

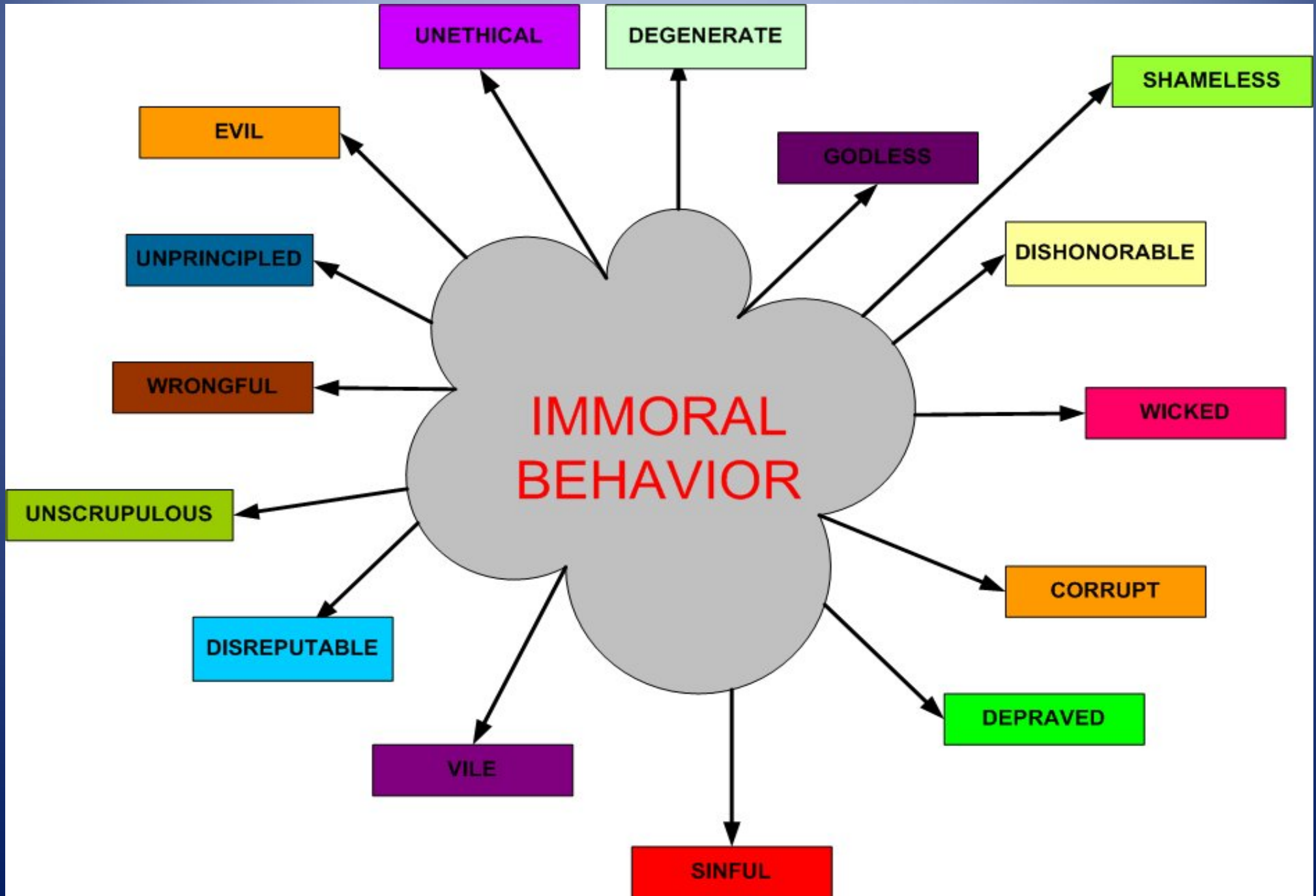
Immoral Behavior and Neuroimaging

What Are The Implications?

