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## Of Old Dogs and New Tricks - Can Law Schools Really Fix Students' Fixed Mindsets?

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# OF OLD DOGS AND NEW TRICKS—CAN LAW SCHOOLS REALLY FIX STUDENTS’ FIXED MINDSETS?

Sarah J. Adams-Schoen\*

## INTRODUCTION

Does the LSAT test students’ innate ability to “think like a lawyer”? Is IQ fixed? Does class rank predict a student’s ability to succeed in practice? While these indicators may or may not correlate to future success, law students’ responses to these questions—in other words, their *beliefs about the nature of intelligence*—likely correlate to their ability to respond effectively to the challenges of law school and, ultimately, law practice.<sup>1</sup>

Recent articles by Corie Rosen<sup>2</sup> and Carrie Sperling and Susan Shapcott<sup>3</sup> introduced a large body of research that suggests

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\* © 2014, Sarah J. Adams-Schoen. All rights reserved. Sarah Adams-Schoen is an Assistant Professor of Law and Director of the Institute on Land Use & Sustainable Development Law at the Touro College Jacob D. Fuchsberg Law Center. I am indebted to Lewis & Clark Law School Professor Steve Johansen, for inspiring me to delve into this research. I am grateful for the encouragement and critical feedback I received from Touro Law Center Professors Deborah Post, Marjorie Silver, Dan Subotnik, and Michelle Zakarin, and from the participants and instructors at the Legal Writing Institute July 2012 Writers’ Workshop and the ALWD Scholars’ Forum at the April 2013 Empire State Legal Writing Conference. The workshop and forum were perfect opportunities to walk my talk—that is, to embrace mistakes as opportunities to improve. I am also grateful to Professors Carrie Sperling and Susan Shapcott for generously sharing working drafts of their article with me.

1. See generally Carrie Sperling & Susan Shapcott, *Fixing Students’ Fixed Mindsets: Paving the Way for Meaningful Assessment*, 18 Leg. Writing 39 (2012) (providing a thorough review of the mindset research, examining its application to law schools, empirically testing incoming law students’ mindsets, and providing suggestions to improve assessment and feedback in law schools). For a concise history of the mindset research, see *id.* at 44–45 and accompanying footnotes 15–31.

2. Corie Rosen, *The Method and the Message*, 12 Nev. L.J. 160, 161 (2011) (arguing that “one possible explanation for law student depression lies in the institutional organization of law schools themselves, a model that encourages students to adhere to a belief in the fixed, or entity, theory of intelligence”).

3. See Sperling & Shapcott, *supra* n. 1; see also Leah M. Christensen, *Enhancing Law School Success: A Study of Goal Orientations, Academic Achievement and the Declining Self-Efficacy of Our Law Students*, 33 L. & Psychol. Rev. 57, 57 (2009) (testing whether “[top law students] innately possess superior skills or . . . [whether law schools can] teach

“fixed mindset” beliefs<sup>4</sup> set us up for failure, especially in challenging, high-risk pursuits like law school and law practice. This research suggests that fixed mindset beliefs rob us of our ability to learn from mistakes, which is an integral part of the process of mastering a skill.<sup>5</sup>

Specifically, this common belief system leads people to respond to mistakes, confusion, and challenges they perceive to be too difficult (think: law school and legal practice) with negative affect, including depression; ineffective strategies, including blaming the teacher, book, or opposing counsel, and even cheating and lower performance.<sup>6</sup> Rather than seeing mistakes or critical feedback as an opportunity for learning, the fixed mindset tells us that failures are indicators that we have hit the ceiling of our abilities.<sup>7</sup> Moreover, because we tend to see others through the same lens that we see ourselves, educators with the fixed mindset see their students’ poor performance as an indicator that the students lack the skill at issue and cannot develop it.<sup>8</sup> As a result, educators with a fixed mindset tend to set lower standards for students they perceive to have low aptitude.<sup>9</sup> This presents a troubling picture for law schools because law schools almost cer-

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law students the skills and strategies that will contribute to their success”); Corie Rosen, *Creating the Optimistic Classroom: What Law Schools Can Learn from Attribution Style Effects*, 42 McGeorge L. Rev. 319, 337–339 (2011) (briefly addressing applicability of mindset research to high incidences of depression among law students); Tracy Turner, Book Review, *Teaching Ourselves and Our Students to Embrace Challenge: A Review of Mindset: The New Psychology of Success*, 20 Persps. 122 (2012).

4. A “fixed mindset,” known in the scientific literature as an “entity theory,” is the belief that you have a fixed amount of an attribute such as intelligence—in other words, you have a certain amount of innate intelligence and whatever amount you have is not likely to change substantially over the course of your life. See Daniel C. Molden & Carol S. Dweck, *Finding Meaning in Psychology: A Lay Theories Approach to Self-Regulation, Social Perception, and Social Development*, 61 Am. Psychologist 192, 193 (2006) (discussing fixed and growth mindsets). In contrast, a “growth mindset,” referred to as an “incremental” or “malleable theory,” is the belief that attributes such as intelligence can grow with effort and education. *Id.* These beliefs are implicit, meaning that most people are unaware both that they hold a certain belief about intelligence and that others may hold a belief different from their own. Sperling & Shapcott, *supra* n. 1, at 45 nn. 29–31; see also Carol S. Dweck, *Mindset: The New Psychology of Success* 6–7 (Ballantine Bks. 2008) [hereinafter Dweck, *Mindset*] (presenting a lay person’s introduction to fixed and growth mindsets).

5. Carol S. Dweck & Ellen L. Leggett, *A Social-Cognitive Approach to Motivation and Personality*, 95 Psychol. Rev. 256, 257–262 (1988).

6. *Id.*; *infra* pt. I.

7. Dweck, *Mindset*, *supra* n. 4, at 32–39.

8. *Id.* at 197.

9. See *infra* sec. III(C) (discussing effect of educators’ mindsets on students).

tainly inadvertently reinforce a fixed mindset.<sup>10</sup> Additionally, because things like confusion and the perception of a high-stakes challenge can trigger maladaptive responses, including decreased performance, in fixed mindset students,<sup>11</sup> this research also presents a troubling picture for students facing high-stakes challenges such as being called on in Constitutional Law to discuss *Marbury v. Madison*,<sup>12</sup> sitting for the Bar exam, and beginning their law practices.

The good news is that mindsets themselves are malleable.<sup>13</sup> Rosen and Sperling and Shapcott introduce a number of methods that may, at least temporarily, induce a growth mindset in law students.<sup>14</sup> Although untested in the law school context, researchers have used similar methods to experimentally prime, or induce, a growth mindset in numerous populations, including children and adults and graduate and professional students.<sup>15</sup> The resulting shift in behavior is remarkable. Once the malleable mindset is induced, students respond with learning goals, accurate assessment of their current skill levels, and greater effort.<sup>16</sup> Significantly, these test subjects also respond to mistakes, confusion, and critical feedback by remaining enthusiastic for the task, welcoming feedback, and improving their performance.<sup>17</sup>

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10. Sperling & Shapcott, *supra* n. 1, at 58–63, 68–72; Rosen, *supra* n. 2, at 176–177; *see also infra* sec. I(C).

11. *See infra* nn. 87–98 (discussing effect of high-stakes challenges and other triggers on students with fixed mindsets).

12. 5 U.S. 137 (1803).

13. Sheri R. Levy et al., *Static Versus Dynamic Theories and the Perception of Groups: Different Routes to Different Destinations*, 5 *Personality & Soc. Psychol. Rev.* 156, 163 (2001).

14. Rosen, *supra* n. 2, at 182 (suggesting that law schools as institutions “should send an overt message of growth mindedness at the institutional level”); Sperling & Shapcott, *supra* n. 1, at 72–83 (discussing six methods for fostering a growth (“incremental”) mindset); *see also infra* sec. III(A).

15. *See infra* nn. 196, 217 (discussing and citing studies showing experimentally-induced growth mindset led students to adopt effective learning strategies); *see also* Levy et al., *supra* n. 13, at 163–164 (reviewing literature on inducing changes of mindset). Researchers often use simple methods, such as having subjects read a short article about the brain’s ability to continue developing, to induce test subjects to respond consistently with the growth mindset, typically in the context of short-term laboratory studies.

16. *See e.g.* Richard W. Robins & Jennifer L. Pals, *Implicit Self-Theories in the Academic Domain: Implications for Goal Orientation, Attributions, Affect, and Self-Esteem Change*, 1 *Self & Identity* 313, 329 (2002).

17. *See e.g. id.*

The bad news is that change is hard. And changing deeply held beliefs about ourselves is particularly hard.<sup>18</sup> For one thing, certain fixed mindset beliefs feel good (think: “My daughter is a naturally gifted writer”). And even if a deeply held belief feels bad (think: “I’m not really that smart—I’m just fooling everyone”), it turns out it is still hard to change the belief.<sup>19</sup> Although the scientific literature contains numerous studies that have successfully induced short-term changes in mindset, little information exists on how to induce long-term changes in mindset. Many of Rosen’s and Sperling and Shapcott’s recommendations are based on methods used in studies that measured only short-term changes in mindset, often in a laboratory setting.<sup>20</sup> The research on changing deeply held beliefs suggests that these methods may be insufficient, at least on their own, to counter the numerous characteristics of law school environments that reinforce the fixed mindset.<sup>21</sup>

But, studies that incorporate into their methodology research on changing deeply held beliefs may provide a roadmap for teaching a persistent, effective change in mindset.<sup>22</sup> This research recognizes that, for a change in a deeply held belief to be effective, the new belief must be both long-lasting and cognitively available—in other words, the new belief must be so ingrained that it comes to mind at critical moments.<sup>23</sup> The results from studies that incorporate this research suggest that law schools can not only teach students to adopt a growth mindset in the short-term, law schools can teach a persistent, cognitively accessible shift to the growth mindset.<sup>24</sup>

In Part I of this Article, I summarize the literature on mindsets as it relates to law students and law schools.<sup>25</sup> In Part II, I

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18. See Levy et al., *supra* n. 13, at 165 (citing studies demonstrating that people tend to resist information that threatens the mindset in which they operate).

19. See *id.* at 165–166 (discussing psychological needs served by fixed mindset); *infra* nn. 130–141 and accompanying text (discussing the same).

20. See *infra* pt. II (discussing research on changing deeply held beliefs); see *infra* pt. III (examining various methods for teaching law students a growth mindset).

21. See *infra* sec. I(C) (discussing characteristics of law school environment that induce and reinforce the fixed mindset).

22. See e.g. Joshua Aronson et al., *Reducing the Effects of Stereotype Threat on African American College Students by Shaping Theories of Intelligence*, 38 J. Experimental Soc. Psychol. 113, 116–123 (2002).

23. *Id.*

24. See e.g. *id.* at 123.

25. For a thorough examination of the research on mindsets and its applicability to

discuss the research on changing deeply held beliefs, like beliefs in the nature of one's intelligence. In Part III, I conclude that the steps for inducing a growth mindset in law students proposed by Rosen and Sperling and Shapcott<sup>26</sup> will likely induce the growth mindset; however, the science of change research suggests the change to a growth mindset that may result from use of these techniques may be temporary only or may not become sufficiently deeply ingrained to control at critical moments. I then discuss specific methods that may help foster an enduring, cognitively available shift to the growth mindset. These methods include a series of steps designed primarily for orientation or a first-year seminar or legal writing class, and an approach to feedback designed to trigger the adaptive responses associated with the growth mindset, which can be used in small and large law school classes and clinical settings. Finally, I examine how our own inadvertent fixed mindset reinforcing conduct may undermine these strategies.

*I. FIXED MINDSETS ROB MANY LAW  
STUDENTS OF THE ABILITY TO LEARN FROM  
CHALLENGES AND SETBACKS*

Why should law schools and professors care about their students' beliefs about the nature of intelligence? Because decades of research in a wide-range of settings and with diverse populations of test subjects strongly suggest that fixed mindset beliefs lead to helpless behavior in the face of perceived obstacles.<sup>27</sup> In other words, these beliefs tend to deprive students of one of the most valuable learning tools—failures.<sup>28</sup>

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law schools, see Sperling & Shapcott, *supra* n. 1, at 44–63.

26. See *id.* at 72–83; Rosen, *supra* n. 2, at 182–185.

27. See Sperling & Shapcott, *supra* n. 1, at 58–63 (reviewing literature and pilot study suggesting that students' fixed mindsets explain why many law students react maladaptively to assessment and feedback).

28. See *id.* at 73 n. 258 (citing research suggesting that failure is a necessary stage in learning).

### A. The Crux of the Matter Is Belief—Not Whether Intelligence Is in Fact Fixed

Many people are not comfortable discussing the effects of implicit theories of intelligence without first identifying a definition of intelligence.<sup>29</sup> Of course, scientists, philosophers, and educators have debated the meaning and nature of intelligence for centuries and that debate is not likely to end soon.<sup>30</sup> Is intelligence the ability to use stored memory adaptively,<sup>31</sup> to reason inductively and deductively,<sup>32</sup> to self-teach,<sup>33</sup> or some other ability<sup>34</sup> or combination of abilities?<sup>35</sup> The Board of Scientific Affairs of the American Psychological Association observed that no conception of intelligence “commands universal assent [and, indeed], when two dozen

29. See *id.* at 47 (observing that “[a]ny discussion of how implicit beliefs about intelligence drive students’ reactions to feedback must start by addressing the concept of intelligence”).

30. See generally Janet E. Davidson & Iris A. Kemp, *Contemporary Models of Intelligence*, in Robert J. Sternberg & Scott Barry Kaufman, *The Cambridge Handbook of Intelligence* 58–77 (Cambridge U. Press 2011) (summarizing contemporary theories of intelligence); Dweck, *Mindset*, *supra* n. 4, at 4–5.

