

Quiz 1: Solutions

1. In his book “How We Learn” Benedict Carey describes the Forget to Learn principle. What does he mean by this and why is it important?

The name of the principle encapsulates the idea that forgetting is an integral part of learning. What is meant by forgetting here needs a little explanation. The idea is that memory can roughly be seen as consisting of two parts: storage and recollection. We have a huge capacity to store memories and things that are important to us eventually have a high storage strength. Recollection is our ability to find what we are looking for in our memory. Recollection is stronger for recent events and memories that we use frequently. Our ability to suppress recollection is part of what helps us to sift through the enormous input from our senses and environment. We forget, in the sense of suppressing recollection, some things to allow us to focus in and internalize others. Thus, the forgetting in the Forget to Learn principle is more closely related to recollection strength than to storage. This cuts through a lot of our cultural stereotypes about forgetting being a purely bad thing.

2. Answer the two questions below and explain your answers. If you feel that there is any ambiguity in either of the questions, feel free to clarify the question and answer your clarified version.

Mr. Jones has two children. The older child is a girl. What is the probability that both children are girls?

Mr. Smith has two children. At least one of them is a boy. What is the probability that both children are boys?

Let us agree to list the older child first and to use the abbreviations B for Boy and G for Girl. Then, for Mr. Jones the possibilities are GB and GG. The number of possibilities with GG is 1 and there are two possibilities and hence the probability is

$$P(GG) = 1/2 = 50\%.$$

For Mr. Smith the space of possibilities is different. In his case all we know is that one of the children is a boy, so the possibilities are BG, GB, and BB. Only one of these is BB and so we have

$$P(BB) = 1/3 = 33.33\%.$$

This can be counterintuitive and many people will have answered that the probabilities are $1/2$ for both situations. This answer can make sense too, for example if you assume that you know which of the two children is a boy. However, I will only accept this answer for full credit if the assumptions that lead to the answer are spelled out.

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3. Take an example from your self experiment and explain how you could use the “Concrete” principle from “Made to Stick” to make learning this example more sticky.

Answers to this question will vary widely due to the variety of self experiments. The key idea here is to take an abstract idea and to embody it in a concrete, sensory language. This comes up a lot in the context of goal setting. For example it is much more powerful to say “I want to be able to run 25 minutes on the elliptical trainer by October 9th without exceeding 95% of my max heart rate” than it is to say “I want to get more fit.”

The reading also covered how this can be usefully used to aid memory, to understand ethical and moral ideas, and to coordinate with each other on projects.