



IS THE BEAN DIZZY?

What do Spoonerisms reveal about motor control?

The Reverend William Archibald Spooner served at Oxford University in England for over 60 years as a priest and a history professor and in various other capacities. But, perhaps his most noteworthy legacy will be for the things he said, not what he did. Following are some of the many quotes attributed directly to Spooner: at a wedding, “It is kisstomary to cuss the bride”; to a student, “You hissed my mystery lecture”; to another student, “You have tasted the whole worm”; and to a secretary, “Is the bean dizzy?” Indeed, the term now given to such oratory gaffes, *Spoonerisms*, is a tribute to the legend of Reverend Spooner.

A closer look at the nature of Spoonerisms provides some insight regarding speech and motor control in general. Take, for example, “You hissed my mystery lecture.” Although the result is funny on one level (booing a confusing lecture), the error comes from a simple transposition of the first letters of two words, *h* and *m* (literally, “You *hiss*ed my *m*ystery lecture” rather than “You *miss*ed my *h*istory lecture”). A similar error resulted in Spooner asking a secretary, “Is the *bean dizzy*?” rather than “Is the *dean busy*?”

Errors such as Spoonerisms reveal that we plan our words well in advance of speaking them. That is, you would not expect a person specifically to transpose *hissed* for *missed*, unless the person were planning in advance to use that *h* later in the sentence. For example, Spooner did not say, “You kissed my mystery lecture,” because a word beginning with the letter *k* was not planned to be used later in the sentence. The “bean dizzy” example is also a clear case of mixing both the initial letters of the two words and their phonetic similarity. Another example, “You have tasted the whole worm,” shows that the mixed words need not be consecutive words in the sentence; here the words *the whole* are correctly inserted between Spooner’s attempt to say “wasted” and “term.”

The idea that errors result from mistakes in action planning may seem like a commonsense view today; it fits well with many views of motor control, such as motor program theory. However, this way of conceptualizing Spoonerisms was a radical departure from the dominant theory of behaviorism that ruled much of the thinking in psychology during the first half of the 20th century. According to the behaviorist view, we create serial orders of behavior by stringing together sequences of discrete actions, such that the completion of one action becomes the stimulus for the production of the next in the series. Behaviorist methods such as shaping and chaining used various

reinforcement techniques to train sequences of behaviors in experiments. The results of behaviorist techniques can readily be seen in the unnatural actions of trained animals, such as dancing bears and ball-balancing seals. According to the behaviorist view, a sequence of events is not planned in advance. Instead, the completion of one event in the chain becomes the stimulus to produce the next.

Karl Lashley, a physiological psychologist who conducted research during this dominant period of behaviorism, took a strong view against behaviorist theory, especially as it related to the performance of actions. Lashley argued instead that the brain creates behavior plans that allow a sequence of actions to be organized in advance and performed without the step-by-step, stimulus–response serial process proposed by behaviorism. Lashley’s views laid the groundwork for motor program theories of movement control, which will be discussed in greater detail in part II (e.g., see “Antilock Brakes” in chapter 5 and “Forensic Motor Control” in chapter 7). Basically, a motor program is a sequence of behaviors that are planned in advance and then “run off” under the control of the program when triggered by the performer.

Spoonerisms represent one type of motor error in which the advance preparation of the sequence goes astray. Many other examples from speech and other forms of serial behaviors (such as typing *hte* instead of *the*) are common and have been the focus of researchers for many years. But few are as notorious as the mistakes made by Reverend Spooner.

SELF-DIRECTED LEARNING ACTIVITIES

1. Define *Spoonerism* in your own words.
2. What is behaviorism in the tradition of experimental psychology? Do some research if needed to find out what behaviorism suggests about (a) the production of movement, (b) the role of reinforcement in learning, and (c) the roles of cognition and information processing.
3. Keep a log (or diary) over a five-day period, and document all examples of substitution, transposition, and other Spoonerism-type errors you observe in speech and language (e.g., in typing).
4. Using your log of errors from question 3, combine errors into categories. Be creative when considering why and how two or more very different errors may have resulted from a similar fundamental process.

SUGGESTED READINGS

- Bruce, D. (1994). Lashley and the problem of serial order. *American Psychologist*, 49, 93-103.
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- Rosenbaum, D.A. (2009). *Human motor control* (2nd ed.). San Diego: Academic Press.