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Editing and Interleaving

Patrick Barry*

This essay suggests that a powerful learning strategy called “interleaving”—which involves strategically switching between cognitive tasks—is being underused. It can do more than make study sessions more productive; it can also make editing sessions more productive.

Introduction

A learning technique called “interleaving” has helpfully started to make its way into the study tips that law students receive. Journal articles promote interleaving.¹ Popular websites promote interleaving.² And at the University of Michigan Law School, where I teach, every J.D. student—along with every L.L.M.—is introduced to the concept even before classes start, during the initial days of orientation.

This essay, however, suggests that interleaving has an additional application, one that can help not just law students but also associates, partners, judicial clerks, judges, and anybody else whose professional success depends on efficiently managing multiple writing projects. Just as interleaving can make study sessions more productive, it can also make editing sessions more productive.

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¹ See, e.g., Jennifer M. Cooper & Regan R. Gurung, *Smarter Law Study Habits: An Empirical Analysis of Law Learning Strategies and Relationship with Law GPA*, 62 ST. LOUIS U. L.J. 361, 373 (2017); Jennifer M. Cooper, *Smarter Law Learning: Using Cognitive Science to Maximize Law Learning*, 44 CAP. U. L. REV. 551, 570–72 (2016).

² See, e.g., Matt Shinnars, *Master the LSAT with Learning Science*, ABOVE THE L. (Apr. 13, 2017, 11:34 AM), <https://abovethelaw.com/2017/04/master-the-lsat-with-learning-science/?rf=1>; Academic Support, *More Memory Advice for the Bar Exam*, LAW SCH. ACAD. SUPPORT BLOG (June 17, 2020), https://lawprofessors.typepad.com/academic_support/2020/06/more-memory-advice-for-the-bar-exam.html.

Section I offers a short overview of interleaving. Sections II and III show how it can help you produce better briefs.

I. Learning and forgetting

The leading proponent of “interleaving” is the psychologist Robert Bjork, who runs the Learning and Forgetting Lab at UCLA. “Particularly when one has several different things to learn,” explains his lab’s website, “an effective strategy is to interleave one’s study: Study a little bit of history, then a little bit of psychology followed by a chapter of statistics and go back again to history. Repeat (best if in a blocked-randomized order).”³

A key aspect of this approach is a concept Bjork calls “desirable difficulty.”⁴ There is something helpfully hard about following up a study session on, say, Constitutional Law with a study session on Contracts, instead of just doubling up on Constitutional Law. The cognitive work it takes to switch subjects has been shown to produce much deeper and longer-lasting comprehension.⁵ You can think of it as a form of intellectual cross training, where your mental muscles become stronger and more flexible because they are regularly stretched in different ways.

A related idea is called “spacing,” which involves strategically planning out your study sessions so that there are significant breaks between them.⁶ That way, your brain can put in a useful amount of effort to remember what you previously covered, a process that helps lay down more powerful—and more permanent—neural pathways to the information.⁷ Here’s how Bjork explains the payoff, “When we access things from our memory, we do more than reveal it’s there. It’s not like a playback. What

³ UCLA Bjork Learning & Forgetting Lab, *Research*, UCLA, <https://bjorklab.psych.ucla.edu/research/> (last visited Aug. 25, 2020).

⁴ ELIZABETH L. BJORK & ROBERT BJORK, *Making Things Hard on Yourself, But in a Good Way: Creating Desirable Difficulties to Enhance Learning*, in *PSYCHOLOGY AND THE REAL WORLD: ESSAYS ILLUSTRATING FUNDAMENTAL CONTRIBUTIONS TO SOCIETY* 56 (Morton Ann Gernsbacher et al. eds., 2009), https://bjorklab.psych.ucla.edu/wp-content/uploads/sites/13/2016/04/EBjork_RBjork_2011.pdf.

⁵ See, e.g., Robert Bjork & Judith Kroll, *Desirable Difficulties in Vocabulary Learning*, 128 *AM. J. PSYCHOL.* 241, 245–47 (2015); Henry L. Roediger & Kathleen McDermott, *Remembering What We Learn*, *Cerebrum* (July 19, 2018), <https://www.dana.org/article/remembering-what-we-learn/>.

