

# A LINE ON LIFE

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## "Breech and the Spain" \*

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No, you haven't misread the title, and it isn't a misprint. It is an example of a "*Spoonerism*" – a slip of the tongue named after an Anglican clergyman known for such mistakes – William A. Spooner. For example, if he wanted to say, "*I want the best in bread*," it might come out, "*I want the breast in bed*." Psychologists – at least those interested in how we access and develop language – use this and other speech problems to find out how normal speech works.

Dr. Gary Dell, professor of psychology at the University of Illinois, Urbana-Champaign, explores these errors by using computer programs to model human speech.

*"If you want to know how something works, look at how it breaks down. Speech errors can be looked at as breakdowns in the normal speech-production system. By looking at their properties, we can develop some idea of the process involved in translating thoughts into speech."*

The first of two basic types of speech errors is the **sound slip**, such as in Spoonerisms. Sounds of one word are interchanged with sounds of another word. The second is a **word error** or **semantic error** that changes the meaning of a sentence. For example, I might say, "*I gave my sister to my dog*," rather than, "*I gave my dog to my sister*."

Dell sees at least two stages in finding words to say. The first is word retrieval, and the second is sound retrieval. However, even if errors are made, they will not violate the rules of English. Rather than "*blue bug*," you might say "*blue blug*." However, you won't say, "*blue lbug*," because the "*lb*" sound at the beginning of a word violates the rules of English.

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***"When you make a slip – even though it's wrong –  
what comes out is still very well-formed."***

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Dell sees the relation between the mind and the brain as very much like the relation between the software – the computer program – and the computer itself. By using data on natural speech and speech errors, Dell is designing a computer program that will mimic human speech errors.

Language researchers typically agree that some meaning gets activated in the brain from what you sense. Then the meaning is changed to a word-as-a-whole. This is broken down into word sounds to be spoken. (It happens so quickly, we are not even aware of this process.)

From the original stimulus, various networks of nerves are stimulated to find appropriate words. If you are thinking about a small animal in a house, this could trigger activation for many linked words – depending on your past experiences – like "*dog*," "*cat*" and "*rat*." In turn, this will activate respective letters ("d-o-g," "c-a-t" and "r-a-t") or sounds called **phonemes**. However, since the computer prints the words rather than speaking them, it deals with letters rather than phonemes. Other words – which are phonetically linked – might also be activated, like "*log*" and "*mat*." In most people, the strongest connections will be used, resulting in normal speech. However, when other connections are formed (we still don't know how), speech errors result.

Even when errors are made, they still tend to result in real words rather than nonsense words. For example, the phrase, "dear old queen," is more likely to lead to the Spoonerism "queer old dean" than "dear quid oeen." However, the computer program only used real words when responding slowly. When it responded quickly, it seemed to lack the time to check the language rules. To test the accuracy of his computer model, Dell explored the same event with human subjects. Likewise, they only produced slips with whole words – rather than non-words – when they were speaking slowly.

By using computer models to analyze speech errors found with normal and brain-damaged people, Dell and others hope to find out how thoughts are translated into speech.

*"You learn something about the basic structure of human behavior, because speech itself is an extremely complex and intricate behavior. Ultimately, by studying language processing, you can learn what makes us human."*

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\* Adapted from Beth Azar's "Abnormal speech is target of research," [\*APA Monitor\*](#), April 1994, pages 20-21.