

# ‘From Quackery to Orthodoxy: History and the Neuroscience of Addiction’

*“The science of phrenology is dead, but it had about the same relation to brain and mental physiology as astrology did to astronomy, or alchemy to chemistry.*

*It was an error, but an introduction.”*

*Dr. Leslie E Keeley,*

*“The Relation of Mind and Brain,”*

*17 September 1896*

Dr. Timothy A. Hickman,  
Lancaster University

# Alan I. Leshner's NIDA Paradigm

- 'Addiction is a Brain Disease, and It Matters,' *Science*, Vol. 278  
(3 October 1997), 45-70.



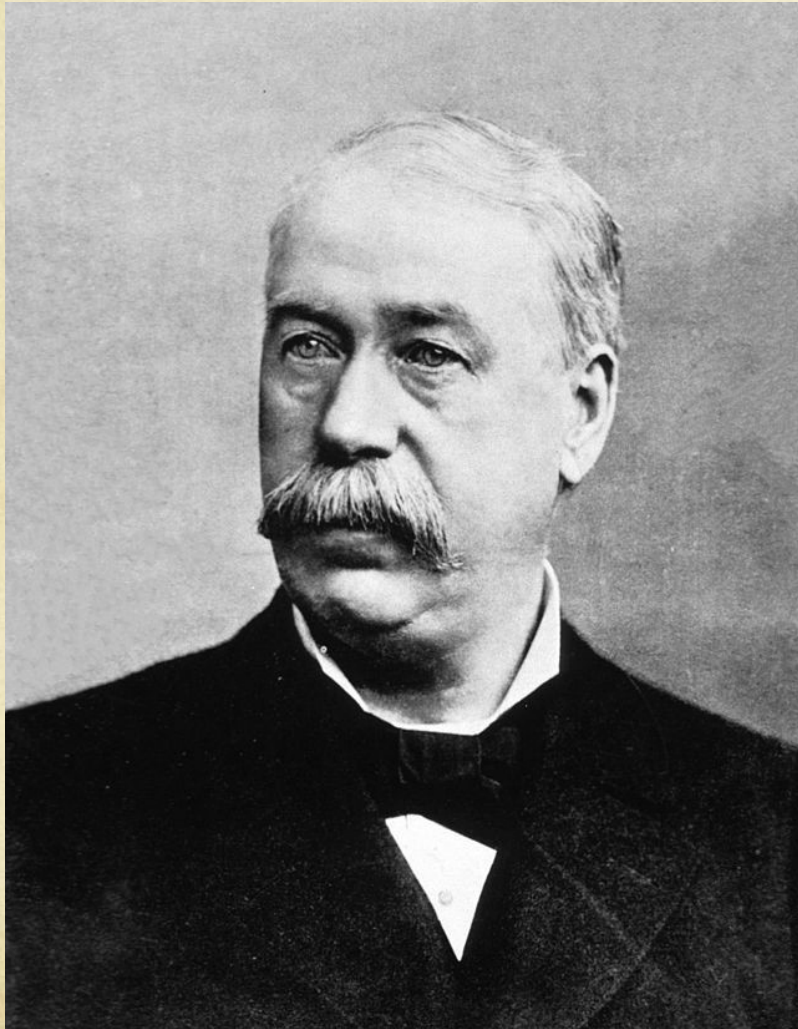
Alan I. Leshner, Ph.D.  
CEO, American Association for the Advancement of Science  
and former director of NIDA  
(1994-2001)

Leshner, 'Addiction is a Brain Disease, and It Matters,'  
*Science*, Vol. 278  
(3 October 1997), 45-70.

- “addiction as a chronic, relapsing disease of the brain is a totally new concept for much of the general public, for many policymakers, and, sadly, for many health care professionals.” (46)

# Dr. Leslie E. Keeley

## 1836-1900



All Keeley references in today's paper are to MS boxes 22-24, Papers of the Leslie E. Keeley Company, Lincoln Presidential Library, Springfield Ill.