31. See Lloyd G. Humphreys, *The Construct of General Intelligence*, 3 *Intelligence* 105, 115 (1979) (describing intelligence as “the resultant of the processes of acquiring, storing in memory, retrieving, combining, comparing, and using in new contexts information and conceptual skills”).

32. See Michael K. Gardner, *Theories of Intelligence*, in *The Oxford Handbook of School Psychology* 79, 83 (Melissa A. Bray & Thomas J. Keble eds., Oxford U. Press 2011) (describing “fluid” intelligence as including “deductive reasoning, inductive reasoning, understanding relationships among stimuli, comprehending implications, and drawing inferences”).

33. See Robert J. Sternberg, *The Theory of Successful Intelligence*, in Sternberg & Kaufman, *supra* n. 30, at 504 (asserting that intelligence is “typically defined in terms of a person’s ability to adapt to the environment and to learn from experience”).

34. See Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* 60–61 (Basic Bks. 2011) (“[H]uman intellectual competence must entail a set of skills of problem solving—enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an effective product—and must also entail the potential for finding or creating problems—and thereby laying the groundwork for the acquisition of new knowledge.” (Emphasis in original)).

35. See Richard D. Arvey et al., *Mainstream Science on Intelligence*, Wall St. J. A18 (Dec. 13, 1994) (available at <http://www.udel.edu/educ/gottfredson/reprints/1994WSJmainstream.pdf>) (a letter from fifty-two researchers to the Wall Street Journal, defining “intelligence” as “[a] very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings—‘catching on,’ ‘making sense’ of things, or ‘figuring out’ what to do.”). Sternberg also asserts that “intelligence best serves individuals and societies when it is augmented by wisdom, the utilization of our abilities and knowledge, through the infusion of positive ethical values, toward a common good.” Sternberg, *supra* n. 33, at 505.

prominent theorists were . . . asked to define intelligence, they gave two dozen, somewhat different, definitions.”<sup>36</sup>

Moreover, researchers also debate whether intelligence is primarily “nature” or “nurture,” or some combination of both.<sup>37</sup> Some scientists continue to assert that intelligence is primarily fixed,<sup>38</sup> while others assert that intelligence is a combination of genetic and environmental factors.<sup>39</sup> Still others classify certain types of intelligence as fixed and other types as (at least somewhat) malleable.<sup>40</sup> According to Dweck, recent scientific research suggests that people have more capacity for lifelong learning and brain development than previously believed.<sup>41</sup> Although “each person has a unique genetic endowment,” Dweck writes that a major contributor in whether people achieve expertise “is not some fixed prior ability, but purposeful engagement.”<sup>42</sup> And the debate rages on . . . .

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36. Rep. of Task Force of Am. Psychol. Assn., *Intelligence: Knowns and Unknowns*, 51 Am. Psychol. 77, 77 (1996) (available at <http://www.gifted.uconn.edu/siegle/research/correlation/intelligence.pdf>). Moreover, what constitutes intelligence differs across cultures. For example, one culture may value as intelligent sorting objects linguistically while another culture values sorting objects functionally. See Jacqueline J. Goodnow, *The Nature of Intelligent Behavior: Questions Raised by Cross-Cultural Studies*, in Lauren B. Resnick, *The Nature of Intelligence* 170–171 (Lawrence Erlbaum Assocs., Inc. 1976) (reporting that the Kpelle people sort objects by function, e.g., knife with orange because knife cuts orange, and, when asked “how a fool would sort,” Kpelle responded a fool would put a knife with other implements and orange with other foods).

37. See generally Dweck, *Mindset*, *supra* n. 4, at 4–5.

38. See e.g. R. Plomin et al., *Variability and Stability in Cognitive Abilities Are Largely Genetic Later in Life*, 24 Behavior Genetics 207, 207–208 (1994) (finding strong genetic influences on IQ, especially in adulthood).

39. See e.g. Gilbert Gottlieb, *Normally Occurring Environmental and Behavioral Influences on Gene Activity: From Central Dogma to Probabilistic Epigenesis*, 105 Psychol. Rev. 792, 792 (1995).

40. For example, Raymond Cattell theorized that people have two types of intelligence, “fluid” and “crystallized.” Davidson & Kemp, *supra* n. 30, at 60. Fluid intelligence, which involves the ability to work with novel information, becomes fixed by young adulthood, and declines thereafter. *Id.* This is because fluid intelligence is dependent on the efficient functioning of the central nervous system, which declines after young adulthood. *Id.* at 60–61. Crystallized intelligence, which consists of an individual’s acquired skills and information, changes depending on environmental influences and increases or remains stable throughout adulthood. *Id.*; see also *id.* at 77 (noting that the emphasis on adaptability as an attribute of intelligence across contemporary models of intelligence suggests that “most contemporary models view intelligence as dynamic in nature”).

41. Dweck, *Mindset*, *supra* n. 4, at 5.

42. *Id.*; see also Davidson & Kemp, *supra* n. 30, at 68 (describing Sternberg’s theory of developing expertise, which involves the following five interactive elements: motivation, metacognitive skills, learning skills, thinking skills, and knowledge).



Fortunately, to effectively help law students overcome the maladaptive effects of fixed mindset beliefs and benefit from the adaptive effects of growth mindset beliefs, we do not need to agree on a definition of intelligence or decide whether intelligence is in fact fixed or malleable.<sup>43</sup> Rather, the mindset research shows that people's agreement with general statements like the following predict how they will respond to challenges: "Your intelligence is something about you that you can't change very much" or "You can change even your basic intelligence considerably."<sup>44</sup> Thus, because a person's *belief about intelligence*—however he or she defines that term—correlates to how a person responds to challenges, using the mindset research to help students learn more effectively does not require a consensus on the definition of intelligence.<sup>45</sup>

### B. Specific Characteristics of the Fixed Mindset and Growth Mindsets

Although both fixed mindset and growth mindset students tend to respond similarly when they believe they are succeeding,<sup>46</sup> students who believe intelligence is fixed tend to react to a perceived failure with a host of maladaptive behaviors.<sup>47</sup> Thus, students with a predominantly fixed mindset are particularly vulnerable to setbacks and perceived setbacks—such as a low grade or even constructive criticism on a draft paper.<sup>48</sup> Specifically, stu-

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43. See Aronson et al., *supra* n. 22, at 113–115 (explaining that focus is not on defining intelligence or determining whether intelligence is in fact fixed or malleable, but rather on the effect of beliefs about the nature of intelligence on cognition, affect and behavior); Sperling & Shapcott, *supra* n. 1, at 48 (asking readers to “suspend judgment on what intelligence is”).

44. See Sperling & Shapcott, *supra* n. 1, at 48 nn. 50–52 (citing studies).

45. See *infra* secs. I(B), I(C), and accompanying text; see also Sperling & Shapcott, *supra* n. 1, at 49–58 (discussing and citing numerous studies showing that mindset predicts behavior).

46. See e.g. *infra* tbl. 1 (summarizing study showing that fixed mindset and growth mindset students performed equally well under success conditions).

47. See Sperling & Shapcott, *supra* n. 1, at 49–58 (discussing and citing numerous studies showing how mindset predicts behavior); see also Dweck & Leggett, *supra* n. 5, at 257–263 (summarizing research).

48. See e.g. Sperling & Shapcott, *supra* n. 1, at 49–54 (summarizing research on students with the fixed mindsets' maladaptive behaviors in response to feedback); see also Robins & Pals, *supra* n. 16, at 329 (growth mindset students explained failure in terms of lack of effort rather than ability, showed less negative affective reactions, and demonstrated increased persistence rather than withdrawal in face of difficulty; fixed mindset students showed clear downward trajectory in self-esteem over college years compared with

dents with a fixed mindset respond to perceived setbacks by (1) losing enthusiasm for the task,<sup>49</sup> (2) devaluing effort,<sup>50</sup> (3) blaming the setback on their lack of ability or external factors (such as the teacher or flaws in the assignment),<sup>51</sup> and (4) adopting either the same ineffective strategy or less effective strategies for addressing the task in the future.<sup>52</sup>

Because students with the fixed mindset respond to perceived failures (and other triggers)<sup>53</sup> with negative affect, task avoidance, decreased effort, and blaming of one's environment as opposed to reexamining one's strategies, once triggered, the fixed mindset appears to also correlate to lower performance.<sup>54</sup> That is,

incremental theorists).

49. See e.g. Andrei Cimpian et al., *Subtle Linguistic Cues Affect Children's Motivation*, 18 Psychol. Sci. 314, 315 (2007) (study showing that ability-praised children responded to a perceived mistake with task avoidance).

50. See Elaine S. Elliott & Carol S. Dweck, *Goals: An Approach to Motivation and Achievement*, 54 J. of Personality & Soc. Psychol. 5, 6 (1988) (demonstrating that children with a growth mindset seek out challenges that require effort and children with an experimentally induced fixed mindset eschewed effort and challenge in favor of activities they knew they could succeed at); Ying-Yi Hong et al., *Implicit Theories, Attributions, and Coping: A Meaning System Approach*, 77 J. of Personality & Soc. Psychol. 588, 588–592 (1999) (study revealing the same effort- and risk-avoidant pattern in fixed mindset college students). Dweck explains that fixed mindset students avoid effort for two reasons. First, just needing effort casts doubt on the students' abilities. Second, once the students have put forth maximum effort and failed, they have no excuse. Thus, putting forth minimum effort is an ego-protecting strategy. Dweck, *Mindset*, *supra* n. 4, at 43. The fixed mindset students in these studies remind me of law students who fail to take advantage of professors' offers to discuss performance on a test, tutoring at the law school's writing center, or individual conferences with a professor.

51. Because any failure means you lack potential, it should come as no surprise that the fixed mindset leads students to blame their environments for their failures. In other words, this low grade does not mean my abilities are low or that I should change my study habits—it must be the teacher or the book or the school. See Barbara G. Licht & Carol S. Dweck, *Determinants of Academic Achievement: The Interaction of Children's Achievement Orientations with Skill Area*, 20 Dev. Psychol. 628, 628–629 (1984) (demonstrating that, after experiencing critical feedback, students with a fixed mindset tend to decrease their efforts, reduce their use of learning strategies, and attribute their failure to a lack of ability or uncontrollable factors such as the professor, test, class, grading or curve).

52. See e.g. *id.* at 628; Robins & Pals, *supra* n. 16, at 329.

53. See *infra* sec. I(C) (discussing triggers of the fixed mindset, including emphasis on performance and evaluation, high-stakes challenges, and difficult transitions).

54. Carol S. Dweck & Daniel C. Molden, *Self-Theories: Their Impact on Competence Motivation and Acquisition*, in Andrew J. Elliot & Carol S. Dweck, *Handbook on Competence and Motivation* 123–127 (The Guilford Press 2005); Dweck & Leggett, *supra* n. 5, at 258; see also Glenda Stump et al., Paper Presentation, *Student Beliefs about Intelligence: Relationship to Learning* at 4 (paper presented at 39th ASEE/IEEE Frontiers in Education Conference, San Antonio, Texas, Oct. 18, 2001) (available at <http://fieconference.org/fie2009/papers/1283.pdf>) (study demonstrating that engineering students who believe intelligence is malleable are more likely to engage in active learning in the form of collaborative learning strategies and knowledge building behaviors, and active learning strate-

once a fixed mindset student perceives he or she is failing at a task (or is triggered by another condition such as a high-stakes transition<sup>55</sup>), he or she is more likely than his or her growth mindset peers to fail at the task.<sup>56</sup> In other words, the fixed mindset student, once triggered, is more likely to become so derailed by the apparent failure or other trigger that he or she will perform poorly on subsequent tasks that are *within his or her range of aptitude*.<sup>57</sup> Thus, the fixed mindset, once triggered, correlates to lower performance on both challenging and easily attainable problems. Moreover, for fixed mindset students, failures include not only things like low grades, but also critical feedback, and even something as surmountable as a short confusing passage in a reading assignment that is otherwise within their range of aptitude.<sup>58</sup>

The following chart illustrates the effects of a single confusing passage within a test booklet on fixed mindset and growth mindset students. In this study, students were given a short comprehension test that was within their aptitude range—i.e., all the students had the ability to pass the test.<sup>59</sup> Some of the test booklets included a single confusing sentence in the middle of the material.<sup>60</sup> Following this single confusing sentence, the fixed mindset students adopted maladaptive behaviors, including lower performance on the remainder of the test, despite the fact that the remainder of the test was within their aptitude.<sup>61</sup> One possible explanation for this is that fixed mindset students decrease effort and reduce their use of learning strategies following a perceived failure.<sup>62</sup> Imagine the repercussions for a fixed mindset student who is flying along on the Bar exam and then hits a problem he or she does not understand.

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gies were significantly positively associated with students' course grade).

55. See *infra* nn. 88–98 (discussing Robins and Pals study of students navigating high-stakes, long-term challenge of college).

56. Licht & Dweck, *supra* n. 51, at 628–629 (after experiencing critical feedback, fixed mindset students decreased effort and reduced use of learning strategies).

57. *Id.*

58. *Id.* at 630–633; see also Sperling & Shapcott, *supra* n. 1, at 50 (describing Licht and Dweck study).

59. Licht & Dweck, *supra* n. 51, at 630–633.

60. *Id.*

61. *Id.*

62. *Id.* at 628–629.

