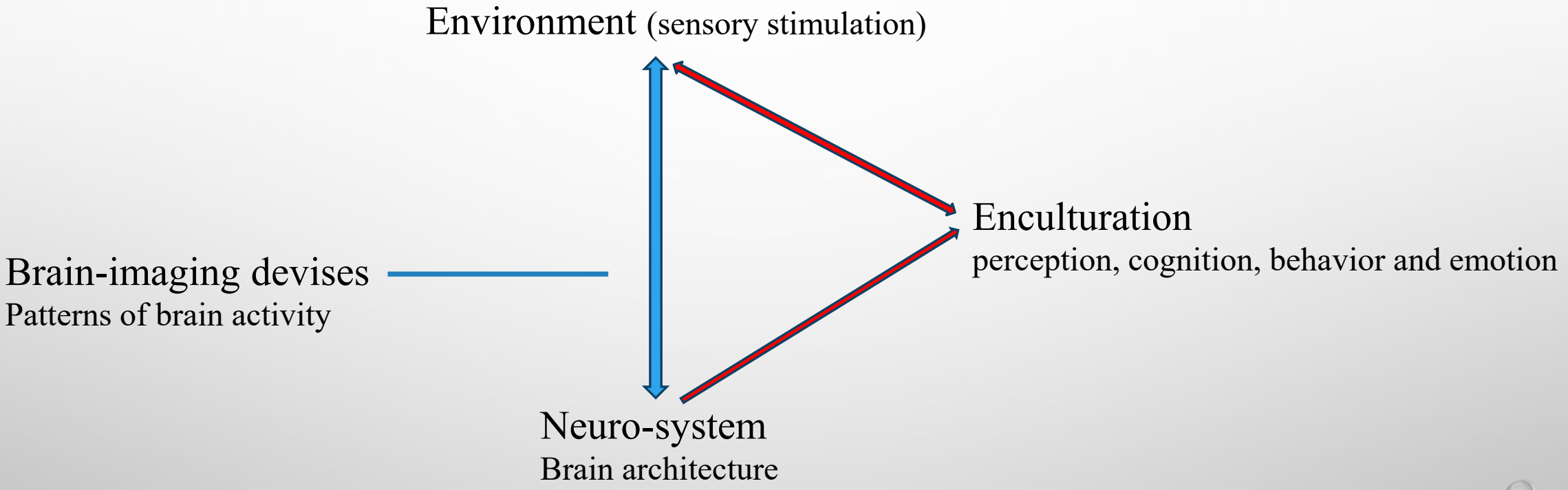
Culture is “internal”

Neuroscience

- Opposing neuroscience in 1980s
  - reductionism
- New approaches: cognitive neuroscience, cultural neuroscience, social neuroscience, neuroculture, neuroanthropology

- Neuroplasticity (brain ability to change, adapt and form new connections)
- Environmental shaping of brain function
- This neuronal "writing," no two individuals are the same.
- Man-made environment (sensory stimulation) ⟷ Enculturation