# “We Belt the World”

A Keeley Co. trademark from the 1890s



# Keeley, 1894

- “the physiological action of opium is to diminish the natural forces of the nervous system. It does more than this if continued too long, it produces an isomeric change in the structure of the nerve and its action which is expressed by the word morphism.” (Keeley, 22: A3)

# Leshner, 1997

“Not only does acute drug use modify brain function in critical ways, but prolonged drug use causes pervasive changes in brain function that persist long after the individual stops taking the drug.” (Leshner, 1997)

- “the physiological action of opium is to diminish the natural forces of the nervous system. It does more than this **if continued too long, it produces an isomeric change in the structure of the nerve** and its action which is expressed by the word morphism.” (Keeley, 1894)
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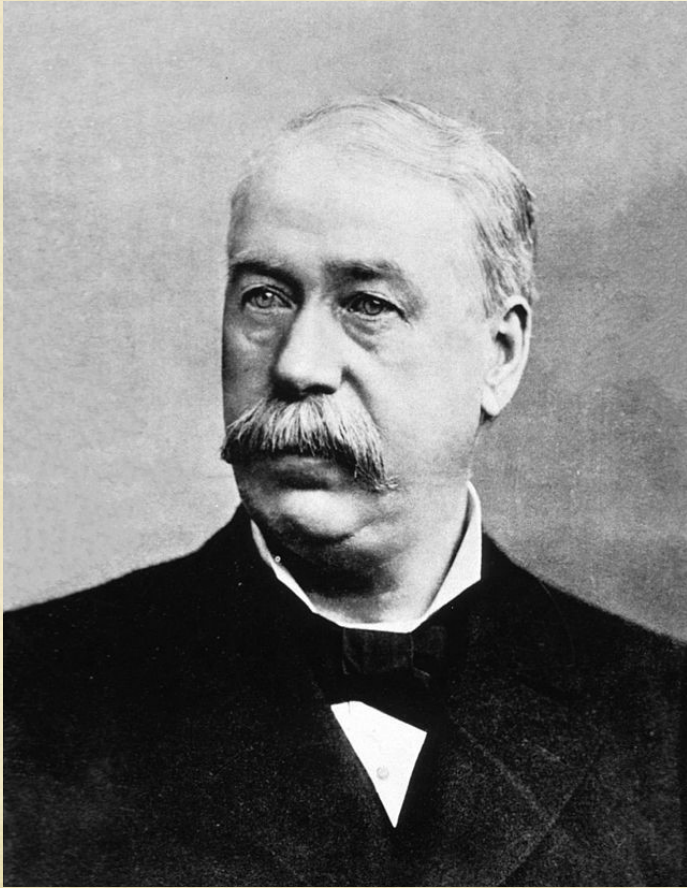


# Leshner, 1997



“significant effects of chronic use have been identified for many drugs at all levels: molecular, cellular, structural, and functional” (46)

# Keeley, 1894



“The habit of opium eating then, and its pathology, is when studied objectively a condition of isomeric change in the nervous system at large, produced by opium ... Every fibre of [a user’s] nervous system has undergone the isomeric change of opium.” (Keeley, 22A: 4)

# Crothers on Keeley, 1892

“within two years one of these empiric specific cures has led all the others in boldness and prominence. Starting from an obscure Western village, it has spread out into many branches, all organized and conducted on one general plan and federated together. Physicians have been enlisted to conduct each branch, companies have been organized, houses hired, and elaborate arrangements made for the work.” (Keeley, 23F: 2)

## Keeley's Reply:

“Dr. Crothers is quite correct that the business plan of these institutes... is well systematized, that they are in charge of educated and accomplished physicians, that they are all well patronized, that the methods employed will, do and have cured inebriety in a few weeks.”

(Keeley, 23F: 3)

# Keeley, 1896

“the true pathology of this disease is a craving for the drug which caused the disease, and poisoning by the drug. The disease as such, is not hereditary.” (Keeley, 22D: 1)

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“the true pathology of this disease is a craving for the drug which caused the disease, and poisoning by the drug. The disease as such, is not hereditary.” (Keeley, 22D: 1)

“the heredity of inebriety reaches no further back in any practical sense than the cradle and the nursery where children are fed opiates and alcohol for sickness, and even for crying.” (Keeley, 22D: 1)

# Keeley, 1896

“poisoning of nerve tissue comes under another law which is that the poison acts the most where the resistance is least. Alcohol, opium, hasheesh, chloral, ether, etc. follow this rule. In civilized people the higher moral faculties are built up last in brain and mental development. The representative brain tissue is therefore more unstable, and less resistant.” (Keeley, 22D:6)

## Keeley, ca. mid-1890s

“the same general law holds good in the pathology of all inebriety. All poisons first put their individual stamp upon the brain and nerve tissues.” (Keeley, 23B:7)



# Keeley, 1894

“the structure of the nerve is changed, every molecule is in company with a molecule of opium, which changes the action of the nerve.” (Keeley, 22A:13)