⁶ See, e.g., Harry P. Bahrick et al., *Maintenance of Foreign Language Vocabulary and the Spacing Effect*, 4 *PSYCHOL. SCI.* 316, 316–21 (1993); Michael J. Kahana & Marc W. Howard, *Spacing and Lag Effects in Free Recall of Pure Lists*, 12 *PSYCHONOMIC BULL. & REV.* 159, 159–64 (2005), <https://memory.psych.upenn.edu/files/pubs/KahaHowa05.pdf>; John J. Shaughnessy, *Long-Term Retention and the Spacing Effect in Free-Recall and Frequency Judgments*, 90 *AM. J. PSYCHOL.* 587, 587–98 (1977).

⁷ See, e.g., Haley A. Vlach & Catherine M. Sandhofer, *Distributing Learning over Time: The Spacing Effect in Children’s Acquisition and Generalization of Science Concepts*, 83 *CHILD DEV.* 1137 (2012); Robert Bjork, *Memory and Meta-memory Considerations in the Training of Human Beings*, in *METACOGNITION: KNOWING ABOUT KNOWING* 185 (Arthur Shimamura & Janet Metcalfe eds., 1994).

we retrieve becomes more retrievable in the future. Provided the retrieval succeeds, the more difficult and involved the retrieval, the more beneficial it is.”⁸

For this reason, students of all kinds should spend *less* time simply re-reading their notes or highlighting material, and *more* time quizzing themselves; tools like flash cards push you beyond just recognizing material and move you toward the more useful task of retrieving it.⁹ Students might even consider reducing the amount of notes they take in class and instead waiting to take notes after class. Recalling content you’ve been taught is more effective than thoughtlessly copying down everything the teacher says.

II. The poet is working

The more I learned about interleaving and spacing, the more I began to wonder whether these techniques—and interleaving in particular—might be usefully applied to writing and editing. If there are cognitive benefits and productivity gains to switching between study subjects, might there also be cognitive benefits and productivity gains to switching between writing projects?

A visit to one of my classes by Jeffrey Fisher, the co-director of the Supreme Court Litigation Clinic at Stanford Law School and one of the most accomplished appellate-advocacy lawyers in the country, encouraged me to pursue that hunch.¹⁰ He told the students that he regularly works on three briefs at once. Going back and forth between cases, he said, really helps him spot and correct the errors in each brief.

An article in *The Chronicle of Higher Education* called “The Habits of Highly Productive Writers” supports Fisher’s approach.¹¹ Along with observations about how highly productive writers “leave off at a point where it will be easy to start again” and “don’t let themselves off the hook,” the author of the piece, Rachel Toor, suggests that highly productive writers also work on multiple projects at once.¹² “Some pieces need time

⁸ Garth Sundem, *Everything You Thought You Knew About Learning is Wrong*, WIRED (Jan. 29, 2012), <https://www.wired.com/2012/01/everything-about-learning/>.

⁹ Ralf Schmidmaier, Rene Ebersbach, Miriam Schiller, Inga Hege, Matthias Holzer & Martin R. Fischer, *Using Electronic Flashcards to Promote Learning in Medical Students: Retesting Versus Restudying*, 45 MED. EDUC. 1101–10 (2011); Jonathan M. Golding, Nesa E. Wasarhaley & Bradford Fletcher, *The Use of Flashcards in an Introduction to Psychology Class*, 39 TEACHING PSYCH. 39, 199–202 (2012).

¹⁰ To read more about Jeffrey Fisher, see *Jeffrey L. Fisher: Biography*, STAN. L. SCH., <https://law.stanford.edu/directory/jeffrey-l-fisher/#slnav-featured-video> (last visited July 15, 2019).

¹¹ See Rachel Toor, *The Habits of Highly Productive Writers*, CHRON. HIGHER EDUC. (Nov. 17, 2014), <https://www.chronicle.com/article/The-Habits-of-Highly/150053>.