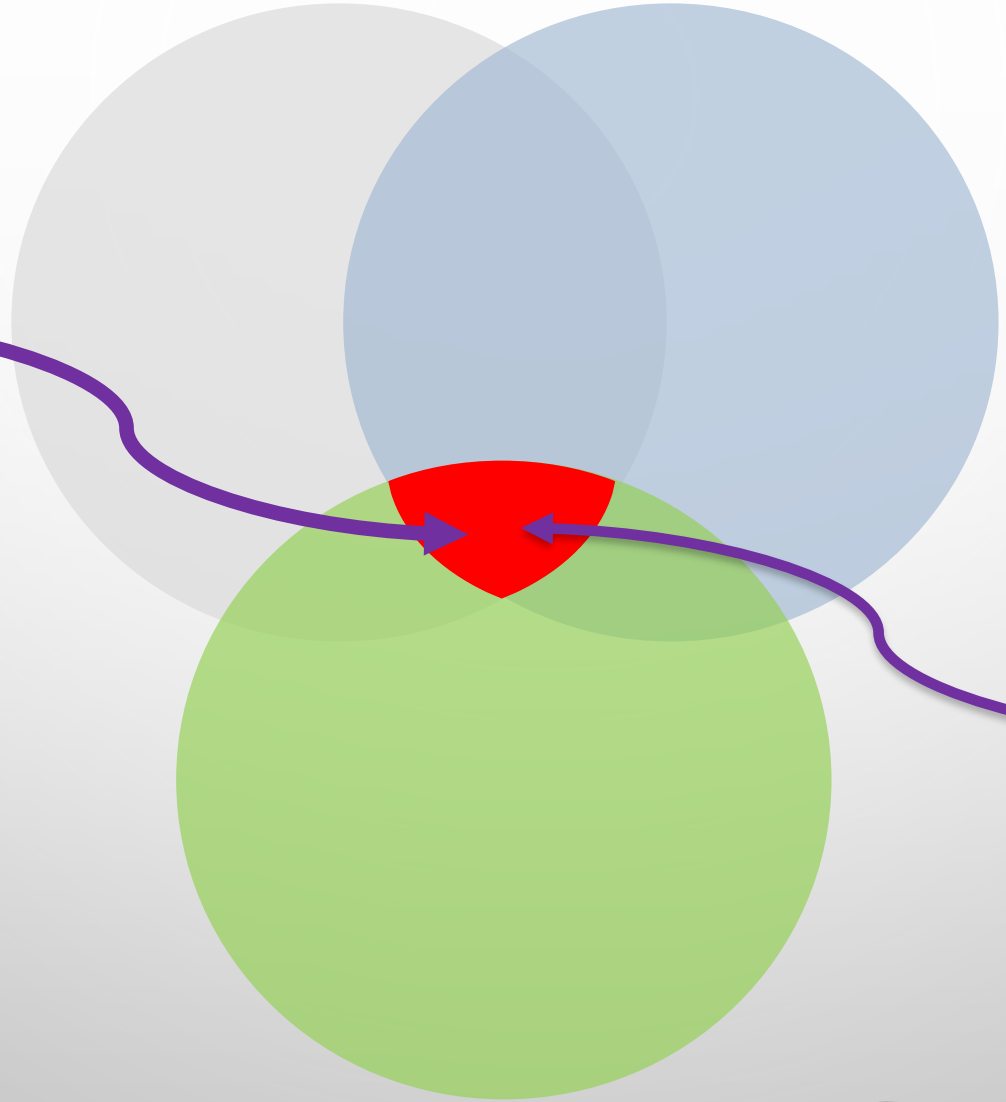
- Not only confirms past anthropological assertions: Culture influences perception
- But also "our nervous systems embody culture"
- "Our brain and nervous system are our most cultural organs."


Environment (sensory stimulation)
Brain-imaging devises
Patterns of brain activity
Enculturation
perception, cognition, behavior and emotion
Neuro-system
Brain architecture