Table 1: Vulnerability to Decreased Performance  
Following a Single Confusing Condition<sup>63</sup>

	No Confusing Condition	Confusing Condition
Fixed Mindset	Equally likely to master materials	35% mastered materials
Malleable Mindset	Equally likely to master materials	72% mastered materials

The potentially devastating effects of the perceived risk of failure on students with the fixed mindset are likely due, at least in part, to goal orientation—fixed mindset students tend to pursue performance goals, while growth mindset students tend to pursue learning goals.<sup>64</sup> Like the fixed mindset, performance-goal orientation correlates to negative cognition, affect, and behaviors in the face of challenges.<sup>65</sup> Additionally, research suggests that students who pursue performance goals are less likely to transfer learning in one area to new areas.<sup>66</sup>

One might assume that students with a growth mindset—who believe their potential is limitless—might overestimate their current aptitude, while students with a fixed mindset—who focus on performance and proving themselves—might more accurately assess their current aptitude. But, research suggests the opposite is true. Fixed mindset students are much more likely to inaccurately self-assess.<sup>67</sup>

The growth mindset also appears to correlate with adoption of effective coping strategies for dealing with depression and even negative stereotypes. Research suggests that college students with fixed mindsets tend to have both higher levels of depression

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63. *Id.* at 633.

64. Dweck & Leggett, *supra* n. 5, at 259–260 (demonstrating that fixed mindset correlates to performance goals and devaluing effort); Robins & Pals, *supra* n. 16, at 329 (demonstrating that growth and fixed mindsets correlate to adoption of learning and performance goals, respectively).

65. See Dweck & Leggett, *supra* n. 5, at 259–262; see also Ruth Butler, *Making Judgments about Ability: The Role of Implicit Theories of Ability in Moderating Inferences from Temporal and Social Comparison Information*, 78 *J. of Personality & Soc. Psychol.* 965 (2000).

66. Dweck & Leggett, *supra* n. 5, at 260.

67. Dweck, *Mindset*, *supra* n. 4, at 11 (citing studies by David Dunning and Joyce Ehrlinger).

and employ fewer coping skills.<sup>68</sup> For example, in a study by Allison Baer, Heidi Grant, and Carol Dweck, fixed mindset college students suffered from an increased vulnerability to depression.<sup>69</sup> Additionally, the more depressed the fixed mindset college students felt, the more they failed to take actions that would lead to success such as handing in assignments on time or studying.<sup>70</sup> Not surprisingly, the growth mindset is not a panacea—although fewer of the growth mindset students suffered from depression, many of these students also suffered from depression.<sup>71</sup> But, the study revealed that the more depressed the growth mindset students felt, the more they worked to keep up with their homework and other areas of their lives.<sup>72</sup> Significantly, after inducing the growth mindset in the fixed mindset students, the students became more motivated to face their challenges and exhibited more active problem solving.<sup>73</sup>

Students with a growth mindset who experience a phenomenon that some researchers characterize as “stereotype threat” may also employ more effective coping strategies than their fixed mindset counterparts.<sup>74</sup> “Stereotype threat” is the “extra cognitive and emotional burden” that a person bears when he or she perceives that others are judging him or her through the lens of a negative stereotype.<sup>75</sup> Aronson, Fried, and Good describe the burden of racial stereotype threat as follows: “This burden takes the form of a performance-disruptive apprehension, anxiety about the

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68. *Id.* at 37–38 (describing study and citing unpublished manuscript, “Personal Goals, Dysphoria, & Coping Strategies” by Allison Baer, Heidi Grant, and Carol Dweck, in 2005); Molden & Dweck, *supra* n. 4, at 196 (describing study and citing Baer et al. unpublished manuscript); *see also* Women’s Initiative at Duke U., *Report of the Steering Committee* 8, 12 (Aug. 2003) (available at <http://universitywomen.stanford.edu/reports/WomensInitiativeReport.pdf>) (reporting on a social environment where female undergraduates aspire to “effortless perfection”).

69. Dweck, *Mindset*, *supra* n. 4, at 38.

70. *Id.*

71. *Id.*

72. Molden & Dweck, *supra* n. 4, at 196.

73. *Id.*

74. *See* Aronson et al., *supra* n. 22, at 116 (empirically testing and summarizing prior studies that suggest that “one way to help students resist responding to stereotype threat in a maladaptive fashion . . . [is] to convince them that their abilities are expandable”); *see also* Geoffrey L. Cohen et al., *The Mentor’s Dilemma: Providing Critical Feedback across the Racial Divide*, 25 *Personality & Soc. Psychol. Bull.* 1302, 1315 (1999) (“The malleability message . . . should be particularly important for students who are targets of ability-stigmatizing stereotypes because these stereotypes imply that ability (or lack of ability) is a fixed group attribute rather than a malleable aspect of the self.”).

75. Aronson et al., *supra* n. 22, at 114.

possibility of confirming a deeply negative racial inferiority—in the eyes of others, in one’s own eyes, or both at the same time.”<sup>76</sup> For this reason, researchers hypothesize that stereotype threat increases the cost of failure because failure threatens to confirm the stereotype for others as well as the student.<sup>77</sup> As a result, stereotype threat, like the fixed mindset, likely causes students to devalue a skill after a negative assessment and decrease enthusiasm for the task.<sup>78</sup>

Research on mindset suggests that a student’s adoption of a growth mindset is one tool that may help the student combat the negative psychological implications of stereotype threat.<sup>79</sup> Aronson, Fried, and Good performed a study in which African American college students were taught the growth mindset. Despite the fact that the study did not decrease the students’ perception of stereotype threat in their environment,<sup>80</sup> it did alter their response to it. There, African American students with an induced growth mindset showed greater valuing of academic work, greater engagement with their academic work, and higher grade point averages than those in the control groups.<sup>81</sup> Similarly, in a study of middle-school students, most students taught the growth mindset improved their performance on standardized tests, as compared to a control group. But, female students’ scores on a standardized math test and minority and low-income students’ scores on a standardized reading test increased even more significantly,

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76. *Id.* (citations omitted). The burden of stereotype threat is not limited to racial stereotypes, but rather can be experienced by “any group that contends with negative stereotypes about their intellectual abilities.” Catherine Good et al., *Improving Adolescents’ Standardized Test Performance: An Intervention to Reduce the Effects of Stereotype Threat*, 22 *Applied Developmental Psychol.* 645, 647 (2003).

77. Aronson et al., *supra* n. 22, at 114; Cohen et al., *supra* n. 74, at 1302.

78. Aronson et al., *supra* n. 22, at 115–116.

79. This makes intuitive sense because stereotypes suggest that the abilities of people in stigmatized groups are fixed. Cohen et al., *supra* n. 74, at 1315. Perhaps not surprisingly, many of the most successful programs aimed at minority youth emphasize the malleable nature of academic ability. *Id.*; see also Aronson et al., *supra* n. 22, at 116 (describing two laboratory studies and conducting a third real-world study, all of which showed that one way to help students resist responding to stereotype threat in a maladaptive fashion is to teach them that their intelligence is malleable); Levy et al., *supra* n. 13, at 158 (concluding from study of children and adults from United States and East Asia that implicit theories of intelligence influence susceptibility to stereotyping, perceptions of group homogeneity, ultimate attribution error, intergroup bias, and discriminatory behavior).

80. Of course, the threat that a professor may judge a student by reference to negative stereotypes exists regardless of the student’s mindset. See Aronson et al., *supra* n. 22, at 114 n. 1.

81. *Id.* at 123.

virtually eliminating the gender, income, and race gaps on the respective standardized tests.<sup>82</sup> Thus, it appears that the growth mindset may allow students to remain enthusiastic and engaged—and ultimately to perform better—in spite of their experiences of stereotype threat.

### C. The Role of Law Schools

So what does this mean for legal education? The news is not good. Although no empirical studies have examined whether more law students have a fixed mindset at the end of their legal education than at the beginning, in Sperling and Shapcott's pilot study, twenty-five percent of the 100 first-year-law students tested displayed a fixed mindset, 25 percent displayed a growth mindset, and fifty percent were not sufficiently fixed- or growth-oriented to classify.<sup>83</sup> The results of this pilot study suggest that more incoming law students tend to fall in the middle, without a clear growth or fixed mindset, than the general population in the United States.<sup>84</sup> However, even if only 25 percent of incoming law students have a fixed mindset, that number is significant enough to warrant attention, given the potentially debilitating effects of the fixed mindset belief.<sup>85</sup>

Moreover, no study has looked at the number of students who leave law school with a fixed mindset, and the research on mindset suggests that law schools as institutions may be causing students who did not enter law school with a fixed mindset to adopt a fixed mindset. One-shot exams, the ability to “grade on” to law review, and strong emphasis on entrance variables (like LSAT scores), law-school ranking, law-student ranking, and first-year grades combine to create an environment that emphasizes per-

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82. Good et al., *supra* n. 76, at 657–658 (study of 138 seventh-graders). Gender, income and race gaps occurred with the control groups. *Id.*

83. Sperling & Shapcott, *supra* n. 1, at 58–59.

84. Dweck reports that roughly 40 percent of the general student population exhibits an entity theory of intelligence, roughly 40 percent have an incremental theory, and roughly 20 percent have ambiguous or mixed mindsets of intelligence. Carol Dweck, *Mindsets and Math/Science Achievement* (paper prepared for the Carnegie-IAS Commission on Mathematics and Science Education 2008) (available at <http://opportunityequation.org/teaching-and-leadership/mindsets-math-science-achievement>).

85. *See supra* sec. I(C) (discussing maladaptive characteristics of the fixed mindset).

formance and evaluation and often includes ability praise—three things that tend to induce and reinforce the fixed mindset.<sup>86</sup>

Additionally, law school environments also include many aspects that likely trigger maladaptive responses in students who have a fixed mindset. Specifically, the transition to law school invariably entails mistakes, confusion, critical feedback, and sustained, high-stakes challenges.<sup>87</sup> These are precisely the conditions that trigger maladaptive cognition, affect, and behaviors in students with a fixed mindset.<sup>88</sup> At least one study also observed decreased performance in fixed mindset students following a major transition.<sup>89</sup>

Moreover, the persistent, high-stakes challenge of law school itself may trigger maladaptive responses even when the students are succeeding.<sup>90</sup> Robins and Pals studied whether implicit theories of intelligence remained stable in college students over the course of their college careers and the effect of these beliefs on the

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86. See Ruth Butler, *Enhancing and Undermining Intrinsic Motivation: The Effects of Task-Involving Evaluation on Interest and Performance*, 58 *British J. of Educ. Psychol.* 1, 10–14 (1988); Ruth Butler, *Task-Involving and Ego-Involving Properties of Evaluation: Effects of Different Feedback Conditions on Motivational Perceptions, Interest and Performance*, 79 *J. of Educ. Psychol.* 474, 480–481 (1987); Rosen, *supra* n. 2, at 176–177; Sperling & Shapcott, *supra* n. 1, at 68–72.

87. Most students entering law school have experienced success in high school and college. They have a higher perception of themselves and higher degree of well-being than other recent college graduates. As a result, at least for some students, law school may be the first time they confront a potential high-stakes failure. Sperling & Shapcott, *supra* n. 1, at 54–55 nn. 114–120 and accompanying text.

88. See Robins & Pals, *supra* n. 16, at 318 (studying 508 undergraduate students at University of California at Berkeley); Molden & Dweck, *supra* n. 4, at 196–197 (studying approximately 400 students as they transitioned to junior high school math). In contrast to the fixed mindset junior high students, the growth mindset students predominantly adopted learning goals aimed at developing and extending their ability, valued effort, less frequently explained their failures in terms of low ability, and reported mastery-oriented responses of increased effort and persistence rather than helpless strategies of effort withdrawal. Molden & Dweck, *supra* n. 4, at 197.

89. *Id.* at 196. Although the students had no differences in math performance when they entered seventh grade, the fixed mindset students' grades showed an immediate drop and then slowly worsened over the two years. *Id.* at 197. The students with a growth mindset showed an increase over the two years. *Id.*

90. See Robins & Pals, *supra* n. 16, at 330, 332. Consistent with prior research, the study also found that the fixed mindset students blamed their failures on low ability and explained their successes by attributing them to luck; felt more distressed about their academic performance and were less likely to feel determined and inspired, even when they performed as well as the growth mindset students; reported that they gave up in challenging situations; and, had lower self-esteem than the growth mindset students, and this disparity widened over the four years of college. *Id.* at 329. Interestingly, the grades of the fixed mindset students in this study remained on par with their growth mindset peers, despite the maladaptive conditions. *Id.* at 322–323.



students' behavior and self-esteem.<sup>91</sup> By studying college students, Robins and Pals tested people who were navigating a real-life, long-term, high-stakes challenge—similar to law school. Because of the important consequences for self-worth and the attainment of long-term life goals, the transition to college typically involves an increased sense of academic challenge and a corresponding heightened threat of failure.<sup>92</sup>

Suggesting that the maladaptive responses were triggered by the high-stakes, sustained challenge of college itself, Robins and Pals found that maladaptive responses appeared in response to successes as well as failures.<sup>93</sup> In other words, the fixed mindset students tended to act helplessly even when they thought they performed well.<sup>94</sup> Robins and Pals suggest that this may be due to college itself being a self-esteem threatening context that resembles the “high challenge” or “threat of failure” condition of lab studies.<sup>95</sup> Another possibility is that a single failure or perceived failure (e.g., critical feedback from a professor or a lower than expected grade) triggered the maladaptive responses, despite the students' general pattern of successes.<sup>96</sup> Additionally, it may be that the feeling of exerting effort convinces fixed mindset students that they do not have what it takes to succeed—in other words, “if they were smart enough, then the task would be easy.”<sup>97</sup> Thus, Robins and Pals hypothesize that, in challenging situations that require significant effort (such as law school or legal practice), fixed mindset students are apt to attribute their failures to low ability and their successes to luck. As a result, they feel badly, regardless of whether they succeed or fail, and give up more easily when challenged. This pattern may be especially likely in contexts such as law school where the threat of failure is persistent.<sup>98</sup>

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91. *Id.* at 314.

92. *Id.*

93. *Id.* at 330.

