Articles

BEYOND *MACCRATE*: THE ROLE OF CONTEXT, EXPERIENCE, THEORY, AND REFLECTION IN ECOLOGICAL LEARNING

Brook K. Baker*

I. INTRODUCTION

> A third year student sits through her UCC course taking notes on the doctrinal portion of the class and responding occasionally to the professor's questions. Thereafter, as a student in the HIV-clinic, she talks with her supervisor about an upcoming negotiation in a summary process action. After talking with her best friend who is doing an externship at the U.S. Attorney's office, she rushes off to her part-time job with a small law firm where she is working on jury instructions for an upcoming trial, responding to her employer's request that she revise her first draft to make the instructions more case specific.

According to the conventional wisdom, this student is being educated in legal doctrine and rigorous legal analysis in the classroom and being trained in reflective, client-centered problem-solving in the in-house clinic. The classroom teacher, a specialist in the doctrine and jurisprudence of the subject area, transmits this specialized knowledge Socratically, and in the process demonstrates and inculcates a repertoire of legal reasoning skills, the "ordinary religion of the classroom," called "thinking like a lawyer."[1] This specialized

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* Associate Professor Northeastern University School of Law, and Director of Legal Practice, a first-year skills program. This article is largely the result of having received my legal education at Northeastern University School of Law in a program which maximized opportunities for contextualized, experiential learning. Its motivation also draws on countless discussions with hundreds of Northeastern students about their learning experiences on co-op. Former Dean Daniel Givelber was especially instrumental in encouraging me to write this article, what was originally intended to be a modest introduction for an empirical analysis of experiential learning. Then Dean Givelber also granted me a research leave which was the only practical means for finishing this project. My mentor Steve Subrin consistently spurred me on as did the enthusiastic reading of an earlier draft by Michael Meltsner. My most careful reader and most thoughtful interrogator, as usual, was my colleague and friend James V. Rowan. To this list, many other colleagues, clinicians, and legal research, analysis, and writing specialists could be added for their robust discussions of how students learn.

1. The "ordinary religion of the classroom" includes skepticism about legal rules, instrumental manipulation of concepts and authority to reach Machiavellian ends, and "tough-minded" linear analysis. Roger C. Crampton, *The Ordinary Religion of the Law School Classroom*, 29 J. LEGAL EDUC. 247, 248 (1978). "In addition to teaching "how to think like a lawyer," law schools teach the ideology of being a lawyer and "how to feel like a lawyer." Karl E. Klare, *The Law-School Curriculum in the 1980s: What's Left?*, 32 J. LEGAL EDUC. 336,

knowledge and these reasoning skills, what Donald Schon calls "research-based theory and technique,"[2] downloaded from one sharp mind to another, theoretically become the intellectual tool kit for the student in her later practice. Likewise, the clinician, a poverty law expert and a specialist in non-directive supervision, case planning, and client relations, uses close supervision in a "reflective practicum"[3] as the mirror by which the student becomes self-critical and skillful in her practice. Through facilitated experimentation and self-reflection, the student refines her rudimentary skills and understandings as she learns "the art of lawyering."[4]

With respect to her work in the lawyer's office, however, the conventional view is that the student is merely working. The student is not learning—she is an assembly line drone being paid for mundane legal tasks by a harried taskmaster who has no time or inclination to advance her learning. This same negative view summarizes the conventional assessment of her friend's externship position, unless the extern is heavily supervised by a school-based instructor who helps the student make sense of her experience. Thus, the predominate learning theory in the legal academy is a simple one—little or no law student learning takes place in lawyers' offices, all true learning takes place under the tutelage of specialized legal educators whose educational legitimacy and hegemony is complete. Using familiar container and conduit metaphors—if you are in school, connected to an educator, you are learning; if you are out and unconnected, you are not.[5]

These conventional understandings about school-centered and practice-based learning are fully reflected in the most recent ABA Report of the Task Force on Law School and the Profession—Narrowing the Gap, *The MacCrate Report*.[6] Although *The MacCrate Report* has done an admirable job of describ-

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339 (1982) (describing an impoverished ideology of "moderate conservatism or liberal reformism"); Michael Meltsner, *Feeling Like a Lawyer*, 33 J. LEGAL EDUC. 624 (1983) (criticizing legal education for teaching that it is right to be "controlling, cool, dispassionate, unfeeling, arrogant.").

