

Similarity as Toxicity:  
Hazards Associated with Look-Alike and Sound-Alike Names

Bruce L. Lambert, Ph.D.  
University of Illinois at Chicago  
lambertb@uic.edu  
(312) 996-2411

Strategies for Error-Proofing Drug Labeling, Packaging, and  
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## Some Thought Experiments and Challenging Analogies

- Similarity is a kind of ‘cognitive toxicity’
- Look-Alike/Sound-Alike errors are analogous to drug interactions (i.e., similar drugs interact in memory to cause confusion)
- Drugs are physical, material substances, but they are also abstract, information objects (i.e., drugs exist in physical space and in cyberspace)

## Similarity as Toxicity

- Toxicity testing is a necessary evil
- Bad toxicity results can kill a promising drug
- No company would consider not doing toxicity testing
- Similarity is a kind of toxicity
- Similarity has its ill effects on memory, perception, and action
- Bad similarity results might kill a promising name
- No company should consider not doing ‘cognitive toxicity’ tests

## Look-Alike/Sound-Alike Errors as Drug Interactions

- LASA errors are a kind of drug interaction
- Similar names interact in the brain/mind to cause errors in memory, perception, and action
- Presence of these interactions can be just as hazardous as ‘real’ drug interactions
- Must attempt to screen for and avoid such interactions

## Material Substances vs. Information Objects

- Most of the safety testing of drugs focuses on their physical and biochemical properties.
- Now and increasingly in the future, drugs will also exist as information objects in cyberspace
- It may someday be more common to encounter a drug as an information object than as a material/physical object
- Must begin to explore drugs as information objects
- Must understand the ‘kinetics’ and ‘dynamics’ of drugs-as-information-objects
- Must avoid collisions/confusions in cyberspace
- Need ‘zone-of-safety’ in cyberspace around each drug product

## The Need for Change in Safety Studies of Nomenclature

- Advances in basic science often necessitate innovations in biological studies, safety studies, and formulation studies (e.g., once upon a time, drugs weren't tested on women or minorities, studies of teratogenicity were not routinely done, etc.)
- There have been advances in the basic science of psychology that necessitate new kinds of safety testing of nomenclature
- We now know (in fairly great detail) how short term memory for verbal information works
- We are now compelled to make innovations in safety testing of nomenclature that take into account the advances in basic science