94. *Id.*

95. *Id.*

96. *Id.* Dweck and others have suggested that entity theorists (i.e., those with fixed mindsets) may disproportionately emphasize their failures over their successes: “Even a single failure, despite many prior successes, may be enough to govern their self-judgments.” Yi Hong et al., *Implicit Theories and Their Role in Judgments and Reactions: A World from Two Perspectives*, 6 *Psychol. Inquiry* 267, 275 (1995).

97. Robins & Pals, *supra* n. 16, at 331.

98. *Id.* at 332.

Performance goal orientation, which, as discussed above, correlates strongly with the fixed mindset,<sup>99</sup> appears to be a particularly pernicious variable when it comes to students' ability to effectively learn in challenging environments like law school.<sup>100</sup> In one study, researchers induced fixed and growth mindsets by manipulating students' goal orientations.<sup>101</sup> The question underlying this study was similar to the question many law school professors ask themselves after students receive grades or feedback: Why do certain students react to critical feedback "as though they have received an indictment of their ability" while others "react as though they have been given useful feedback about learning and mastery"?<sup>102</sup> The study found that, for students who were oriented toward performance, their choice of task was highly dependent on their perceived level of ability.<sup>103</sup> If they believed a task was attainable, they would display mastery-oriented behavior, but, if they believed a task entailed a risk of making errors, they would avoid the task.<sup>104</sup> Additionally, upon receiving critical feedback, students oriented toward performance showed the entire range of maladaptive characteristics of people with a naturally-occurring fixed mindset—that is, they responded with negative affect and strategy deterioration.<sup>105</sup>

In contrast, when the researchers highlighted a learning goal, the students showed the range of adaptive characteristics of people with a growth mindset.<sup>106</sup> For the learning goal-oriented students, their beliefs about their current skills were irrelevant in determining their achievement behavior. Unlike the performance-

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99. *See supra* nn. 64–66 and accompanying text.

100. *See* Christensen, *supra* n. 3, at 75–76 (empirical study comparing law students' goal orientation and grades and concluding that learning goal-orientation correlates positively to law school class rank).

101. Elliott & Dweck, *supra* n. 50, at 5 (studying effect of induced goal orientations on fifth graders).

102. *Id.*

103. *Id.* at 10. After the students were manipulated to believe their present ability was either low or high, the students were oriented toward either skill acquisition or evaluation of ability. *Id.* at 7. The students then had to choose between a difficult learning task or one of three performance tasks at three difficulty levels, moderately easy, moderate, and moderately difficult. The students were told they would probably make mistakes and feel confusion if they chose the learning task, but they would learn useful things. They were told they would not learn anything new if they chose the performance tasks, but they would "show [the experts] what kids can do." *Id.* at 5.

104. *Id.* at 10.

105. *Id.*

106. *Id.*

goal oriented students, the learning-goal oriented students sought to increase their competence by opting for challenging tasks and taking opportunities to learn even when those opportunities entailed a high risk of public errors, regardless of whether they perceived their skills to be high or low. In response to failure, their problem-solving strategies became more sophisticated.<sup>107</sup>

Consistent with this, Leah Christensen's study of law students showed that learning goal-orientation, which is sometimes called "mastery goal-orientation," correlates positively to law school class rank (i.e., learning-goal oriented law students are more likely to achieve high class rankings).<sup>108</sup> However, the relationship between goal orientation and performance is complex.<sup>109</sup> Illustrating this complexity, in addition to revealing a positive correlation between learning-goal orientation and law school rank, Christensen's study also revealed a positive correlation between *performance* goal-orientation and LSAT scores (i.e., performance-goal oriented students were more likely to achieve high LSAT scores) and no correlation between performance goal-orientation and law school class rank (i.e., performance-goal oriented students were equally likely to have high or low class ranks).<sup>110</sup>

Clearly more research is needed to determine if law students would respond consistently with the children in Elliott and Dweck's study of fifth-graders. However, the results of this study, as well as other studies of the effects of performance-goal inducing messages, paint a troubling picture for law schools, because time and again test subjects respond to messages that emphasize performance, evaluation, and comparison by adopting the helpless, maladaptive behaviors associated with the fixed mindset.<sup>111</sup>

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107. *Id.*

108. Christensen, *supra* n. 3, at 67–68.

109. See Robins & Pals, *supra* n. 16, at 331 (results of study suggest that performance-goal orientation and mastery are not necessarily mutually exclusive, contrary to how it is often characterized in the literature).

110. Christensen, *supra* n. 3, at 67–71.

111. See Jason R. Atwood, *Mindset, Motivation and Metaphor in School and Sport: Bifurcated Beliefs and Behavior in Two Different Achievement Domains* 10 (paper presented at the Annual Meeting of the American Education Research Association, Denver, Co., April–May 2010) (available at <http://files.eric.ed.gov/fulltext/ED509344.pdf>) (citing studies showing correlation between performance-goal orientation and various fixed mindset beliefs, including fixed mindset beliefs about musicality, mathematics, science, foreign language, and creativity, and concluding "[i]n all of these empirical studies, entity beliefs [i.e., fixed mindset beliefs] were found to inhibit mastery-oriented behavior, while incremental

Sperling and Shapcott identify a number of other aspects of the fixed mindset that likely inhibit law students' success.<sup>112</sup> Focusing on ABA proposals to increase formative assessments, they conclude that law schools must address students' mindsets because more assessment, whether formative or summative, will not help students with a fixed mindset.<sup>113</sup> Sperling and Shapcott evaluate various methodologies proposed in the existing literature for increasing law students' receptiveness to assessment, including: (a) making assessments fair and accurate,<sup>114</sup> (b) changing students' goal orientation,<sup>115</sup> (c) giving students more autonomy in the learning process,<sup>116</sup> (d) using more student self-assessments,<sup>117</sup> (e) increasing student self-efficacy,<sup>118</sup> (f) using more peer review and collaboration,<sup>119</sup> and (g) Rosen's suggestion that law schools encourage students to adopt a more optimistic attitude.<sup>120</sup> They conclude that, no matter how fair, accurate, or

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beliefs promoted it").

112. Sperling & Shapcott, *supra* n. 1, at 54–63.

113. *Id.* at 63–64, 68.

114. *Id.* at 65 nn. 204–206 and accompanying text (discussing and citing studies that show fixed mindset students tend to disengage from feedback after they learn whether they got the right answer, and fixed mindset students tend to see assessments that do not match their self-perceptions as inaccurate, regardless of the actual accuracy of the assessments).

115. *Id.* at 65–66 nn. 207–213 and accompanying text (discussing and citing study that shows mindset significantly predicts goal choice).

116. *Id.* at 66 nn. 214–228 and accompanying text (discussing and citing results of studies that show fixed mindset students tend to eschew challenges they perceive as out of their reach).

117. *Id.* at 66–67 nn. 219–222 and accompanying text (discussing and citing results of studies that show fixed mindset students tend to hold inaccurate views of their own abilities and tend not to adopt new strategies after an apparent failure).

118. *Id.* at 67 nn. 223–226 and accompanying text (discussing and citing results of studies that show fixed mindset students tend to be motivated and have high confidence in their abilities when they perceive themselves to be succeeding, but that perceived failure “delivers a heavy blow”).

119. *Id.* at 67 nn. 227–228 and accompanying text (discussing and citing results of studies that show fixed mindset students “consistently show no interest in learning from their peers,” and, “[w]hen given the opportunity to compare themselves to others, . . . consistently choose to focus on those they out-perform”).

120. Sperling and Shapcott critique Rosen's suggestion that adopting “the language of optimism” could combat students' fixed mindsets. *Id.* at 67–68 n. 229 (citing Rosen, *supra* n. 2, at 184). Sperling and Shapcott note that they have found “no empirical studies linking optimism or pessimism and mindsets.” *Id.* Rather, they identify one study that found no correlation between optimism, pessimism, and mindsets and other studies that found that the Implicit Theories of Intelligence Scale, which is used to measure whether a person's mindset is fixed or malleable, does not correlate with optimism or pessimism about human nature. *Id.*; *but see infra* n. 178 (discussing a study that demonstrated that teaching positive attributions could combat the helpless behaviors typically associated with the

optimistic the critical feedback, a fixed mindset student is apt to respond maladaptively—by losing enthusiasm for the task, devaluing effort, blaming the critical feedback on lack of ability or external factors, adopting ineffective strategies in the future, and performing at a lower aptitude going forward.<sup>121</sup> Thus, efforts to increase the amount of formative assessment law students receive will be ineffective, and possibly even counter-productive, unless law schools first address mindset.

[T]o a student with a fixed mindset, all assessment is summative rather than formative—a judgment of a fixed trait—not a way to increase intelligence. If a significant portion of law students hold a fixed mindset, [which Sperling and Shapcott’s study suggests is the case,] [these students] will continue to respond maladaptively to almost any feedback no matter how carefully it is devised.<sup>122</sup>

On the other hand, the adaptive responses to depression associated with the growth mindset<sup>123</sup> could hold particular promise with respect to legal education.<sup>124</sup> Extensive work by Lawrence Krieger, Kennon Sheldon, and others demonstrates that law students’ sense of balance, autonomy and subjective well-being decline markedly throughout law school.<sup>125</sup> Reviewing the research

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fixed mindset).

121. See Sperling & Shapcott, *supra* n. 1, at 61–62 (citing and discussing extensive anecdotal evidence of some law students consistently responding adaptively to law professors’ careful constructive feedback, while others consistently respond maladaptively).

122. Sperling & Shapcott, *supra* n. 1, at 63; see also Cohen et al., *supra* n. 74, at 1302, 1313–1314 (demonstrating that students reacted adaptively to rigorous feedback combined with expressly articulated high standards and assurances that students can meet the high standards, and maladaptively to rigorous feedback without such explicit references to high standards and the potential to meet the high standards); *infra* sec. III(B) (discussing Cohen study).

123. See *supra* nn. 68–73 and accompanying text.

124. Rosen, *supra* n. 2, at 162 (arguing that “one possible explanation for law student depression lies in the institutional organization of law schools themselves, a model that encourages students to adhere to a belief in the fixed, or entity, theory of intelligence”).

125. *Id.* at nn. 8–10 (citing studies); see also Lawrence S. Krieger, *Institutional Denial about the Dark Side of Law School, and Fresh Empirical Guidance for Constructively Breaking the Silence*, 52 J. Leg. Educ. 112, 114–15 (2002) (reporting that practicing lawyers ranked highest in major depressive disorders among 104 occupational groups, law school graduates rank fifth in the incidence of suicide, and law students have from five to fifteen times the normal incidence of clinical psychological distress); Kennon M. Sheldon & Lawrence S. Krieger, *Does Legal Education Have Undermining Effects on Law Students? Evaluating Changes in Motivation, Values, and Well-Being*, 22 Behav. Sci. & L. 261, 261–263 (2004) (describing studies of two samples of law students).

on depression among law students, Rosen concludes that “law schools are increasingly turning out graduates who suffer from depression and related psychological ills at a rate that warrants further scholarship and scrutiny, if not widespread institutional change.”<sup>126</sup> Thus, the higher resiliency to depression and better coping strategies associated with the growth mindset<sup>127</sup> offer promise for law students—if law schools can nurture a growth mindset in their students.

## II. THE SCIENCE OF CHANGE

So, how can we help students avoid the helpless pattern observed in the mindset studies (and our classrooms and offices)? As we all know, changing deeply held beliefs and habits is hard. And the research on change backs this up:

[Even] persuasive messages often fail to move people if the issues are important. Moreover, even when persuasion succeeds, the attitude change may be short lived. And, even when persuasion works well and the new attitude endures, it still may lack the necessary cognitive accessibility to guide behavior.<sup>128</sup>

The scientific literature on mindsets is replete with examples of how to induce a temporary change in mindset.<sup>129</sup> However,

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126. Rosen, *supra* n. 2, at 162 (citation omitted); *but see* Marjorie A. Silver, *Symposium Introduction: Humanism Goes to Law School*, 28 *Touro L. Rev.* 1141, 1141 nn. 1, 2 (2011) (citing studies of law student and lawyer unhappiness); Silver, *supra* n. 126, at 1141–1175 (discussing law school programs for increasing law student wellbeing and positive professional identity).

127. *See supra* nn. 68–73 and accompanying text.

128. Aronson et al., *supra* n. 22, at 116 (citing R.E. Petty & D.T. Wegener, *Attitude Change: Multiple Roles for Persuasion Variables*, in D.T. Gilbert et al., *Handbook of Social Psychology* 323–329 (3d ed., McGraw-Hill 1998)); *see also* Jon A. Krosnick & Richard E. Petty, *Attitude Strength: An Overview*, in Richard E. Petty & Jon A. Krosnick, *Attitude Strength: Antecedents and Consequences* 1 (Lawrence Erlbaum Assn. 1995) (“[A] number of studies . . . have made it clear that attitudes can be very stable, consequential, and very difficult to change. . . . [M]ost attitudes appear to change only rarely in the course of normal daily life, even when elaborate influence campaigns are mounted to induce such shifts.”).

129. *See e.g.* Aronson et al., *supra* n. 22, at 116 (reporting on two studies that demonstrate telling students prior to a test that the ability being tested is either highly expandable or fixed temporarily induces a growth or fixed mindset); *see also* Levy et al., *supra* n. 13, at 163–164 (reporting that mindsets are “relatively stable, chronically accessible knowledge structures” that can be altered; reporting on four studies in which participants were experimentally manipulated to adopt a growth mindset).

there is little data showing how to teach a long-term change in mindset.

