

Portland State University

PDXScholar

---

Systems Science Friday Noon Seminar Series

Systems Science

---

10-23-2009

# Doing the History of Science and the Suspension of Belief

Richard H. Beyler

*Portland State University*

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/systems\\_science\\_seminar\\_series](https://pdxscholar.library.pdx.edu/systems_science_seminar_series)



Part of the [History of Science, Technology, and Medicine Commons](#)

Let us know how access to this document benefits you.

---

## Recommended Citation

Beyler, Richard H., "Doing the History of Science and the Suspension of Belief" (2009). *Systems Science Friday Noon Seminar Series*. 40.

[https://pdxscholar.library.pdx.edu/systems\\_science\\_seminar\\_series/40](https://pdxscholar.library.pdx.edu/systems_science_seminar_series/40)

This Book is brought to you for free and open access. It has been accepted for inclusion in Systems Science Friday Noon Seminar Series by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

# Doing the History of Science and the Suspension of Belief

Samuel Taylor Coleridge,  
*Biographica Literaria*  
(1817):

“the willing suspension of  
disbelief”



“suspension of belief”: to maintain a sense of historicality, contingency of events

Cultural myths: “myths” not in the sense of truth or falsehood, but concepts important (necessary?) to the functioning of society and my identity in it

“doing the history...”: shorthand for  
researching, teaching, writing, studying, etc.

therefore A human activity in a cultural context

problem of reflexivity

Cultural myth 1. “Advancement” is its own explanation; or, nothing succeeds like success.

From the historical perspective, the “correctness” of a theory is not a sufficient historical explanation of its coming into being. It may be a necessary explanation—but maybe not even that.

At the very least: given all that there is to know, why do we know this and not that?

historiographical/philosophical variants:

avoiding “whiggishness” (Herbert Butterfield,  
*The Whig Interpretation of History*, 1931)

symmetric and impartial explanation (social  
constructivist “strong programme,” ca. 1976)

the “pessimistic induction on the history of  
science” (Larry Laudan, 1981)

an example from my own work:

writing the biophysics/radiation biology in the  
1920s-30s without the retrospective shadow  
of molecular biology

cf. Robert C. Olby, *The Path to the Double Helix*  
(1974)



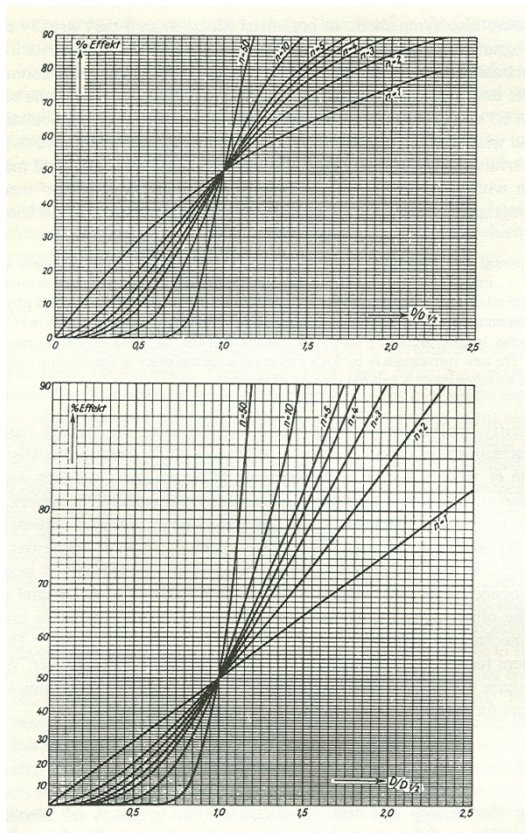
more specifically:

N. W. Timoféeff-Ressovsky, K. G. Zimmer, and M. Delbrück, “Über die Natur der Genmutation und der Genstruktur” [On the Nature of Gene Mutations and Gene Structure] (1935)