¹² *Id.*

to smolder,” she explains. “Leaving them to turn to something short and manageable makes it easier to go back to the big thing. Fallowing and crop rotation lead to a greater harvest.”

Another benefit of the interleaving Fisher does is nicely articulated by something Toor notes earlier in her piece: a lot of writing gets done when you’re not actually writing. She uses a passage from the novel *The End of the Affair* by Graham Greene to illustrate what she means:

So much in writing depends on the superficiality of one’s days. One may be preoccupied with shopping and income tax returns and chance conversations, but the stream of the unconscious continues to flow, undisturbed, solving problems, planning ahead: one sits down sterile and dispirited at the desk, and suddenly the words come as though from the air: the situations that seemed blocked in a hopeless impasse move forward: the work has been done while one slept or shopped or talked with friends.¹³

But perhaps an easier, more playful way to remember this idea is through an anecdote that the French writer André Breton tells about a fellow poet. The poet apparently used to hang a notice on the door of his house every evening before he went to sleep. The notice stated, “THE POET IS WORKING.”¹⁴

The implication: My brain is working on things even when the rest of me is asleep.

III. Blocking vs. Interleaving

Of course, if you do not start projects, the parts of your brain that could help you out while you are sleeping or are off doing something else will not have any material with which to work. Those parts will also have less overall time to come up with ideas and solutions.

Consider Jeffrey Fisher again. Suppose he has three briefs to write in the same thirty-day month. He could focus entirely on the first brief during the initial ten days, entirely on the second brief during the second ten days, and entirely on the third brief during the last ten days.

But that “blocking” strategy would limit the amount of time he gives his subconscious to help with each brief to just ten days.¹⁵ By instead

¹³ *Id.* (quoting GRAHAM GREENE, *THE END OF THE AFFAIR* 19 (1951)).

¹⁴ André Breton, *Manifesto of Surrealism* (1924), 391 ISSUES, <http://391.org/manifestos/1924-manifesto-of-surrealism-andre-breton/> (last visited July 15, 2019).

¹⁵ For more on the difference between “blocking” and “interleaving” strategies, see Paulo Carvalho & Robert Goldstone, *Effects of Interleaved and Blocked Study on Delayed Test of Category of Learning Generalization*, 5 *FRONTIERS PSYCH.* 936 (2014).

interleaving and periodically switching between the three briefs over the course of the whole month, he increases the help he gets. His subconscious now has closer to the full thirty days to tinker, strategize, reverse course, rearrange arguments, generate new ideas, and do all the other mental work that good editing requires. He also enjoys the added bonus of not getting so wrapped up in one brief that he loses the ability to step back and revise it with some helpful cognitive distance.

The psychologist Adam Grant highlights a related set of benefits in “Why I Taught Myself to Procrastinate,” an essay he published in the *New York Times* in 2016.¹⁶ The youngest professor to earn tenure at the Wharton Business School, Grant is the kind of person who, in college, completed his senior thesis four weeks before it was due and, in graduate school, submitted his dissertation two years in advance.¹⁷ “For years,” he explains in the essay, “I believed that anything worth doing was worth doing early.”

His perspective changed, however, when he began collaborating with Professor Jihae Shin, who now teaches at the University of Wisconsin School of Business.¹⁸ Through a combination of experiments and survey data, Shin assembled a range of evidence showing that procrastination can actually lead to a boost in creative thinking—at least when done in a certain way.¹⁹ You don’t get the boost if your procrastination prevents you from starting a task in the first place.²⁰ You only get it if you do your procrastinating sometime between when you start and when you finish.²¹

“Our first ideas, after all, are usually our most conventional,” explains Grant, who eventually teamed up with Shin to publish a related set of findings.²² “My senior thesis in college ended up replicating a bunch of

16 Adam Grant, *Why I Taught Myself to Procrastinate* N.Y. TIMES: (Jan. 16, 2016), <https://www.nytimes.com/2016/01/17/opinion/sunday/why-i-taught-myself-to-procrastinate.html>.

