

Session Three: Digital Media and Attention  
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I. Neurogenesis (also called “neuro-plasticity”). The human brain constantly “re-wires” itself. It continually creates new synaptic pathways between the various parts of the brain. In every effort to perceive, the brain begins to adapt to what it needs to adapt to.

- Two children reared in different cultures learn to hear and speak different languages.
- People reared in homes where there are many opportunities to listen to music ordinarily have better pitch than those who have fewer opportunities.
- In order to read, three different lobes of the brain must develop synaptic pathways to each other, pathways that are not there at birth.

What we call “learning,” therefore is ordinarily *both* a matter of what we *consciously* do in the effort to perceive or understand, *and* a matter of our brains *unconsciously* developing the neural networks necessary to the task. What we cannot perceive today we may be able to perceive next week, next month, or next year.

Until this was proven by empirical research, media ecologists had recognized the phenomenon, and had referred to it by saying “the *sensoria* (the five senses plus the two properties of the mind) are plastic.”

Maryanne Wolf, *Proust and the Squid: The Story and Science of the Reading Brain*. New York: Harper, 2007.

II. Three kinds of attention

A. Orienting attention. Attention to the whole environment simultaneously, to “take in” all the sensory information (sights, sounds, smells) necessary to orienting ourselves in the environment.

B. Alarming (alerting) attention. Switching attention to one specific thing that must be noticed to survive, e.g. a mouse hears the sound of an owl flying or a human hears a horn honk. The brain chemically “rewards” this.

C. Executive attention. Distinctly human, this kind of attention “turns off” the other two, in order to give sustained focus to a matter, as when learning mathematical concepts, reading a poem or ancient text carefully, discussing child-rearing with a spouse, developing a budget, etc.

Winifred Gallagher, *Rapt: Attention and the Focused Life* (2009).

III. Digital technologies “cultivate” distraction (alarming), and injure executive attention

A. The brain “adjusts” to what it must adjust to (I., above).

B. The primary virtue of digital technologies is speed, the rapidity with which information can be retrieved or sent.

C. Digital technologies are literally alarming; they cultivate a distracted brain

- Cellphones/smartphones alarm when texts, tweets, calls, or emails arrive
- Email programs alert when new messages arrive
- Hyperlinks take us from one place to another quickly
- Many websites have pop-ups

Maggie Jackson, *Distracted: The Erosion of Attention and the Coming Dark Age* (2008), Mark Bauerlein, *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes our Future* (2008), Nicholas Carr, *The Shallows: What the Internet Is Doing to Our Brains* (2010)