2. DONALD SCHON, EDUCATING THE REFLECTIVE PRACTITIONER 3 (1987).

3. *See id.* at 157–72.

4. *See id.* at 13–14, 22 (discussing professional artistry); Gary S. Laser, *Educating for Professional Competence in the Twenty-First Century: Educational Reform at Chicago-Kent College of Law*, 68 CHI.-KENT L. REV. 243, 250–68 (1993).

5. For a full articulation of the pervasiveness of the conduit metaphor in academic learning, one that requires being "hooked up" with an educator who "transmits" knowledge, see Asghar Iran-Nejad, *Active and Dynamic Self-Regulation of Learning Processes*, 60 REV. EDUC. RES. 573, 574–78 (1990). The container metaphor, a second dominant assumption, reflects

> an epistemological, cognitive and social account deeply embedded in Western thought of how knowing and understanding change and grow .... It involves the belief that to know something requires the learner be separated, or distanced, from the situated experience to be known; that the learner must abstract features of the experience, generalize about them there and then transplant them into a variety of novel situations in which they can be recognized to apply. Schools are often referred to as places where people learn 'out of context,' learn general concepts, or are to be prepared for the world outside school.

Jean Lave, *Word Problems: A Microcosm of Theories of Learning*, *in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 74, 76 (Paul Light & George Butterworth eds., 1993). For a survey of the epistemology of "technical rationality," especially in professional and scientific education, see DONALD SCHON, THE REFLECTIVE PRACTITIONER 21–36 (1983).

6. American Bar Association Section of Legal Education and Admission to the Bar, Report of the Task Force on Law Schools and the Profession: Narrowing the Gap, *Legal Education and Professional Development—An Educational Continuum* (1992) [hereinafter *The*

ing fundamental skills and values in lawyering, it pays scant attention to the ubiquitous experience of law students working as law clerks part-time and during the summer.[7] It pays even less attention to students' externship experiences, and what attention it does give is largely negative.[8] While giving mild lip service to the possibility that students might be learning-on-the-job during law school as part of "an educational continuum," *The MacCrate Report* mainly tips its hat to the traditional "core curriculum" as doing its job "well in teaching substantive law and developing analytical skills,"[9] while valorizing the skills pedagogy in simulation courses and live-client clinics.[10] Even though live-client

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MacCrate Report]. As evidence of its educator-focus, *The MacCrate Report* recommends that "Law schools should assign primary responsibility for instruction in professional skills and values to permanent full-time faculty who can devote the time and expertise to teaching and developing new methods of teaching skills to law students." *Id.* at 333–34. Law schools may resort to using lawyers and judges as adjunct instructors only if they are under the "guidance, structure, supervision, and evaluation" of full-time teachers. *Id.* at 334.

7. *The MacCrate Report* devotes 3 1\2 pages of its 338 page report on students' law-related employment during law school. *Id.* at 268–71. While acknowledging the prevalence of law student employment, *The MacCrate Report* does not recognize the inherent educational value of this employment. Instead, the Task Force applauds "any attempt *to inject* educational value into this experience," "recommends [that] legal employers and law schools should join together to develop models *for strengthening the educational content* of term-time employment," and urges that "[t]he *possibility of adding an educational element* to the summer clerkship experience should also be explored." *Id.* at 270 (emphasis added). These word choices by the Task Force are not accidental; they reflect a profound distrust of contextual learning experiences in real practice settings. These word choices demonstrate that the Task Force sees learning *during law school* occurring only if it is managed and supervised by school-based educators. So much for an educational continuum; there is in fact a dichotomy—educator-controlled teaching during law school and raw experience in practice after law school.

8. *The MacCrate Report* gives exactly 14 lines of text to credit-bearing externships. *Id.* at 271.