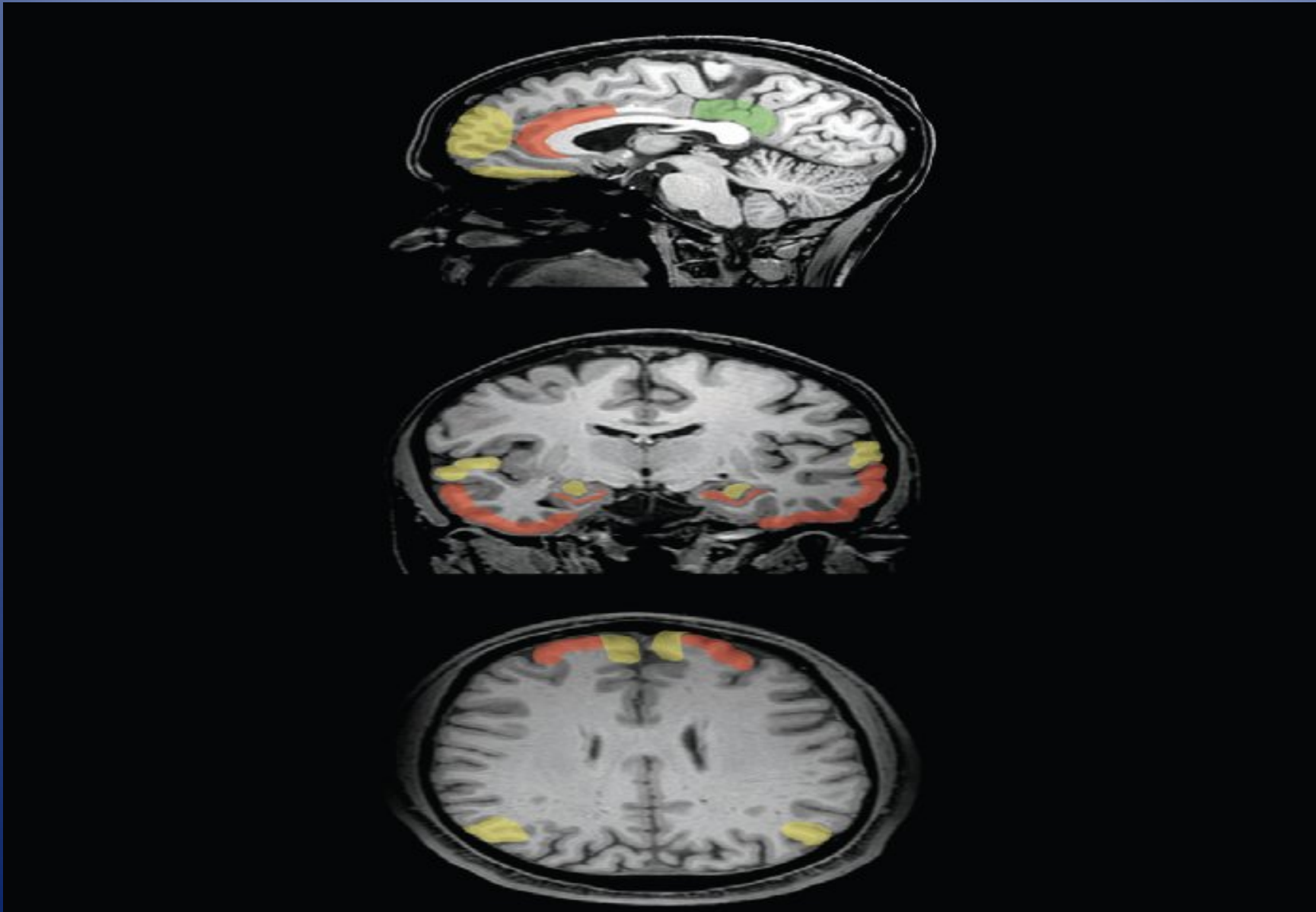
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Definitions – Oxford University Press
American Writers Thesaurus



Neuroimaging Definition: A clinical specialty concerned with producing images of the brain by noninvasive techniques like CAT scans and Magnetic Resonance Imaging (MRI). For our purposes, it is used to target very specific regions of the brain determined to cause immoral behavior.