17 *Id.*

18 *Id.*

19 Jihae Shin & Adam M. Grant, *When Putting Work Off Pays Off: The Curvilinear Relationship Between Procrastination and Creativity*, ACAD. MGMT. J. (Apr. 3, 2020), <https://doi.org/10.5465/amj.2018.1471>.

20 *Id.*

21 In a critique of Grant’s essay, the psychologist Tim Pynchyl distinguishes between “delay” and “procrastination”:

[Grant’s] notion of “the right kind of procrastination . . .” is the thesis and main error of the essay. The right kind of *delay* may make you more creative. I agree that being too quick off the mark for all of your tasks may be an ineffective strategy when careful thought is necessary first. But, please, let’s not play in this semantic cesspool. All delay is not procrastination, and it’s important to know the difference. When you figure that out, you’ll probably use delay more effectively, and you’ll probably be more creative.

Tim Pynchyl, *Procrastination as a Virtue for Creativity: Why It’s False*, PSYCH. TODAY (Jan. 18, 2016), <https://www.psychologytoday.com/us/blog/dont-delay/201601/procrastination-virtue-creativity-why-its-false>. For an additional critique, see Piers Steel, *The Original Myth*, PSYCH. TODAY (Apr. 8, 2016), <https://www.psychologytoday.com/us/blog/the-procrastination-equation/201604/the-original-myth#:~:text=The%20punchline%3A%20E2%80%9CThe%20procrastinators,What%20is%20this%20creativity%20scale.>

22 Grant, *supra* note 16.

existing ideas instead of introducing new ones. When you procrastinate, you're more likely to let your mind wander. That gives you a better chance of stumbling onto the unusual and spotting unexpected patterns."²³

Grant then shares how Shin's research prompted him to tinker with his previously hyper-focused approach to writing and editing. Instead of single-mindedly pursuing one project until it was completely finished, he intentionally put the project aside once he got through a first draft. Soon after returning to the draft, three weeks later, the payoff was clear. "When I came back to it, I had enough distance to wonder, 'What kind of idiot wrote this garbage?' To my surprise, I had some fresh material at my disposal."

Three weeks may seem like a long time to leave a document dormant, especially if court deadlines are soon approaching. But even taking a few days—or simply a couple hours—can help. The point is to free up the mental space needed to view your writing through a more creative and discerning set of editorial eyes.²⁴

Plus, the beauty of interleaving is that taking a break from one document can be done by working on a different document. "Most mornings I'll spend time on two or three different writing projects," the prolific constitutional-law scholar Cass Sunstein has said of his own writing habits. "I like to go back and forth—if I'm stuck on one, I'll jump to the other."²⁵

I encourage my students to try something similar. Multi-tasking, I tell them, remains a bad idea. Study after study has demonstrated that our brains are not good at doing two things simultaneously.²⁶ But there can be some real benefits to "multi-projecting." When done strategically, interleaving at least one writing assignment with a second might mean that both turn out significantly better in the end.

23 *Id.*

24 For other endorsements of this kind of spacing, see Tonya Kowalski, *Toward a Pedagogy for Teaching Legal Writing in Law School Clinics*, 17 *CLINICAL L. REV.* 285, 338 (2011); Terry Jean Seligmann, *Why Is a Legal Memorandum like an Onion? A Student's Guide to Reviewing and Editing*, 56 *MERCER L. REV.* 729, 731–32 (2005); Christopher M. Anzidei, *The Revision Process in Legal Writing: Seeing Better to Write Better*, 8 *LEGAL WRITING* 23, 30 (2002).

25 Noah Charney, *Cass Sunstein: How I Write*, *DAILY BEAST* (July 11, 2017), <https://www.thedailybeast.com/cass-sunstein-how-i-write>.

26 See, e.g., Melina R. Uncapher & Anthony D. Wagner, *Minds and Brains of Media Multitaskers: Current Findings and Future Directions*, 115 *PROC. NAT'L ACAD. SCI.* 9889 (Oct. 2, 2018), <https://doi.org/10.1073/pnas.1611612115>.