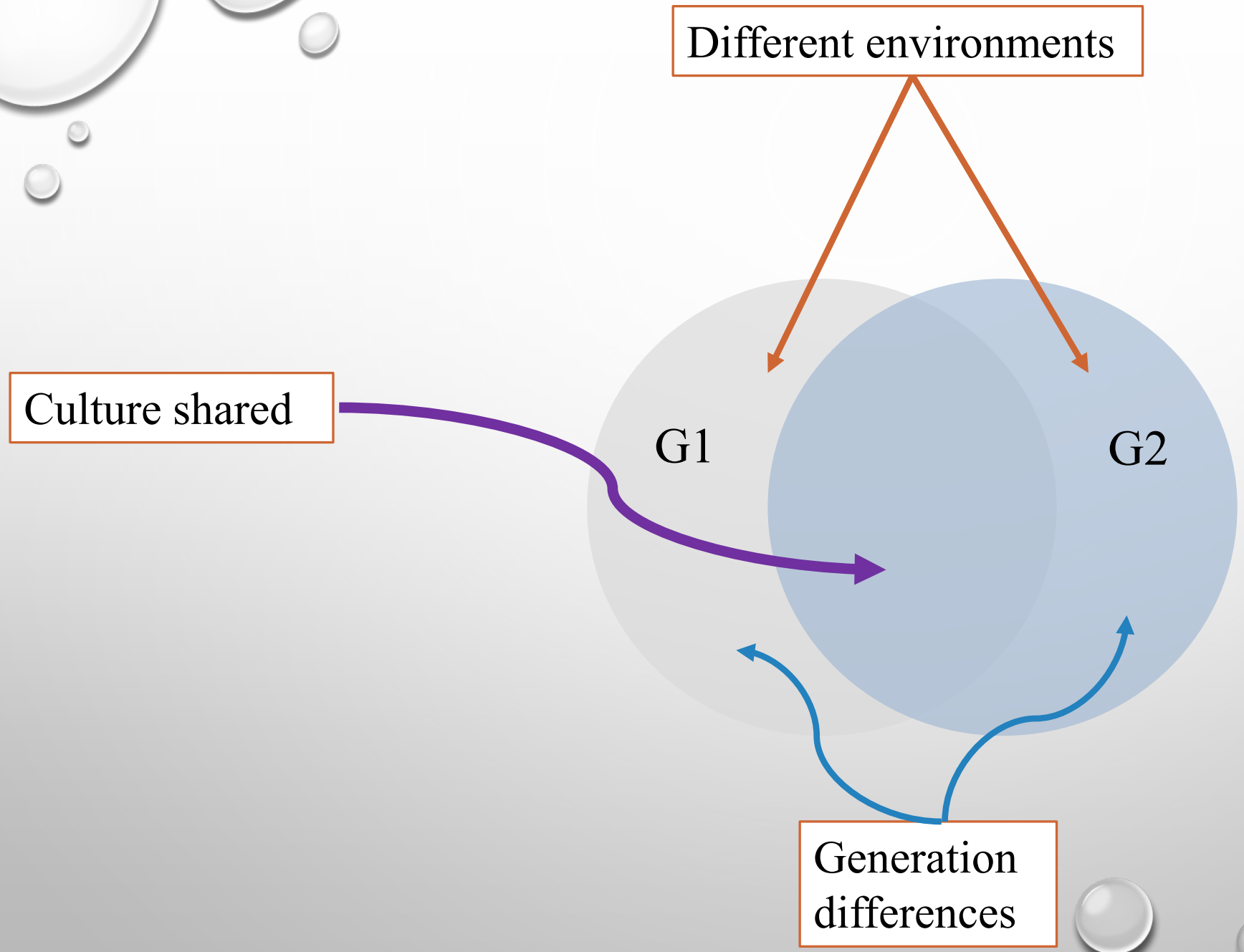
Implications to anthropology

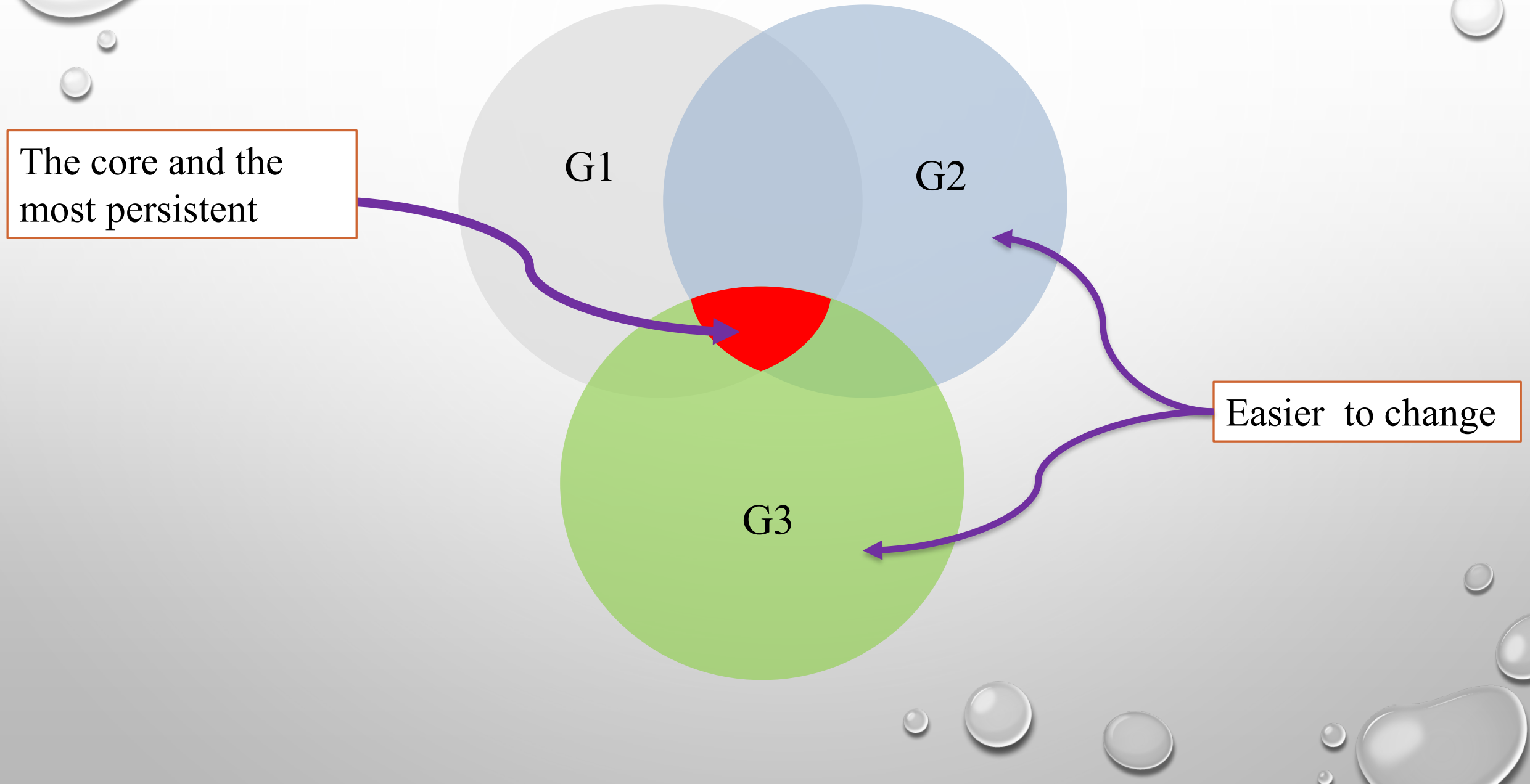
- Neuroscience goes a step further than the approach of the embodied mind by demonstrating culture is “internal” as research shows culture and brain engages each other.
- If mind is the result of brain functioning, there is no way to avoid neuroscience in our theory-making.
- Further, if “culture is the product of brain and our brain is the product of culture” as neuroanthropology claims, how neurological knowledge should be incorporated into anthropological theory-making deserves our close examination.

Knowledge, worldviews, system of meaning, cognition



Model of information processing + neuroplasticity


Different environments
Culture shared
G1
G2
Generation differences


The core and the most persistent
G1
G2
G3
Easier to change

Can neuroscience help?

- Yes, but not in defining culture with neurological terms.
- It would be essentializing and is a reductionist approach to what culture is

- This paper attempt to analyze that if culture is ingrained in our brain, to the point that brain is the product of culture and vise versa, how neuroscience may illuminate our imagination of what culture is like in the processes of making sense of the world.

Thanks

Limits of neuroscience

- Most experiments focus only on one single pairing, e.g., a particular stimuli and corresponding pattern of brain activity.
- How various sources of sensory information integrate is too complicated for research

So, how to define culture from a neurological perspective is still a bridge too far.

But it helps.