# Keeley, 1894

“it is not unreasonable to suppose that the molecules of opium may hold a relation as close to those of the nerve in this pathology as are the molecules of hydrogen and oxygen in water,” (Keeley, 22A:4)

# Keeley, 1894

“Gold acts primarily upon the nerve tissue that is most unstable or that is highest in its complex development and function. This nerve tissue is the brain.” (Keeley, 22A:13)

# Keeley, 1894

“will cure a diseased nerve as well as develop those which are too small to otherwise be discovered,” and explained that “it will be seen from these facts that the effect of gold upon nerve tissue restoring it to a natural condition is perfectly marvelous.” (Keeley, 22A:11-12)

# Keeley, 1894

“the Gold Cure destroys the education imposed on the brain by drinking. It breaks up the whole list of symptoms—the crave for liquor, the debauch, the period of sobriety, the remorse. It regenerates the diseased tissues.” (Keeley, 22A:8)

# Keeley, ca. mid 1890s

“the ethics of the medical profession is to denounce...  
anything in medicine which is not strictly ethical,”  
(Keeley, 24H:5)

# Keeley, ca. mid 1890s

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anything in medicine which is not strictly ethical,”  
(Keeley, 24H:5)

“The Gold Cure for inebriety, though it cures thousands  
of this disease, is not considered quite ‘ethical’ because  
the special formula is not made public.” (Keeley, 24H:5)

## Keeley, ca. mid-1890s

“the world is clamoring for the secret of my cure... They demand my property in the name of ‘humanity,’” but he explained that his “crime consists in being paid for honest and successful work. It is not a detriment to the morality of this work if the magnitude is great.” (Keeley, 23C: 9)



**Attention Workingmen!**

**MASS-MEETING**

TO-NIGHT, at 7.30 o'clock,

HAYMARKET, Randolph St., Bet. Desplaines and Halsted.

Good Speakers will be present to denounce the latest atrocious act of the police, the shooting of our fellow-workmen yesterday afternoon.

Workingmen Arm Yourselves and Appear in Full Force!

THE EXECUTIVE COMMITTEE.

**Achtung, Arbeiter!**

Große

**Massen-Versammlung**

Heute Abend, 7 1/2 Uhr, auf dem

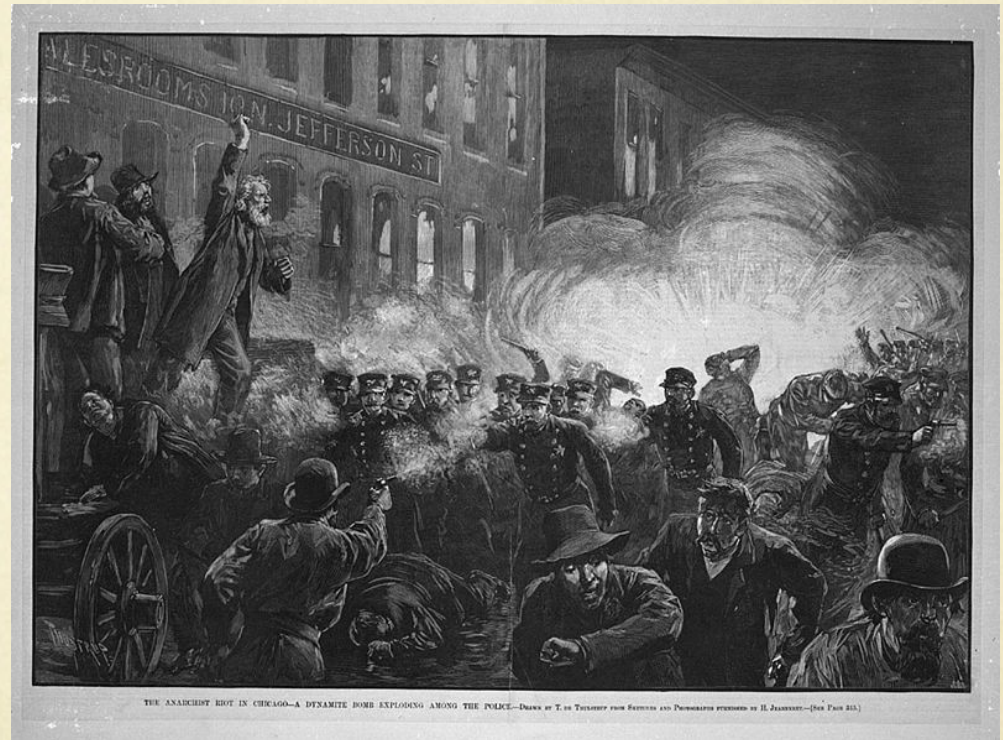
**Seumarkt, Randolph-Strasse, zwischen Desplaines- u. Halsted-Str.**

Gute Redner werden den neuesten Schurkenstreich der Polizei, indem sie gestern Nachmittag unsere Brüder erschoss, geißeln.