Moreover, for a number of reasons, people tend to resist information that threatens their existing mindset.<sup>130</sup> Recall that mindset is shorthand for a person's theory of how his or her intelligence works. Levy concludes that "once people are operating within the framework of one theory, they tend to resist information that threatens that theory."<sup>131</sup> This may be because psychological needs served by these theories create obstacles to making long-lasting changes to one's habitual use of a particular theory (i.e., mindset).<sup>132</sup> For example, a fixed or growth mindset may serve to give meaning to a person's social world because the theories provide a framework for perceiving, judging, and acting on information.<sup>133</sup> Moreover, these "meaning systems" may lead to a self-perpetuating cycle because the framework provided by the theory leads to a particular social understanding that, in turn, bolsters the validity of the theory.<sup>134</sup> For example, one study suggests that people enroll in courses and choose careers that support their theories.<sup>135</sup>

There may also be even more pragmatic reasons to hold on tight to one's habitual mindset because our mindset may actually help us process information faster, speeding up response time and freeing up energy and resources for other tasks.<sup>136</sup> For example, a fixed mindset appears to provide a cognitively-streamlined method of processing information.<sup>137</sup> This is because those operating within a fixed mindset tend to attach traits to groups and see more homogeneity in groups (i.e., they tend to stereotype group members).<sup>138</sup> Research suggests that these kinds of sorting behaviors may actually be energy-saving in that these sorting behaviors simplify information processing and speed up response generation.<sup>139</sup> In this way, the fixed mindset tendency to attach traits to groups and see more homogeneity in groups may help to release

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130. Levy et al, *supra* n. 13, at 165.

131. *Id.*

132. *See id.*

133. *Id.* (citing studies).

134. *Id.*

135. *Id.* (citing study).

136. *Id.* at 165–166 (citing studies).

137. *Id.*

138. *Id.* at 166.

139. *Id.* (citing studies).

cognitive resources for other cognitive tasks.<sup>140</sup> Levy hypothesizes that those operating within the growth mindset may also use the mindset to achieve cognitive simplicity (albeit of a different kind), which, when achieved, would free up cognitive resources for other tasks.<sup>141</sup> Thus, cognitive needs served by one's habitual mindset may create obstacles to teaching long-lasting changes in mindset.

Additionally, law schools present a more complex set of variables than the environments that existed in many of the laboratory-based mindset studies. As discussed in Part I, law students are not confronted with just one or two conditions that trigger the maladaptive characteristics of the fixed mindset; rather, law students are confronted with numerous triggering conditions at once, including an emphasis on evaluation, high-stakes challenges, confusing and difficult tasks, and a major transition.<sup>142</sup>

Methods that successfully induce a growth mindset under laboratory conditions, such as telling students they have the ability to learn the skill about to be tested, do not always work when other variables are introduced.<sup>143</sup> For example, in the study of fifth-graders by Elliott and Dweck discussed above, students were told they had the ability to learn.<sup>144</sup> Despite this, students displayed the full range of maladaptive behaviors consistent with the fixed mindset when they were also told that their performance was being filmed and that they would be normatively evaluated by experts.<sup>145</sup> In contrast, students who heard messages that highlighted learning and omitted any reference to being filmed reacted adaptively. These students opted for a learning task despite being told the task entailed a high risk of making mistakes and feeling confusion and self-doubt.<sup>146</sup> Robins and Pals's study of U.C. Berkeley college students also suggests that simple methods for inducing the growth mindset may not be effective in complex environments like law school, where students face persistent, high-stakes challenges.<sup>147</sup>

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140. *Id.* (citing studies).

141. *Id.*

142. *See supra* sec. I(C).

143. *See Elliott & Dweck, supra* n. 50, at 5–6.

144. *Id.*

145. *See id.*; *supra* nn. 101–107 and accompanying text (discussing the study by Elliott and Dweck).

146. *See supra* nn. 101–107 and accompanying text.

147. *See Robins & Pals, supra* n. 16; *supra* nn. 88–98 and accompanying text (discussing Robins and Pals study).



Accordingly, while research suggests that students' maladaptive responses to the initial challenges of law school may be forestalled by incorporating messages about the growth mindset into orientation materials and classes early in the first semester and emphasizing learning over evaluation, a sustained shift to the growth mindset likely requires more.

Fortunately, potentially important clues for helping teach and reinforce the growth mindset in complex, real-world environments like law schools emerge out of a body of research on changing deeply held beliefs.<sup>148</sup> Aronson, Fried, and Good incorporated this research into a study of college students.<sup>149</sup> Concerned that methods used in prior studies to induce the growth mindset likely resulted in temporary changes or changes that were not sufficiently cognitively accessible to guide behavior, Aronson, Fried, and Good sought to design programs that would allow the growth mindset to both persevere and come to mind easily when needed (i.e., be cognitively accessible at critical moments).<sup>150</sup> Recognizing that strong attitudes are more likely to influence behavior because they are persistent over time, accessible, automatically activated, resistant to counter-information, and less influenced by momentarily salient information,<sup>151</sup> they hypothesized that, to teach students an enduring shift in mindset, they must teach the students to adopt a strong attitude about the malleability of intelligence.<sup>152</sup>

The Aronson study identified the following five conditions for influencing a persistent, cognitively-accessible change in a deeply held belief, such as a person's belief in the nature of intelligence. First, advocacy of the new belief in a person's own words increases that person's acceptance of the new belief—this is sometimes called the “saying-is-believing effect.”<sup>153</sup> Second, public commit-

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148. See e.g. Alice H. Eagly & Shelly Chaiken, *Attitude Strength, Attitude Structure, and Resistance to Change*, in Petty & Krosnick, *supra* n. 128, at 1; Petty & Wegener, *supra* n. 128, at 323; Levy et al., *supra* n. 13; Michael S. Pallak et al., *Commitment and Energy Conservation*, 1 *Applied Social Psychol. Annual* 235 (1980) (empirical study of methods for changing energy conservation attitudes and behavior over time).

149. Aronson et al., *supra* n. 22, at 116; see also Good et al., *supra* n. 76 (incorporating research on changing deeply held beliefs into study of effect of mindset on performance on standardized math tests).

150. Aronson et al., *supra* n. 22, at 116.

151. *Id.* (citing study).

152. *Id.*

153. *Id.* (citing studies).

ment to a new belief has also been shown to increase acceptance of the new belief.<sup>154</sup> Third, once attitudes are formed, attitudes have been shown to persevere and remain resistant to change if they are validated by personal experiences.<sup>155</sup> Fourth, people's attitudes are strengthened by inducing them to consider how their own past behaviors are consistent with the attitude.<sup>156</sup> Fifth, repetition of a position has been shown to make the position chronically available.<sup>157</sup> In addition to increasing performance for all students in the Aronson study, these five attitude-change tactics have shown promise for successfully teaching persistent, cognitively-accessible behavior changes related to reducing violence among children and increasing recycling among adults.<sup>158</sup>

Integrating these five conditions for effective attitude change, Aronson, Fried, and Good designed an experiment in which college students were led to believe they were providing long-distance (pen pal) mentoring to young students about the malleability of intelligence.<sup>159</sup> The entire program consisted of only three one-hour sessions spaced ten days apart.<sup>160</sup> The mentors were led to believe they were participating in a program to help younger educationally "at risk" students by giving them encouragement and showing them that successful college students had once been like them but had overcome their struggles to find eventual success. Each mentor answered one letter from a fictional seventh grader, who the participant was led to believe could benefit from having an older role model.<sup>161</sup> Note that the young students did not exist. The subjects of the study were the college students who believed they were providing mentoring.

In the first two sessions, the malleable-intelligence mentors were asked to write a reply to a letter from a fictional struggling seventh grader that would encourage the seventh grader to "work hard in spite of their difficulties."<sup>162</sup> The mentors were prompted

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154. *Id.* (citing studies).

155. *Id.* (citing studies).

156. *See id.* (citing studies).

157. *Id.* at 118 (citing studies).

158. *Id.* at 116 (citing studies).

159. *Id.* at 117. The experiment included three test groups: the malleable intelligence pen pals and two control groups. *Id.* One control group mentored young students about intelligence generally and the other control group did not mentor anyone. *Id.*

160. *Id.*

161. *Id.*

162. *Id.*

to offer whatever encouragement they wanted and told that it would be particularly helpful if they “incorporate[d] a theme stressing what research was revealing about the nature of human intelligence.”<sup>163</sup> They were also asked to impress upon their pen pals the view that intelligence is “like a muscle” because it grows with mental work.<sup>164</sup> Specifically, the malleable pen pals were told the following:

Because intelligence is malleable, humans are capable of learning and mastering new things at any time in their lives. This message is especially important to get across to young, struggling students. If these students view intelligence as a fixed quantity, they may feel that they are incapable of learning if they encounter difficulty with their school work. If, however, students can be convinced that intelligence expands with hard work, they may be more likely to remain in school and put effort into learning.<sup>165</sup>

To reinforce the scientific validity of the message, the mentors were shown a video clip that discussed how the brain is capable of “growing and making new connections throughout life” in response to intellectual challenge.<sup>166</sup> To maximize the mentors’ belief perseverance, the mentors were asked to build into their letters examples from their own lives that illustrated their arguments about intelligence. To bolster the mentors’ commitment to and personal responsibility for their messages, a photo of each mentor was included with his or her letter. To remind them of their advocacy and to suggest that their letters had impact, the mentors received a thank-you note from their (fictional) pen pals and (fictional) pen pals’ teachers.<sup>167</sup> To engage the “saying-is-believing” effect and make the message as chronically available as

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163. *Id.*

164. *Id.*

165. *Id.* at 117–118.

166. *Id.* at 118.

167. *Id.* The control mentors were given the following message, which is consistent with a fixed mindset:

Intelligence is not a single entity, but rather composed of many different talents, and, as a result, every person has both intellectual strengths and weaknesses. . . . [I]f struggling students can be convinced that there are many different types of intelligence, they may be more likely to continue to learn in an attempt to find and develop areas of strength.

*Id.*

possible through the use of repetition, the mentors advocated the malleability-of-intelligence position in two rounds of letters and in a speech.<sup>168</sup> The mentors wrote a letter at the first and second sessions, respectively. Then, in the third session, they turned their letters into short speeches, which were audio taped purportedly for future use with at risk children. The mentors listened to their own audio taped speech twice.<sup>169</sup>

The results showed that participation in the three one-hour advocacy sessions changed the participants' beliefs about intelligence and these changes endured over a period of nearly one year.<sup>170</sup> Significantly, this relatively simple intervention (three one-hour sessions) increased academic performance approximately as much as larger-scale, multifaceted experiments involving special recruitment measures, weekly study groups, and frequent mastery workshops.<sup>171</sup>

At least one other study has also demonstrated that use of these attitude-change techniques can result in a change in mindset that is cognitively-accessible and persistent.<sup>172</sup> In a study by Catherine Good, Joshua Aronson, and Michael Inzlicht, seventh graders received a college student mentor whom they met with for two ninety-minute sessions, once in November and again in January; students also corresponded with their mentors via e-mail.<sup>173</sup> For students in the growth mindset group, the mentors discussed the expandable nature of intelligence and helped the students learn about how the brain is able to form new connections throughout one's lifetime.<sup>174</sup> To reinforce and help the students

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168. *Id.*

169. *Id.*

170. *Id.* at 119. The experimenters assessed the mentors' (and control group participants') attitudes a few days after the conclusion of the experiment, nine weeks after the start of the experiment, and ten months after the start of the experiment. *Id.*

171. *Id.* at 123 (citation omitted).

172. Good et al., *supra* n. 76; see also Carol S. Dweck, *Mindsets and Math/Science Achievement* (paper prepared for the Carnegie-IAS Commission on Mathematics and Science Education 2008) (available at <http://opportunityequation.org/teaching-and-leadership/mindsets-math-science-achievement>) (discussing studies).

173. Good et al., *supra* n. 76, at 651–653.

174. *Id.* at 651. Specifically, participants learned that intelligence “is not a finite endowment, but rather an expandable capacity that increases with mental work.” *Id.* at 654. In addition to their mentors teaching them about how the brain works, participants were encouraged to do independent research on a restricted website created for the study. *Id.* at 653. The website contained, among other things, “testimonies and catch phrases regarding the expandability of intelligence,” “animated pictures of the brain, scientific images of neurons and dendrites, and narrative explanations to demonstrate how the brain forms

internalize the messages, the seventh graders created web pages on which they advocated, using their own words and pictures, the messages the students were learning from their mentors.<sup>175</sup> The mentors told the students that their web pages would help other students who were struggling in school.<sup>176</sup> According to Good, Aronson, and Inzlicht, “Research has repeatedly demonstrated that such advocacies are extremely effective means of getting individuals to adopt the beliefs they are induced to advocate.”<sup>177</sup>

The students in the growth mindset group, compared to those in the control group, scored significantly higher on math and reading achievement tests administered at the end of the school year—many months after the mentoring sessions.<sup>178</sup> Good, Aronson, and Inzlicht “note the ease with which [their] intervention led to significant increases in students’ standardized test scores. Student performance did not improve through additional skills drilling or cramming of content related to the test.”<sup>179</sup> Rather, students significantly improved their scores by receiving mentoring (and reinforcing the mentoring through public advocacy in their own words) that emphasized the view that intelligence is expandable.

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new neural connections when it is engaged in effortful problem solving.” *Id.* at 654.

175. *Id.* at 651–653.

176. *Id.* at 653.

177. *Id.* (citing studies).

