Cognitive Approaches to Difference: Implications for WAC of Current Neuroscience Research

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How does learning new genres impact students’ identities?

Helen: I thought there was no such thing as the self.

Ralph: No such thing, no, if you mean a fixed discrete entity. But of course there are selves. We make them up all the time.

David Lodge  *Thinks*
Main Points to be covered

• Research in neuroplasticity

• The issue of genre and identity

• Some relevant studies in neuroplasticity

• Suggestions for classroom implementation
Connectomes and Identity

Sebastian Seung *Connectome: How the Brain's Wiring Makes Us How We Are* (2011)

A Connectome: “the totality of connections between the neurons in a nervous system,”

Connectomes change throughout life.
Influences on Connectomes

- Life Experiences
- Activities
- Skill Acquisition
- New Knowledge
Connectomes and Identity?

- Neuronal activity is always in flux

Therefore—

- Identity is not an essentialized, permanently etched static construct
- Identity is complex—subject to change
- Identity is performative
- People can have agency over who they become.
Implications for Writing Studies?

• Concept of Neuroplasticity—changes in the brain as a result of life experience, activities and learning

• Provides new perspective on the authenticity of identity. Identity is performative.

• Problematizes ethical issues concerned with the issue of academic genres and identity
Ethical Issues Associated With Identity Change

- Tendency to Distrust
- Regarded as schemers or performers
- Ethically inferior
The Ethical Issue

• Deliberate identity change has always been viewed with suspicion--

-- Sophists

-- Politicians

-- Used car salesmen
But we teach audience awareness

- Idea that absolute authenticity is not possible
- Need to adjust authorial persona address an audience effectively
Significant Issue in Rhetorical Genre Studies

• Bartholomae, 1985; Bazerman, 2002; Gee 2001; Hyland, 2002; Ivanic 1998; LeCourt, 2006; among others

• Particularly significant for educationally disadvantaged students

• Culturally isolated—at university and at home
IDENTITY CHANGE AS AN ETHICAL ISSUE

• Academic genres immerse students in new ways of viewing the world—differences in how one speaks, writes, acts, and thinks
Identity Threat: The Alienation Narrative

• Students are immersed in academic genres that are associated with ways of thinking, attitudes, beliefs, ideologies and behaviors that normalize elitist values and normalize power inequities.

• Can students become proficient “academic” writers without accepting the social hierarchies in which these genres participate?
Role Playing?

• Don’t we all play different roles?

• Don’t we WANT our students to learn to play different roles when they write, in response to different audiences?

• Differences between “real” selves and discoursal roles?
Previous Concepts of the Brain

The brain doesn’t change.

We are stuck with what we are born with.
However—new research indicates--

• The Brain changes frequently

• Neuroplasticity—new neurons form based on activity, experience, and learning
Neuronal Activities Perpetually in Flux

• Identity is not a permanent entity, but rather is subject to frequent transformation.

• Who we are, in terms of how we view ourselves and present ourselves to others, is linked to what we do.

• Awareness enables agency.
Begley 2007—Brain Reflects Activities

• The brain devotes more cortical real estate to functions that it’s owner uses more frequently and shrinks the space devoted to activities rarely performed

• Brains change according to what we **do** and what we **think**.
Neuroplasticity

- Thinking about playing the piano leads to measurable changes in the brain’s motor cortex.
Studies indicating the Impact of Learning on the Brain

• Juggler’s study.

• Taxi Drivers Study

• Nuns Study
The Ability to juggle can be seen in the brain.
Taxi Drivers Study

• University College, London

• Taxi Drivers given brain scans.
Results of Taxi Drivers Study

• Gray Matter enlarges to help them store a mental map of London.

• Hippocampus enlarged the longer they spent on the job.
Children With Dyslexia

• Students improvement in both oral language and reading performance was manifested directly in the brain.
The Nun Study

• 1930-678 nuns wrote short biographical texts
• Details of parentage, childhood events, schooling, other influences
Nun Study

- Inverse correlation between high performance in youth and cognitive impairment later in life

- Measured “idea density”

- Study published in 1996
Nun Study Findings

• 14 sisters died (1996)

• Confirmed Alzheimer’s disease present in all of those with low idea density in early life and in none of those with high idea density.
Later Study 2005

• 90 participants

• “regardless of evidence of Alzheimer’s in the brain, sisters who had better language ability early in life were less likely to exhibit symptoms.”
Latest Study 2009

• Nuns who did not have dementia in later life had 20% higher linguistic scores as young women

• Did these nuns have a different sense of self?

• Is this causally or correlationally linked?

• Perhaps genetic factors?
  ??????
IDENTITY, AGENCY AND PERFORMANCE

• Identity has multiple facets—

• For most students, identities in educational contexts are transitory

• Many students are already aware of how their engagement with unfamiliar academic genres can affect how they are perceived by and interact with others,
Agency

• Schwarz and Begley—concept of the volitional brain;

• Cite work by Kronhuber and Deecke (1964) and extended by Libet

• Benjamin Libet—conscious will can affect the outcome of an action, even when an action is initiated by unconscious cerebral processes.
Awareness Enables choice

• Ivanic’s research—autobiographical self versus discoursal self.

• Students taught to analyze the relationship between their “identities” and academic writing.

• Students refer to trying identities on for size

• Some wished to acquire an academic identity. Some did not—no fun!
Awareness, Choice, and Identity

• With awareness—students have greater agency over their choices.

• Students can explain the rationale for identity choices.

• Identity can be viewed as a type of performance.
Identity and Performance

Actors understand that they are playing a role and do not undergo a significant transformation from their everyday selves.
Leonard Nimoy’s Autobiography and Mr. Spock

Volume I I Am Not Spock (1975)

Nimoy and Spock

• Nimoy said that the character of Spock had always been a part of him—representing traits within himself that he had always admired.

• But only a part—not identical—and he was aware.

• This should be a goal in our classes.
In Our Classes

1. Foster Reflection, Metacognition and Genre Awareness, personal and cultural awareness

2. Incorporate the use of imitation and modeling as a means of helping students practice playing various roles and gain agency over whom they wish to be.

3. Teach the issues—ethical concerns, brain research, identity complexity
In Our Classes

• Provide opportunities for imitation and practice. Not what MUST be done, but what MIGHT be done.

• Practice creates neural pathways. Neurons create synapses, which create pathways.

• Like crossing a field of grass.
Outsider/Insider

• We are all sometimes outsiders and insiders.

• Sometimes it is okay to be an outsider.

• Like Prufrock: we must “prepare a face to meet the faces that you meet.”
Neuroplasticity and Shakespeare

All the world's a stage, and all the men and women merely players; They have their exits and their entrances, And one man in his time plays many parts.
To Keep in Mind--

• The issue of identity is complex and new research in neuroplasticity is likely to yield new insights.

• Important for us in Writing Studies to foster students’ awareness as a means of enabling choice.