



SCIENCE WRITERS & COMMUNICATORS OF CANADA



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■ ■ ■ Making Scientific Writing Something That Sticks to the Brain

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Figure 1 photo credit: heathbrother.com

Have you ever wondered about what makes science articles memorable? How come that some writers are remembered while others forgotten? One might say that the aim of academic papers is generally *not* to make the best argument and have the most interesting ideas, but rather to demonstrate that something is both statistically significant and those findings were derived from a sound methodology which others can duplicate and arrive at the same result. If the statistics and the methodology are no good, it doesn't matter how evocative the descriptions are, does it? So seems that the most basic science communications question is how to integrate the two very different ways of conveying "the truth," in a way that both are understood and remembered. Remembered facts turn into knowledge that can be used to change the world – the ultimate goal of science.

In their book "Made to stick," the [Heath](#) brothers offer an approach to making your ideas sticky and memorable (See Figure 1). The Californians, Chip and Dan, draw upon their experience from teaching at the Stanford University, consulting and publishing teaching literature, respectively. Both were obsessed by studying the process of learning and making it more effective. Having read the book, I'd like to focus on a key principle for impactful writing – the hooks – illustrated by three real-life examples in my own experience. I will also offer specific examples of science articles that don't tie what they are doing to an ordinary person's life experience, and show how added experiential references (hooks), could make articles stickier.

The Heath book is organised in accordance with to the acronym "[SUCCES](#)" (with the last s omitted). The letters refer to principles for making your ideas stick, as follows:

Simple — find the core of any idea

Unexpected — grab people's attention by surprising them

Concrete — make sure an idea can be grasped and remembered later

Credible — give an idea believability

Emotional — help people see the importance of an idea

Stories — empower people to use an idea through narrative

In the third chapter – Concrete - the [Heath](#) brothers introduce the “Velcro theory of memory” that says that the more *hooks* we can put into an idea, the stickier it will be (p. 109–111).” A hook can be anything that your readership has experience with, such as, stories about idiosyncrasies of your characters, weather forecasts or a cake recipe. It doesn’t have to be the opening line of your article. Hook works best if it builds on the experience or knowledge that the readers already have. They can relate to it easily and use it to remember scientific ideas readily. Here are three practical examples of article quotes where experiential references could have been used as effective hooks:

Example 1: Vague sentences confuse readers. They have to work harder to understand them. Show, don’t tell, is a rule that certainly applies to strong writing, including science writing. We show by using specific details, features, colours from ordinary person's life, or simply showing a picture of what we want, like I did in my hook after the following vague sentence:

“One prerequisite for the maintenance of dimorphism is that organisms experience a fitness trade off across environments. (p72)”

What is a fitness tradeoff? It’s certainly not a haircut. Sitting in the barber shop when I was 16, I held a book about Beatles in my lap. I adored them. I wanted to look like them. The problem was that staff in this cheap shop was simple and brash. I didn’t have much money to go to an expensive hair salon. When I showed them a photo of John Lennon, my barber shouted at her colleague: “Hey Sue, this is the last one today and look what I got. Why does this always happen to me?”

I felt embarrassed as she flicked through the photos in my book. After a short moment of silence she exclaimed: “That’s like a bowl cut.” Bingo! She got it and got to work on my haircut immediately. The hook to the most common haircut in that shop helped her to solve the problem. It fitted into her mental framework. In the vague sentence above, the “fitness tradeoff across environments” could have been made stickier by saying what organisms need to keep the two distinct forms and by giving a list of examples of dimorphic species who succeeded with “fitness tradeoffs.”

Example 2: An article about the influence of socio-structural determinants of health on people who use drugs concluded:

“... health problems that rendered them unstable and the complexity of their conditions precipitated numerous challenges related to their care.”

Instead, the article could conclude that: “... health problems that rendered them unstable and caused struggles with their care” and give readers a concrete problem or a challenge. For example, drawing upon their past experience with food industry, a clothing company designed a new bag to carry clean syringes for our [needle-exchange](#) project. This company didn’t have experience with small-scale made-to-order requests, but was willing to sit down with me and talk about my ideas. We drew pictures of different bags on the back of an envelope when the chief worker said: “That’s like a pizza bag.” She got it. Then, she brought blueprints of their recent design of a bag for a local pizza store. Our new bags worked well. What do people with serious health problems need? They need specialist care because their problems make their care difficult. It’s like driving a space-shuttle versus a tricycle; you wouldn’t go get them fixed in the same mechanic shop.

Example 3: In my last example, we read about genes, evolution and bio-diversity – terms known to most environmentalists. Following after this clumsy sentence is an example of a hook that deals with ecology (e-bikes) too:

“Some of the confusion about the role of hybridization in evolutionary diversification stems from the contradiction between a perceived necessity for cessation of gene flow to enable adaptive population differentiation on the one hand, and the potential of hybridization for generating adaptive

variation, functional novelty, and new species on the other (p66).¹”

Have you ever returned a Christmas gift? The first time I returned it was when I gave my wife a gift voucher to purchase an expensive electric bike. She was surprised and puzzled to find it under the Christmas tree. A year went by before I found myself returning the gift voucher in the bike shop. The staff was really friendly but needed time to process the unexpected return. After a moment of awkward silence, they said: “It's like a returned purchase.” I knew that they just found a hook in their past knowledge and experience that helped them navigate the new situation. If a customer returned a recent purchase, they would give them their money back, minus 15%; the reason being inability to re-sell the product as new. I got deducted only 10% because I haven't really bought anything.

The above biology excerpt could have used the contradiction to help the readers link the new information with their past experience. “I love you and I hate you,” is a great contradiction that most people understand well. We love someone's personality, but hate their manners. Genes have to stop flowing, but also need to keep growing for the sake of survival and evolution.

Remember, if you help your readers catalogue your idea in their existing experiential repository, if they file it within their own memory structure, they'll remember it. You're sticking to them.

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