178. *Id.* at 657. Note that significant improvement in performance was also achieved by two other groups in the Good study—the positive attribution group, and the combined growth mindset/positive attribution group. These groups were taught nonpejorative attributions for their academic difficulties. *Id.* at 658–659. Good, Aronson, and Inzlicht had originally expected additive beneficial effects for students taught both the growth mindset and positive attributions. However, the effects of the two messages appeared to be the same with no appreciable additive effect for the group that learned both messages. *Id.* at 658. Good, Aronson, and Inzlicht hypothesize that

[a]lthough the two intervention messages . . . appear different on the surface, they are at heart, very similar. . . . As Dweck and her colleagues repeatedly have shown, the attributions one makes for poor performance depend upon one’s beliefs about the nature of intelligence. . . . [F]or example, . . . entity theorists are more likely to . . . make internal, stable attributions for negative outcomes. . . . [T]hese are precisely the kinds of pejorative attributions that attribution theory predicts can lead to the downward spiral of self-blame, anxiety, and underperformance. . . . Clearly, encouraging students to view intelligence as expandable does not simply change their beliefs about intelligence; more importantly, it also changes the attributions they make for the causes of their difficulties.

*Id.*

179. *Id.* at 658–659.

Although more specific research is needed, the studies that incorporate methods for changing deeply held beliefs suggest that law schools can help students adopt a malleable mindset. Moreover, despite the resistance to change reported by Levy and others, these studies also suggest that—with a commitment of as little as three hours with students (plus preparation time)—law schools may be able to help law students adopt an enduring change in mindset that is sufficiently cognitively accessible to guide future behavior.

### III. HARNESSING THE SCIENCE OF CHANGE TO FOSTER AN ENDURING SHIFT TO A GROWTH MINDSET

Little information exists on how to teach a persistent change in mindset. However, studies that incorporate the research on changing deeply held beliefs, such as the Aronson and Good studies discussed above,<sup>180</sup> appear to provide a useful roadmap for teaching an effective and persistent change in mindset. Additionally, many methods exist for temporarily inducing a change in mindset.<sup>181</sup> Although it is unclear whether such methods work in high-stakes, performance-emphasizing environments like law schools, use of these methods may help law students achieve a helpful short-term shift in mindset—for example, immediately prior to receiving feedback on their first legal writing assignment or before taking a mid-term.

Given the research on changing deeply held beliefs and the lack of empirical data showing that less-robust methods will result in a change in mindset that is sufficiently ingrained to control at critical moments (such as on the Bar exam), the following discussion evaluates the methods for teaching the growth mindset proposed by Rosen<sup>182</sup> and Sperling and Shapcott,<sup>183</sup> concluding

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180. *See supra* pt. II.

181. For example, some studies experimentally induce a growth mindset by having participants read short, fictitious articles that purport to cite evidence from several sources that intelligence is malleable (or fixed). Participants who read the articles that provided evidence of malleable intelligence appeared to have a temporary shift toward the growth mindset as shown by their responses to test questions, and the reverse was true of participants who read the articles that provided evidence of fixed intelligence. *See e.g.* Chiyue Chiu et al., *Lay Dispositionism and Implicit Theories of Personality*, 73 *J. of Personality & Soc. Psychol.* 19 (1997); Sherri R. Levy et al., *Stereotype Formation and Endorsement: The Role of Implicit Theories*, 74 *J. of Personality & Soc. Psychol.* 1421, 1436 (1998).

182. *See* Rosen, *supra* n. 2, at 182 (recommending that “law schools . . . send an overt message of growth mindedness at the institutional level, and . . . work to combat pessimis-

that methods that focus primarily on message may be inadequate unless combined with a program that encourages students to speak about and publicly advocate the growth mindset belief themselves.<sup>184</sup> However, Rosen's and Sperling and Shapcott's recommendation that professors provide "mindful" critical feedback to students<sup>185</sup> may, even without a self-advocacy program, teach a lasting, cognitively-accessible growth mindset—if the feedback is robust, avoids generic praise, and is coupled with express assurances that the students can meet the high standards with effort and persistence.<sup>186</sup> Additionally, professors own mindsets may have a reinforcing effect on student mindsets.<sup>187</sup>

#### A. Methods That Focus Primarily on Message May Be Insufficient Unless Combined with Student Self-Advocacy

Sperling and Shapcott's and Rosen's recommendations for fostering a growth mindset in law schools focus primarily on communicating a growth mindset message to law students—be it from professors who have examined their own mindsets and thereby shifted their expectations and language,<sup>188</sup> through orientation programs that include growth-oriented messages from administrators, professors and guest speakers;<sup>189</sup> by framing assignments and evaluation in terms of process;<sup>190</sup> by professors

tic attribution at the classroom level”).

183. See Sperling & Shapcott, *supra* n. 1, at 73–83. Sperling and Shapcott propose the following six methods for fostering a growth mindset in law students: (1) change your own mindset, *id.* at 73–75; (2) orient students to a growth mindset from day one, *id.* at 74–75; (3) create incremental- and process-oriented assignments, *id.* at 75–78; (4) give mindful feedback that promotes a growth mindset, *id.* at 77–80; (5) create a mastery-focused environment, *id.* at 80–81; and, (6) provide incremental mindset mentors for incoming students, *id.* at 81–83.

184. See *infra* sec. III(A).

185. See Sperling & Shapcott, *supra* n. 1, at 77 (recommending that law professors give students “[m]indful” feedback); see also Rosen, *supra* n. 2, at 183–185 (recommending that professors give growth mindset oriented feedback).

186. See *infra* sec. III(B) (discussing Cohen study); see also Sperling & Shapcott, *supra* n. 1, at 77–81 (suggesting law professors can foster a growth mindset by avoiding performance praise and instead focusing feedback on effort and other controllable aspects of student work).

187. See *infra* sec. III(C); Sperling & Shapcott, *supra* n. 1, at 73–74 (suggesting that law professors examine their own mindsets).

188. See Sperling & Shapcott, *supra* n. 1, at 73–74.

189. See *id.* at 74–75.

190. See *id.* at 75–78.

who teach legal writing using their expertise in narrative to tell stories that show that legal writing and analysis skills are learned through effort and persistence;<sup>191</sup> by professors and administrators “communicat[ing] that law school has academic value beyond the first year” and “encourag[ing] students to view rankings and large firm job placements as indicative of mastery that can be obtained through learning and hard work”;<sup>192</sup> or, by providing growth mindset student mentors for incoming students.<sup>193</sup>

Although these proposals may be intuitively appealing, at least on their own, they may achieve disappointing results.<sup>194</sup> The research on changing deeply held beliefs, like one’s belief about intelligence, suggests that methods that rely solely on communicating a growth mindset message may be too passive to achieve a lasting, cognitively-accessible change in mindset.<sup>195</sup> Moreover, although passive methods like these have successfully induced a growth mindset under laboratory conditions,<sup>196</sup> research suggests these methods likely will not work in challenging environments where performance is emphasized<sup>197</sup>—like law schools.<sup>198</sup>

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191. *See id.* at 80–81.

192. *See Rosen, supra* n. 2, at 183; *see also id.* at 182–183 (recommending that “law schools . . . send an overt message of growth mindedness at the institutional level,” “institute events, lectures, mailings, and so on, that explicitly promote the growth mindset,” and focus on the “words and messages of administrators and instructors”).

193. *See Sperling & Shapcott, supra* n. 1, at 81–83. Sperling and Shapcott propose numerous ways law schools, law professors, and professors who teach legal writing in particular, can communicate a growth-oriented message, including, for example: (1) using first classes to explicitly teach about the growth mindset; (2) inviting former successful graduates to speak about overcoming obstacles along the path to mastery; and, (3) inviting graduates who make hiring decisions to speak about decisions based on an applicants’ ability to persevere. *See id.* at 74–75.

194. However, more empirical research is needed to evaluate the effect of methods such as these on law students’ mindsets.

195. *See supra* nn. 153–157 and accompanying text (describing five conditions that result in persistent, cognitively accessible changes in deeply held beliefs).

196. *See e.g. Sperling & Shapcott, supra* n. 1, at 73–83. Sperling and Shapcott support most of their proposed methods with citations to studies that involved short-term assessments of the change in mindset and took place in controlled environments that lacked the fixed mindset inducing conditions of law schools. *See e.g. id.* at 77 n. 271 (citing Claudia M. Mueller & Carol S. Dweck, *Praise for Intelligence Can Undermine Children’s Motivation and Performance*, 75 *J. of Personality & Soc. Psychol.* 33, 40 (1998)); *see also Rosen, supra* n. 2, at 182–185 (citing no studies demonstrating that proposed method results in mastery-oriented behavior outside a laboratory setting or over any length of time).

197. *See supra* nn. 88–98 and accompanying text (discussing Robins and Pals study of U.C. Berkeley college students, which suggested that simple methods for inducing the growth mindset may not be effective in complex environments where students face persistent, high-stakes challenges); *supra* nn. 143–146 and accompanying text (discussing Elliott



Nor do Sperling and Shapcott or Rosen cite evidence that their proposed methods can teach a growth mindset that will endure and be cognitively accessible at critical moments.<sup>199</sup> For example, although the use of growth mindset mentors for incoming law students may be beneficial, the Aronson study does not provide evidence that the *recipients* of mentoring will experience a lasting change in mindset.<sup>200</sup> Rather, the Aronson study provides evidence that the *mentors themselves* will experience a lasting change in mindset.<sup>201</sup> This result is consistent with the research on changing deeply held beliefs, which shows that, among other things, self advocacy of the new belief helps ingrain the new belief (i.e., the “saying is believing effect”).<sup>202</sup>

Because methods that focus primarily on communicating a growth-oriented message to students involve passive receipt of information by the students,<sup>203</sup> these methods promote only one of the conditions for changing deeply held beliefs—namely, repetition of the position.<sup>204</sup> Thus, although the message based methods proposed by Rosen and Sperling and Shapcott<sup>205</sup> would increase repetition of the growth mindset position, additional steps need to

and Dweck study of fifth graders, which showed that a simple method for inducing the growth mindset did not work when performance was also emphasized).

198. Recall that law students are confronted with numerous fixed mindset triggering conditions at once, including an emphasis on evaluation, high-stakes challenges, confusing and difficult tasks, and a major life transition. *See supra* sec. I(C).

199. *See e.g.* Sperling & Shapcott, *supra* n. 1, at 81–83, 81 n. 285 to 83 n. 298 (citing Aronson study as evidence that use of incremental-mindset mentors for incoming students will contribute to lasting change in mindset for “mentors and mentees alike”); *but see* Aronson et al., *supra* n. 22, at 116, 118–119 (analyzing effect of study on mentors, not mentees).

200. *Cf.* Sperling & Shapcott, *supra* n. 1, at 81 n. 285 to 83 n. 298 (citing Aronson study as support for use of incremental-minded mentors for incoming students).

201. *See supra* nn. 149–171 and accompanying text (discussing Aronson study).

202. *See* Aronson et al., *supra* n. 22, at 116, 118; *see also supra* pt. II.

203. Although Sperling and Shapcott and Rosen focused primarily on methods of communicating growth-mindedness to students, Sperling and Shapcott did include some suggestions that involved active participation by students. *See e.g.* Sperling & Shapcott, *supra* n. 1, at 74–75 (recommending students engage in small group discussions of a short article on the malleability of intelligence).

204. Recall that the research on changing deeply held beliefs suggests that incorporation of the following five conditions in combination can result in a persistent, effective change in mindset: (1) advocacy of the new position in one’s own words (the “saying-is-believing effect”), (2) public commitment to the position, (3) validation of the position through personal experience, (4) consideration of how one’s own past behaviors are consistent with the position, and (5) repetition of the position. *See* Aronson et al., *supra* n. 22, at 116, 118; *see also supra* nn. 149–171 and accompanying text (discussing Aronson study).

205. *See supra* nn. 188–193 and accompanying text (identifying various message-based methods proposed by Rosen and Sperling and Shapcott).

be taken to encourage advocacy of the position in the students' own words, public commitment by the students to the position, validation of the position through the students' personal experiences, and self-reflection by the students regarding how their past behaviors are consistent with the position.

Relatively simple modifications to Sperling and Shapcott's and Rosen's proposals, however, may enable the proposals to achieve effective, lasting results. For example, empirical evidence does suggest that receipt of growth mindset oriented mentoring *combined with* additional steps that encourage advocacy of the growth-oriented messages by the mentees could effectively teach the growth mindset to the mentees.<sup>206</sup> Specifically, in the study by Good, Aronson, and Inzlicht discussed above,<sup>207</sup> the test scores of seventh graders who received a growth-oriented mentor improved markedly many months after the mentoring occurred, suggesting that the change in the mentees' mindsets was both cognitively-accessible and persistent.<sup>208</sup> As described above, to reinforce and help the students internalize the messages from the mentors, the seventh graders created web pages on which they advocated, using their own words and pictures, the messages they were learning from their mentors, and the seventh graders were led to believe these webpages would help other struggling students.<sup>209</sup>

Although incorporation of public and self-advocacy conditions into a law school program may appear daunting, recall that the results in the Aronson study were achieved after only three one-hour sessions<sup>210</sup> and the results in the Good study were achieved after two ninety-minute sessions followed by continued correspondence via e-mail and self-guided work by the mentees on their personal webpages.<sup>211</sup> Good, Aronson, and Inzlicht specifically "note[d] the ease with which [their] intervention led to significant increases in students' standardized test scores. Student performance did not improve through additional skills drilling or cramming of content related to the test."<sup>212</sup> Rather, students significantly improved their scores by receiving mentoring (and rein-

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206. See Good et al., *supra* n. 76, at 653, 657–658.

207. See *supra* nn. 172–179 and accompanying text (discussing the Good study).

208. See *supra* nn. 172–179 and accompanying text (discussing the Good study).

209. See *supra* nn. 172–179 and accompanying text (discussing the Good study).

210. See *supra* nn. 160–171.

211. See *supra* nn. 172–179 and accompanying text (discussing Good study).

212. See Good et al., *supra* n. 76, at 658–659.

forcing the mentoring through public advocacy in their own words on their personal webpages) that emphasized the view that intelligence is expandable.