Neuroimaging and Immorality: What many scientists are saying

- Psychiatrist and lawyer Lawrence Tancredi rejects the idea of free will as a determining factor in immoral behavior and instead relies on brain imaging technology to prove that malfunctions in very specific parts of the brain; orbitofrontal cortex as an example, as the real cause.
- Shaun Nichols, professor of philosophy at the University of Arizona, talks about the many scientists and philosophers who also reject free will saying that we are nothing but a 'pack of neurons'. These scientists claim although we *appear* to have free will, in fact, our choices have already been predetermined for us and we cannot change them."
- Adrian Raine and Yaling Yang of the Department of Psychology and Neuroscience Program at the University of Southern California also agree with this new science in analyzing the causes of immoral behavior by concluding that , with the use of neural imaging, there are **six specific regions in the brain that are responsible for such behavior.**

Consequences

- Judy Illes of the Department of Medicine and Radiology at the Stanford Center for Biomedical Ethics tells us that we are entering into a brand new era of inquiry as a result of the advances in neuroimaging and that the ethical challenges will be formidable. She further states that the larger questions for advanced neuroimaging are the moral and social acceptability of research topics and study design. “We must ask, for example, whether all studies of normative neurobehavioral phenomena are ethically acceptable. How might social or racial biases affect applications of the technology, the conditions under which imaging is performed, or the way interpretations are made?”

Consequences Continued:

- A workshop in Amsterdam at the 3TU.Center for the Ethics in Technology concluded the following in reference to neuroimaging:
 - Methodological and conceptual issues—the interpretation of the data in psychological terms, the mismatch between scientific language and ordinary language, quantitative vs. qualitative interpretations.
 - Ethical aspects of the use and abuse of the results of brain imaging technology: the use of brain images in court, “brain fingerprinting”, foreseeable future use of brain scans by insurance companies and security agencies, the pros and cons of brain screening by private clinics, high hopes and false expectations among the general public, taking neuroscience into account in future legislation, how to lie with brain images, neuro-marketing, concerns about mind reading, privacy issues, and so on.
 - **The use of brain-imaging to shed light on decision making, including moral decision making (“the neuroimaging of ethics”).**
 - The impact of neuroimaging on our conception of man, free will and responsibility vs. causal explanation. This is only the tip of the iceberg: neuroethics is a field which is currently undergoing an explosive growth, mainly due to the advances in neuroimaging.

Consequences Continued: An attack on the idea of free will

- The Oxford Handbook on Free will tells us that the following aspects of human life will be implicated:
 - Moral Responsibility
 - Individual Dignity
 - Accountability
 - Limits of Freedom
 - Self-control
 - Self-deception
 - Criminal liability
 - Criminal Punishment
 - Addiction
 - Autonomy

Conclusions and Predictions: My Own Two Cents

- This new technology, like all technology, is unstoppable and will continue forward regardless of its value or cost to society.
- It will launch theologians, philosophers, ethicists, psychologists, psychiatrists, legislatures and, sadly, lawyers into a new level of prominence in an expanding global discourse.
- It will be a strong driving force to individuals either to move much closer to or much farther away from the idea of faith.
- It will be the beginning of the end of the idea that one can be 'spiritual' without being 'religious'.
- A new branch of economic growth will be based on this.
- It will launch a whole new area of discrimination.
- It will become a powerful new wedge between the haves and the have nots.
- The stage will be set for a global disintegration of civility.



References

- Illes J 2003 Neuroethics in a new era of neuroimaging)Illes, J. (2003). Neuroethics in a new era of neuroimaging. *American Journal of Neuroradiology*, 24, 1739-1741.
- Kane R Oxford handbook of free will)Kane, R. (n.d.). *Oxford handbook of free will*. Retrieved April 2, 2010, from Oxford University Press Web site: http://books.google.com/books?hl=en&lr=&id=W340Q1LzR5AC&oi=fnd&pg=PR13&dq=theological+implications+of+neuroimaging&ots=4j_eyphBOZ&sig=OPIPYaeaqRcuVVdzgmApEPgJ_YA#v=onepage&q=&f=false
- Khurana R Nohria N Pierce D 2008)Khurana, R., Nohria, N., & Pierce, D. (2008). Retrieved March 30, 2010, from Harvard Business School Web site: <http://hbswk.hbs.edu/item/4650.html>
- Nichols S 2008 Free will versus the programmed brain)Nichols, S. (2008). Free will versus the programmed brain. *Scientific American*, , . doi:<http://www.scientificamerican.com/article.cfm?id=free-will-vs-programmed-brain&page=2>
- Oxford University Press 2009 Oxford American Writers Thesaurus)Oxford University Press . (2009). *Oxford American Writers Thesaurus*. Retrieved April 1, 2010, from <http://www.encyclopedia.com/doc/10996-immoral.html>