Arbeiter, bewaffnet Euch und erscheint massenhaft!

Das Executiv-Comite.

# Haymarket Square Riot/Massacre, 4 May 1886



THE ANARCHIST RIOT IN CHICAGO—A DYNAMITE BOMB EXPLODING AMONG THE POLICE.—DRAWN BY T. W. TULLOCH FROM SKETCHES AND PHOTOGRAPHS SUPPLIED BY H. J. JARVIS.—(SEE PAGE 215.)

‘The Anarchist Riot in Chicago...’  
Illustration from *Harper’s Weekly*, 15  
May, 1886

## Keeley, ca. mid-1890s

“according to this terrible social theory, no man has any right to property in thought, or knowledge, or money, if an anarchist should want it. It seems to me that laws are made and maintained to protect people in the rights of property—mental property as well as money.” (Keeley, 23C: 7)

# Keeley, 1895

“I can cure inebriety in any man, under any conditions, who has the disease; but I cannot make his environment for him to live in afterwards. I do not claim either that inebriety can be so effectually cured that a man cannot drink if he wills so to do... If he drinks again, he does it because he becomes reckless, through illness or misfortune, or because for some reason, he cannot appreciate a condition of sobriety.” (Keeley, 23M:2)

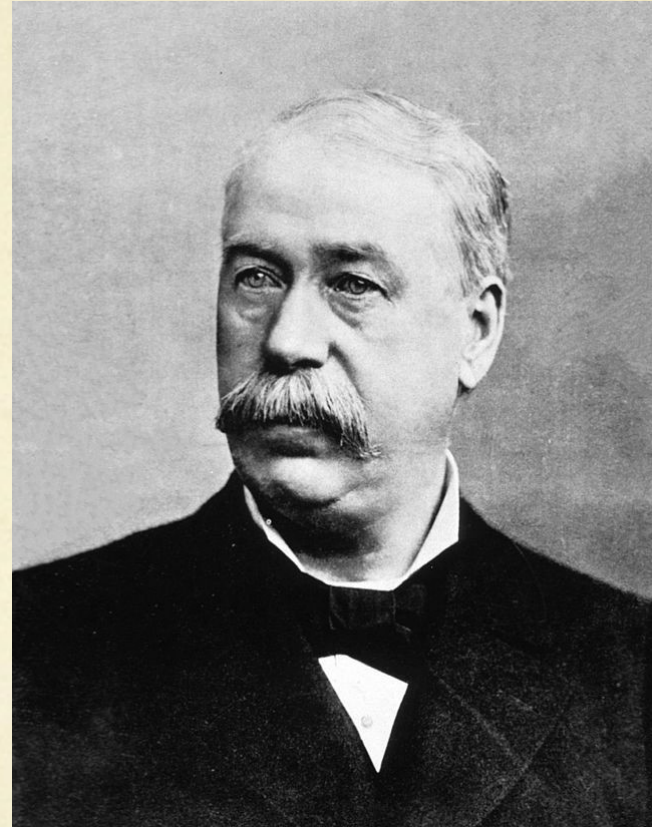
*Dwight Star and Herald, 24*  
February, 1900

‘You can’t inject brains into a man with a  
hypodermic syringe.’

Leshner, 'Addiction is a Brain Disease, and It Matters,'  
*Science*, Vol. 278  
(3 October 1997), 45-70.

- “addiction as a **chronic, relapsing disease** of the brain is a totally new concept for much of the general public, for many policymakers, and, sadly, for many health care professionals.” (46)

# Conclusion



Back to the Future, or, why does likeness matter?

- “what constitutes a real medical problem may be largely in the eyes of the beholder or in the realm of those who have the authority to define a problem as medical. It is the viability of the designation, rather than the validity of the explanation that is grist for the [historical] mill.”

Peter Conrad, *The Medicalization of Society: On the Transformation of the Human Condition into Treatable Disorders* (Baltimore: The Johns Hopkins University Press, 2007), 4.

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