Realistically, however, law students may not buy into any assignment that asks them to write a letter to another student about the brain being like a muscle (as was done in the pen pal study). However, law schools (for example, during orientation) and law professors can create context-appropriate malleability of intelligence lessons that incorporate all or most of the five conditions for teaching a deep attitude shift. Ultimately, the conditions involve students teaching others about the malleability of intelligence, basing those lessons on their own experiences—both historic and ongoing—and repeating those lessons.

For example, one way to facilitate the saying-is-believing condition would be through the use of student group discussions<sup>213</sup> or short essays, in which the students are encouraged to talk about the growth mindset themselves, thereby invoking the “saying is believing” effect.<sup>214</sup> The mindset could be further reinforced by encouraging the students to discuss how they have overcome difficulties through persistence as well as other examples from their own lives of moving up a sharp learning curve. Along these lines, the following sample five-step lesson could be incorporated into an orientation session, academic support workshop,<sup>215</sup> or first week class to invoke all five of the conditions used in the Aronson study to change deeply held beliefs.

**Step 1—Teach Students About the Malleability of Intelligence.** To accomplish this simple step, assign a short reading on the malleability of intelligence.<sup>216</sup> For example, students can

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213. See Sperling & Shapcott, *supra* n. 1, at 74–75, 75 n. 265 (recommending small group discussions in first-week classes of a short article on the malleability of intelligence or chapter 1 from Dweck, *Mindset*, *supra* n. 4, at 3–14); see also Elizabeth L. Inglehart et al., *From Cooperative Learning to Collaborative Writing in the Legal Writing Classroom*, 9 *Leg. Writing* 185, 188–192 (2003) (discussing theories supporting use of cooperative and collaborative small group work in legal writing classrooms).

214. See Aronson et al., *supra* n. 22, at 116, 118; see also *supra* pt. II.

215. Note, however, that presenting mindset mentoring as a remedial program may undermine the effectiveness of the mentoring for some students. See generally Cohen et al., *supra* n. 74, at 1315 (noting that “most successful academic programs aimed at minority youth often are presented as honorific rather than remedial, with correspondingly higher standards for student performance”); see also *infra* sec. III(B) (discussing Cohen study and correlation between rigorous standards, the message at the students have the potential to meet those standards, and academic achievement).

216. If assigning the handout as reading for a class, I recommend assigning it for the

be assigned to read a short handout that explains law school and lawyering in the context of the mindset research and includes an excerpt from Dweck's book, *Mindset*. This reading assignment provides the foundation for the work to come and may also, on its own, temporarily induce a growth mindset.<sup>217</sup>

**Step 2—Students Write about an Experience of Initially Encountering a Setback and Then, with Effort, Succeeding.** To get students to begin teaching themselves about the growth mindset and viewing the growth mindset in the context of their historic experiences,<sup>218</sup> assign students to write a short essay in which they describe a personal experience that demonstrates the malleability of intelligence. For example, students could be assigned to describe a time when they initially encountered setbacks, but were able with perseverance and effort to eventually succeed. Or, students could be assigned to describe a personal experience of hitting a ceiling in their learning (or ability to understand something), and then, through persistence, breaking through that ceiling.<sup>219</sup>

**Step 3—Reinforce the Growth Mindset Lesson through Lecture and Personal Experience.** To reinforce the growth mindset lesson, professors or administrators can lecture or share personal experiences that demonstrate the malleability of intelli-

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first class—in part because students seem more open in the first class than in subsequent classes to material that is not obviously related to the subject of the course.

217. Researchers have induced a temporary shift to a growth mindset by telling students that the ability they are teaching can be learned and the task they will be given will give them a chance to learn it, Dweck, *Mindset*, *supra* n. 4, at 47, 218–219, and by having students read a scientific article or watch a short video about how the brain grows in response to challenges, *id.* at 216; *see also* Aronson et al., *supra* n. 22, at 116 (research shows that telling students prior to a test that the ability being tested is either highly expandable or fixed temporarily induces a growth or fixed mindset); Sperling & Shapcott, *supra* n. 1, at 74–75 (recommending small group discussions of a short article on the malleability of intelligence or chapter 1 from Dweck, *Mindset*, *supra* n. 4, at 3–14).

218. *See supra* pt. II (conditions that lead people to change deeply held beliefs include discussing the new belief in one's own words (the "saying is believing" effect) and viewing the new belief in the context of one's historic experiences).

219. I assigned this written piece in conjunction with the mindset reading (Step 1) and made both due for the first class. I also made sure to return these essays to my students with my comments prior to providing any feedback on their legal writing. I included comments that encouraged the student to remember this experience when he or she faces setbacks in law school and to use the experience, if it is not too personal, to encourage his or her peers when they face setbacks. I was thrilled when I saw how seriously my first-year legal writing students took this assignment. I was also deeply moved by the personal stories of perseverance and success that they chose to share.

gence.<sup>220</sup> For example, professors or administrators could lecture briefly on how law school and lawyering will inevitably involve setbacks, but that, with effort and perseverance, every student can succeed in both.

One way to reinforce a growth mindset oriented message and set the foundation for the peer interviews in Step 4 is to lecture about or discuss a learning continuum that begins with “unconscious incompetence” (a comfortable place); then, as more expertise is gained, moves to “conscious incompetence” (a very uncomfortable place); then, as more expertise is gained, finally moves to “conscious competence” (a rewarding place); and, ultimately, to mastery.<sup>221</sup> In describing the learning continuum, the lecturer can point out that every new law student, regardless of his or her background or apparent aptitude, starts out a novice and therefore at unconscious incompetence—in other words, not cognizant of the scope of what he or she does not know. The lecturer can emphasize that there is no shame in being a novice and can even commiserate through personal experience about what an uncomfortable place the next stage, conscious incompetence, is. The lecturer can remind the students that, although this stage feels bad, it is actually more advanced than the prior unconscious stage and is a step on the path toward mastery.

**Step 4—Students Interview Each Other about Their Growth Experience.** To reinforce the growth mindset experience through repetition and to get the students to publicly advocate a growth position,<sup>222</sup> have students interview one another about their perseverance experiences (the short essays assigned in Step 1). Structure these interviews by prompting the interviewer to ask the interviewee about his or her experience in the context of the learning continuum described above. That is, the interviewer asks the interviewee what he or she was thinking and feeling at the unconscious incompetence stage (the interviewee

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220. Rosen and Sperling and Shapcott provide numerous examples of ways law professors and law schools can communicate a growth-mindset message to students. *See supra* nn. 188–193 and accompanying text.

221. I adapted this from a model known as the “learning stages model.” *See* Linda Adams, *Learning a New Skill Is Easier Said Than Done*, <http://www.gordontraining.com/free-workplace-articles/learning-a-new-skill-is-easier-said-than-done/> (accessed Jan. 5, 2015) (describing learning stages model).

222. *See supra* pt. II (conditions that lead people to change deeply held beliefs include reinforcing the new belief through repetition and publicly advocate the new belief).

might respond, for example, that she was excited to begin Spanish lessons, that she had a vision of talking fluently with her Cuban brother-in-law). Then, the interviewer asks the interviewee to describe her initial experience of conscious incompetence (the interviewee might respond, for example, that she was ashamed to learn that she couldn't speak quickly, pronounce words correctly, or remember simple vocabulary words, and that she had thoughts about quitting). Then, the peer interviewer asks the interviewee what resources or strategies he or she used to persevere through this stage (in other words, why didn't he or she give up)?

To facilitate even more public advocacy and repetition, bring the orientation group or class back together and ask the students to share the resources and strategies that they used to persevere through the conscious incompetence stage. As the students share the various strategies and resources that have helped them move from conscious incompetence to conscious competence, list the strategies and resources on the board or project them on a screen. The list may then be used to elicit the students to observe that, although they are all novices at law school, they are masters at perseverance.

Alternatively, the interviews and post-interview group discussion could be structured to focus more directly on the expandable nature of intelligence. This would align this step more closely with the methodologies used in the Aronson and Good studies, where the students wrote about and talked about the expandable nature of intelligence.<sup>223</sup>

**Step 5—Students Mentor One Another Based on Their Own Growth Experiences.** To encourage more repetition and advocacy of the position and validation of the position through reference to current experiences,<sup>224</sup> find ways to facilitate students mentoring one another based on their personal growth experiences. For example, professors who assign peer editing can include on peer editing forms a section that prompts the peer editor to share one example of something that he or she initially struggled with in the assignment, but eventually learned. The

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223. See *supra* nn. 149–171 and accompanying text (describing Aronson study); *supra* nn. 172–179 and accompanying text (describing Good study).

224. See *supra* pt. II (conditions that lead people to change deeply held beliefs include repetition of the new belief, advocacy of the new belief, and validation of the new belief through reference to current experiences).

peer editor can also be prompted to share strategies or resources that helped him or her overcome the initial learning setback.<sup>225</sup> After completing the peer editing form, students can be assigned to briefly discuss what they wrote on this section of the form.

Alternatively, especially in the context of an orientation session or academic support workshop, the students could be provided with specific parameters for peer mentoring that focus directly on the expandable nature of intelligence. This would align this step more closely with the methodologies used in the Aronson and Good studies, where the students provided mentoring (Aronson) and received mentoring (Good) that linked belief in the expandable nature of intelligence to academic success.<sup>226</sup>

In summary, it appears law schools and law professors could use the message-based methods proposed by Rosen and Sperling and Shapcott to help law students overcome significant obstacles to success if the growth mindset messages are combined with a program that encourages self-advocacy of the growth mindset position by the students. Moreover, such a program appears feasible, especially at the institutional level such as through orientation sessions. Given the significant implications for student performance and wellbeing, law schools could benefit from working with researchers in the cognitive psychology field to design and test a program specifically aimed at law students.

#### B. Rigorous, “Mindful” Feedback, Even on Its Own, May Be Sufficient to Teach a Growth Mindset

Sperling and Shapcott’s and Rosen’s suggestion that professors give growth mindset oriented feedback<sup>227</sup> could, possibly even without a self-advocacy program, result in the adoption of adaptive cognition, behavior and affect consistent with a change in mindset. But, to achieve these results, it appears the feedback may need to incorporate all of the following characteristics: it must couple rigorous critique (high standards) with statements

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225. To avoid triggering the fixed mindset, I also include instructions on peer editing forms that tell peer editors not to give generic praise such as “You’re a great writer” and instead to give specific praise such as “You did a great job on your synthesized rule.” See *infra* nn. 234–238 and accompanying text (discussing ability versus specific praise).

226. See *supra* nn. 149–171 and accompanying text (describing Aronson study); *supra* nn. 172–179 and accompanying text (describing Good study).

227. See Rosen, *supra* n. 2, at 183–185; Sperling & Shapcott, *supra* n. 1, at 77–80.

that the students are being held to the high standards because they can, with effort and persistence, meet those standards, and it must avoid “generic” or “ability” praise.<sup>228</sup> Significantly, feedback with this combination of attributes can be given in any type of law school class, including large doctrinal classes, seminars, small skills classes, and clinical settings.

In a study by Geoffrey Cohen, Claude Steele, and Lee Ross,<sup>229</sup> the synergy of detailed, robust criticism coupled with high standards and assurances that the students can meet the standards with effort and persistence triggered in students adaptive responses consistent with the growth mindset—in particular, increased task motivation, trust in the critic, and identification with the skill at issue.<sup>230</sup> Utilizing robust criticism to trigger the growth mindset may seem counterintuitive, as criticism itself can trigger maladaptive responses in fixed mindset students.<sup>231</sup> In light of this, we may mistakenly think that praise is the antidote. However, praise itself can trigger the maladaptive characteristics of the fixed mindset.<sup>232</sup> Contrary to the belief of many parents and teachers, praise does not necessarily have beneficial effects on motivation.<sup>233</sup>

This is not to say that the intuitive desire to give positive feedback is entirely misguided. However, whether praise has beneficial or negative effects on motivation and performance depends on the type of praise given. Studies suggest that specific praise

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228. Cohen et al., *supra* n. 74, at 1314; *supra* pt. II; see also Sperling & Shapcott, *supra* n. 1, at 77–81 (suggesting law professors can foster a growth mindset by avoiding performance praise and instead focusing feedback on effort and other controllable aspects of student work).

229. See e.g. Cohen et al., *supra* n. 74. The purpose of the Cohen study was to examine methods of providing critical feedback to students without triggering stereotype threat. *Id.* at 1302–1303. The study examined differences in Black and White students’ responses to critical feedback under various conditions. *Id.* The Cohen study did not measure mindset specifically; rather, the researchers hypothesized from the results of the study that “effectiveness of wise feedback may indeed lie in the message it conveys about the malleable nature of ability—the message that greater effort will yield performance that surpasses the capacities demonstrated to date.” *Id.* at 1315.

230. *Id.* at 1303. Note that, while all students in the study benefited to some degree from this synergy, the Black students in the study benefited to a significantly higher degree than the White students in the study. See *id.* at 1302 (summarizing the results).

231. See Licht & Dweck, *supra* n. 51, at 628–629 (after experiencing critical feedback, fixed mindset students decreased effort and reduced use of learning strategies).

232. Cimpian et al., *supra* n. 49, at 314–315.

233. Mueller & Dweck, *supra* n. 196, at 33; see also Sperling & Shapcott, *supra* n. 1, at 65–67 (critiquing various recommendations that law professors balance critical feedback with positive feedback to help increase students’ self-efficacy).