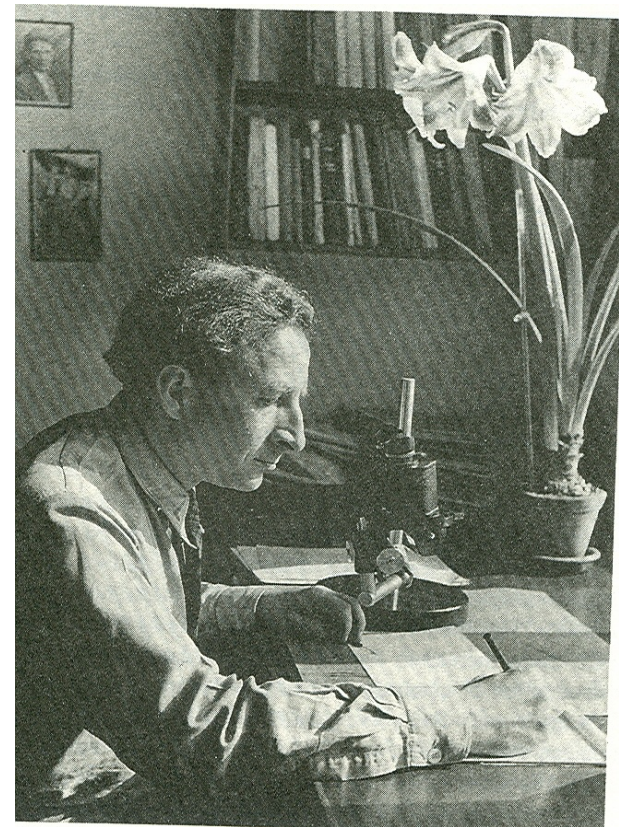
uses “target theory” to account for genes as a molecule-sized “arrangement of atoms” (*Atomverband*) and mutation as a rearrangement thereof

a “successful failure”? (Zimmer, 1966)

# Examples of target theoretical dose-response curves (Zimmer, 1941)



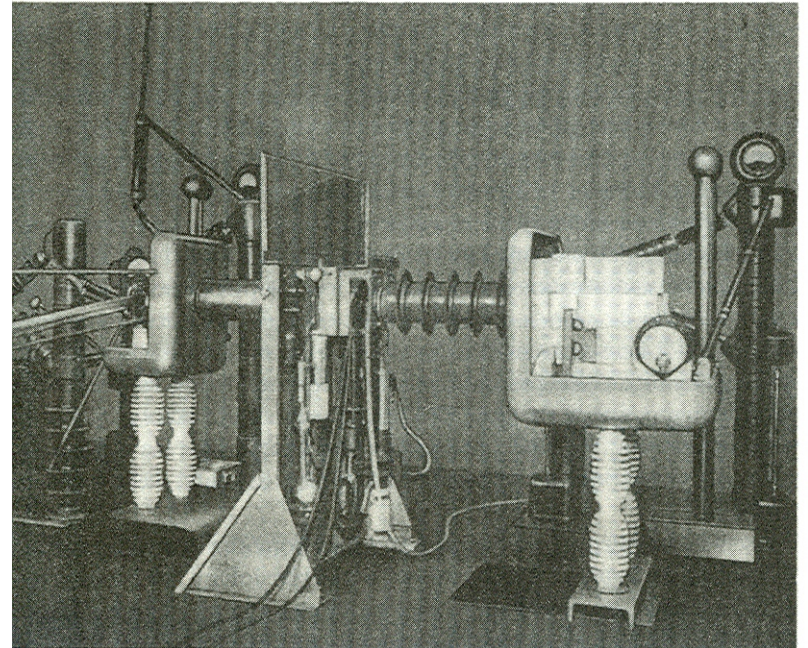
# Nikolai W. Timoféeff-Ressvosky



**Friedrich Dessauer (co-founder of target theory) and Boris Rajewsky**



**Timoféeff & Zimmer's neutron generator**



2. Cultural myth 2. “knowledge for its own sake”  
(McClellan and Dorn, 1999)

I’d like to believe, but as a historian I must say ...  
I don’t know what this would be.

Corollary: “science vs. \_\_\_\_\_” is usually not a  
satisfactory historical account

Examples/applications from my own work  
(research, teaching):

Science during (and after) the National Socialist regime, e.g., the *deutsche Physik* controversy: science ipso facto as a site of resistance? Unfortunately, probably not.

the Manhattan Project: students' negative moral assessment

“science vs. religion” remains for students a unexamined narrative: in some historical cases yes, but not a universal historical explanation