(also called “process” or “effort” praise) can lead to heightened self-esteem, increased motivation and utilization of effective problem-solving strategies.<sup>234</sup> In contrast, ability praise (also called “generic” praise) leads people to adopt a fixed theory of ability with respect to the thing praised.<sup>235</sup> Ability praise, perhaps because it triggers the fixed mindset, can lead to decreased task persistence, task enjoyment, and task performance following a perceived failure.<sup>236</sup> In one study, fifth graders praised for their intelligence subsequently described intelligence as a fixed trait more so than children praised for hard work, who described intelligence as subject to improvement.<sup>237</sup> At least one other study suggests that ability praise can have a particularly negative effect on task persistence.<sup>238</sup>

Although the mindset research clearly indicates that specific/effort praise is superior to generic/ability praise, the Cohen study suggests that criticism need not necessarily be buffered with any form of praise. In the Cohen study, coupling robust criticism with a message that the student is being held to a high standard and an assurance that the student can with persistence and effort meet that standard led to increased task motivation, trust in the critic, and identification with the skill at issue.<sup>239</sup> Students in the study were given one-and-a-half pages of criticism on a letter they were assigned to draft. The study found that the students’ task “motivation was sustained not by diluting the one-

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234. *Id.*

235. *See id.* Examples of ability praise include the following: “he’s a naturally-gifted writer” and “you’re a great analyst.” Similar sentiments can be conveyed using specific praise, which is not shown to trigger the fixed mindset and its associated maladaptive characteristic, by making the following comments: “he did a great job on the memo” or “I can really see the results of your extra work on analogical reasoning.” I was interested to learn that even young children can discern the difference between similarly worded ability praise versus specific/effort praise. *See* Cimpian et al., *supra* n. 49, at 314–315 (finding that four-year old children tend to react maladaptively to “you are a good drawer” as opposed to “you did a good job drawing”).

236. *See e.g. id.* Prior to any mistakes or criticism, no significant difference existed between generic ability-praised and specific performance-praised children’s self-assessment and motivation. But generic ability-praised children tended to respond to mistakes by feeling sad, avoiding unsuccessful tasks, failing to generate strategies to repair their mistakes, and denigrating their skill. *Id.* at 314–315.

237. *See* Mueller & Dweck, *supra* n. 196, at 33.

238. Cimpian et al., *supra* n. 49, at 315 (study demonstrating that most significant differences arose with respect to task avoidance, wherein ability-praised children responded to a mistake by saying they did not want to draw again tomorrow).

239. Cohen et al., *supra* n. 74, at 1303.

and-a-half pages of criticism offered or by softening its tone.”<sup>240</sup> Rather, the students responded with increased task enjoyment, identification with the task (writing), and performance when robust criticism was given in combination with a message that the student was being held to a high standard and the reviewer believed the student could meet that standard.<sup>241</sup> Despite the intuitive belief that performance praise helps students feel a greater identification with the praised skill, the students felt significantly greater identification with the skill (writing) when the researchers set high standards and assured them they could meet those standards than when the students received performance praise.<sup>242</sup> The researchers hypothesized that providing the critical feedback in this context allowed the students to readily attribute the criticism to the existence of high standards and the reviewer’s belief in the student’s capacity to reach those standards.<sup>243</sup>

Although they did not specifically test for it, the researchers further hypothesized that the effectiveness of the strategies depended on the actual provision of robust feedback, explaining

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240. *Id.* at 1316; but see Daniel L. Barnett, *Triage in the Trenches of the Legal Writing Course: The Theory and Methodology of Analytical Critique*, 38 U. Tol. L. Rev. 651, 667–668 (2007) (identifying pedagogical benefits of commenting on strengths of student writing and noting that “positive comments should not be conclusory” but rather “positive feedback needs to fully explain why the student is doing something well analytically so the student will understand how that success can be repeated when revising the assignment”).

241. Cohen et al., *supra* n. 74, at 1306–1309. All participants received detailed critical feedback on a draft letter. *Id.* at 1306. However, some participants also received the following assurance that they could meet the high standards being imposed on them:

It’s obvious to me that you’ve taken your task seriously and I’m going to do likewise by giving you some straightforward, honest feedback. The letter itself is okay as far as it goes—you’ve followed the instructions, listed your teacher’s merits, given evidence in support of them, and importantly, produced an articulate letter. On the other hand, judged by a higher standard, the one that really counts, that is, whether your letter will be publishable in our journal, I have serious reservations. The comments I provide in the following pages are quite critical but I hope helpful. Remember, I wouldn’t go to the trouble of giving you this feedback if I didn’t think, based on what I’ve read in your letter, that you are capable of meeting the higher standard I mentioned.

*Id.* at 1307. In contrast, participants in the positive buffer condition received a message that included the following bland or generic praise: “Overall, nice job. . . . You have some interesting ideas in your letter and make some good points. In the pages that follow, I’ve provided some more specific feedback and suggested several areas that could be improved.” *Id.*

242. *Id.* at 1309.

243. *Id.* at 1310.

[h]ad the feedback been cursory rather than critical, students might have doubted the sincerity of the reviewer's self-proclaimed high standards. Indeed, the additional assurance [that students were being held to high standard that the reviewer believed they could meet] might have seemed condescending if it had accompanied milder feedback.<sup>244</sup>

Intuitively, robust, critical feedback likely helps to reinforce the message that high standards are being applied, justify the provision of the assurance that the student can achieve the high standards, and assure the students of the critic's interest in helping the student to reach the higher standard.

Many of the students in the Cohen study, like many first-year legal writing students, remarked that they were impressed by the rigor of the criticism and that seldom in their college careers had a teacher or professor taken their efforts so seriously.<sup>245</sup> Consistent with this, the researchers noted that many effective teachers and programs "do not hesitate to call attention to the gap between students' current performance and the level that they could achieve with unstinting effort."<sup>246</sup>

Thus it appears that robust, detailed criticism on drafts may help foster the growth mindset—or behavior consistent with the growth mindset—as long as the criticism is not coupled with ability praise and is instead coupled with assurances that the students can meet the high standards with effort and persistence. By providing this type of criticism on a draft as opposed to a final paper, the student has an opportunity to meet the high standards implicitly expressed in the criticism. The same effect might be achieved by framing criticism on final papers in terms of how the student can improve the next paper. By continually reminding students that the purpose of criticism is continued improvement, the professor implicitly endorses a growth mindset.<sup>247</sup> The fact

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244. *Id.* at 1316 (citations omitted).

245. *Id.* Of course, volume of feedback does not equate to rigor or pedagogical effectiveness. See Barnett, *supra* n. 240, at 659–674 (analyzing components of effective critique of student legal writing).

246. Cohen et al., *supra* n. 74, at 1316.

247. See *id.* at 1303 ("The invocation of high standards is apt to be of limited value unless the student is assured, implicitly or explicitly, that he or she is capable of reaching the higher standard. Successful interventions thus continually convey the message that students can succeed through effort and persistence. In a sense, the message is that academic ability, or even so-called intelligence, is not fixed or immutable." (Citations omitted)).

that the professor took the time to give the criticism may implicitly assure the student that the professor believes the student can meet the high standards implicitly expressed in the criticism.<sup>248</sup> Moreover, as the Cohen study suggests, when robust criticism is provided in the context of expressly articulated high standards and assurances that the professor believes the students can meet those standards, the criticism is even more likely to help students avoid the maladaptive responses characteristic of the fixed mindset.<sup>249</sup>

### C. Professors' Own Mindsets May Also Have a Significant Influence on Students' Mindsets

Empirical research is needed to examine the extent to which individual professors' growth mindsets can influence students' mindsets in the law-school environment. However, consistent with Rosen's recommendation that law schools "send an overt message of growth mindedness at the institutional level" and Sperling and Shapcott's recommendation that law professors examine their own beliefs about the malleability of intelligence,<sup>250</sup> psychological research does suggest that law students may be influenced by their professors' mindsets.

Because we tend to see others through the same lens that we see ourselves,<sup>251</sup> educators with the fixed mindset tend to see their students' poor performance as an indicator that the students

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248. *But see id.* at 1307–1308 (data suggests that, in the absence of express statements of high standards and belief in the students' potential to meet them, stereotype threat causes some students who are members of stigmatized groups to attribute criticism to negative stereotypes and not the professor's high standards or belief in the students' potential).

249. To prepare students for the robust feedback they will receive, prior to giving students any written critical feedback on a draft paper, I tell them that I will hold them to high standards and that, with persistence and effort, they can meet those standards. I also show them a student paper that illustrates the kind of rigorous feedback they can expect to receive. To further highlight that critical feedback is not indicative of a low fixed ability, I also show them a colleague's appellate brief that I commented on—pointing out how much red ink I spilled on the brief of this former clerk to Justice Sotomayor. Finally, I remind them that no matter how high a student's current aptitude, there is no way the student has mastered legal writing and analysis because mastery takes years of education followed by years of practice. So, no matter how good a job a student has done on an assignment, the student is not getting what he or she came to law school for if I do not comment on numerous ways he or she can continue improving.

250. *See Rosen, supra* n. 2, at 182; *Sperling & Shapcott, supra* n. 1, at 73–74.

251. *Dweck, supra* n. 172.

lack the skill at issue and cannot develop it.<sup>252</sup> As a result, educators with a fixed mindset tend to set lower standards for students they perceive to have low aptitude.<sup>253</sup> Setting lower standards for fixed mindset students may be particularly pernicious in light of research that suggests that setting higher standards helps fixed mindset students shift to a growth mindset.<sup>254</sup> Numerous studies also demonstrate that setting lower standards tends to result in a self-fulfilling prophecy of lower performance.<sup>255</sup>

Additionally, law students may be influenced by professors' mindsets because professors with a growth mindset are more likely to give low achieving students constructive feedback, while professors with a fixed mindset are more likely to give no feedback or feedback that suggests intelligence is fixed, such as ability-praising feedback (for example, "You're a talented writer.").<sup>256</sup> In one study, researchers examined teachers' feedback to students who they were led to believe had performed poorly on a math exam.<sup>257</sup> The teachers with a growth mindset gave both more encouragement to the students (for example, telling them that they could improve if they worked hard) and more concrete strategies for improvement (for example, telling students they needed to change study strategies, suggesting work with a tutor, and providing additional challenging tasks).<sup>258</sup> In contrast, teachers with a fixed mindset were more likely to comfort the student (for example, by explaining that not everyone has math talent).<sup>259</sup> In addition, teachers who believed math is a fixed trait were more likely to favor boys, giving them significantly more concrete suggestions for improvement than they gave female students.<sup>260</sup>

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252. *Id.*

253. *Id.*

254. *See infra* sec. III(B).

255. *See generally* Robert Rosenthal & Lenore Jacobson, *Pygmalion in the Classroom* (Holt, Rinehart & Winston 1968) (demonstrating that grade school students' performance tended to conform to teacher expectations).

256. *See* Sperling & Shapcott, *supra* n. 1, at 72 nn. 249–252 and accompanying text (discussing and citing study by Kyunghye Lee). Recall that ability praise not only reinforces a fixed mindset, it tends to lead to reduced effort on future tasks and decreased self-esteem. *See supra* nn. 234–238 and accompanying text (discussing ability versus specific praise).

257. *See* Dweck, *supra* n. 172 (citing unpublished 2007 study by Good, Rattan, and Dweck).

258. *Id.*

259. *Id.*

260. *Id.*; *see infra* n. 79 (citing study and discussing correlation between fixed mindset and intergroup bias and discriminatory behavior).

Thus, perhaps as a result of these disparities in feedback, research also suggests that when teachers have a fixed mindset, students who enter their classes as low achievers tend to leave as low achievers; whereas, when teachers have a growth mindset, significantly more students who start the year as low achievers end the year as moderate achievers or even high achievers.<sup>261</sup>

In summary, additional empirical research is needed to study the effect of various methods of fostering a growth mindset in performance-emphasizing, high-risk environments like law schools. However, pending further study, a survey of the mindset research and research on changing deeply held beliefs suggests the following four-step approach may help law students make an immediate and long-term shift to the growth mindset. These steps are

- (1) Communicate growth-oriented messages, similar to those suggested by Rosen and Sperling and Shapcott;<sup>262</sup>
- (2) Reinforce the growth-oriented messages and foster persistent, cognitively-accessible change by facilitating students teaching others about the malleability of intelligence, basing those lessons on their own experiences, and repeating those lessons;<sup>263</sup>
- (3) Provide rigorous, thorough feedback on student assignments that avoids generic praise and includes assertions that students are being held to high standards and can meet those high standards with effort, persistence, and instruction;<sup>264</sup> and,
- (4) Walk your talk by examining your own mindset.<sup>265</sup>

#### IV. CONCLUSION

Research suggests that a belief in the malleable nature of intelligence—a “growth mindset”—allows students to thrive during the most challenging periods of their lives. In contrast, the belief

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261. See Dweck, *supra* n. 172 (citing studies).

262. See *supra* sec. III(A).

263. See *supra* sec. III(A).

264. See *supra* sec. III(B).

265. See *supra* sec. III(C).

that we either have it or we do not creates a fear of challenging situations because these are the situations that will reveal our limits. As the growth mindset research shows, the effect of these beliefs on success may be profound.

Fortunately, law schools and law professors can help law students make an immediate and enduring shift to the growth mindset. First, by communicating growth mindset oriented messages, law schools and professors can set the stage for critical feedback and other challenges law students face in their first days and weeks of school. Second, law schools and professors can reinforce these initial lessons and foster persistent, cognitively-accessible change by facilitating students teaching others about the malleability of intelligence, basing those lessons on their own experiences, and repeating those lessons. Third, professors can continue to reinforce growth mindset lessons by coupling robust criticism with a message that the student is being held to a high standard and an assurance that the student can with persistence and effort meet that standard. Finally, in order to avoid undermining these strategies through their own inadvertent fixed mindset reinforcing conduct, professors should examine their own beliefs about intelligence.

Moreover, studies suggest that, with a commitment of as little as three hours with students plus preparation time, law schools may be able to help law students adopt an enduring change in mindset that is sufficiently cognitively accessible to guide future behavior. Given the significant implications for student performance and wellbeing, law schools could benefit from working with researchers in the cognitive psychology field to design and test a program specifically aimed at law students.