> Some law schools permit students to work in externships for credit. It is likely that this practice will increase over time. A *significant problem* with credit-bearing externships is that the quality of supervision varies considerably depending on the experience of the field placement supervisor and the amount of time he or she is able to devote to such supervision.
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> In recognition of this problem, the ABA has sought to require law schools to *oversee* the nature of the supervision. This, alone, *may not be sufficient to solve the problem.* Further steps should be taken to require faculty involvement in the design, supervision and evaluation of every program of extern experience, and to emphasize the critical importance of faculty responsibility for *overseeing* extern programs. The Task Force recommends that these principles be emphasized in ABA accreditation Standards.

Id. (emphasis added).

9. *Id.* at 236 (citing THE FINAL REPORT AND RECOMMENDATIONS OF THE [ABA] TASK FORCE ON PROFESSIONAL COMPETENCE (1983)).

10. "The law school community deserves credit for its accomplishments to this time in developing the components of a robust skills curriculum." *Id.* at 237. "Clinics have made, and continue to make, an invaluable contribution to the entire legal education enterprise. They are a key component in the development and advancement of skills and values throughout the profession." *Id.* at 238.

> To the Task Force, full-time clinical (or experiential) teachers are the stalwarts of skills/values instruction. The recurring theme in the Report's harsh critique of transitional, CLE, apprenticeship, and other programs is the absence of mentors, i.e., clinicians, who, as portrayed in the Report, reflect "[c]ommitment to teaching skills, experience, training, knowledge of the growing literature of clinical scholarship, an ability to contribute to that scholarship, and reflection and attention to educational theory" as well as a "willingness to be highly accessible to students, patience, and sensitivity [sic]." The favored status of clinicians finds its contrast in the Report's evident uneasiness with the value of externships and of summer law firm clerkships as vehicles for skills/values exposure, absent

clinics are available to only 30% of law students because of space limitations[11] and even though such experience is ordinarily for 3-4 credits only, practical experience in the clinic is the only "live" experience of lawyering by law students that is significantly validated by *The MacCrate Report.* Rather than narrowing the gap, the Task Force has perpetuated, even reified, the chasm between the academy and practice, at least during law school.

Much has been written, pro and con, about the conventional Langdellian classroom[12] and about the supervisory process of clinicians.[13] Most legal scholars, however, have written primarily from an educator-centered and school-centered perspective because teaching in the classroom and the clinic constitute the context and practice of the people who write law review articles. But what about the students' learning perspective and what about the non-clinical world of practice? Can and do students learn experientially and contextually out in the real world other than under the tutelage of clinicians? Is there reliable theory which supports such learning? Is there data which illuminates whether and under what circumstances students learn well "on the job" and what distinguishes a better learning experience from a worse one?[14]

I think there is an emerging theory of ecological learning[15] which draws

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sustained law school input.
John J. Costonis, *The MacCrate Report: Of Loaves, Fishes, and the Future of American Legal Education*, 43 J. LEGAL EDUC. 157, 183 (1993) (citations to the Report omitted).

11. *The MacCrate Report, supra* note 6, at 241.

12. *See, e.g.*, Paul D. Carrington, *Of Law and the River*, 34 J. LEGAL EDUC. 222 (1984) (pro); Duncan Kennedy, *Legal Education as Training for Hierarchy, in* THE POLITICS OF LAW: A PROGRESSIVE CRITIQUE 38 (David Kairys ed., 1982) (con); James Boyle, *The Anatomy of a Torts Class*, 34 AM. U. L. REV. 1003 (1985) (con); Howard Lesnick, *Infinity in a Grain of Sand: The World of Law and Lawyering as Portrayed in the Clinical Teaching Implicit in the Law School Curriculum*, 37 UCLA L. REV. 1157 (1990) (con); Paul F. Teich, *Research On American Law Teaching: Is There A Case Against The Case System*, 36 J. LEGAL EDUC. 167, 169–73 (1986) (collecting defenses and critiques of the case method with citations).

13. *See, e.g.*, Peter Hoffman, *Clinical Course Design and the Supervisory Process*, 1982 ARIZ. ST. L.J. 277 [hereinafter Hoffman, *Supervisory Process*]; Peter Hoffman, *The Stages of the Clinical Supervisory Relationship*, 4 ANTITRUST L.J. 301 (1986); Kenneth Kreiling, *Clinical Education and Lawyer Competency: The Process of Learning to Learn From Experience Through Properly Structured Clinical Supervision*, 40 MD. L. REV. 284 (1981); Michael Meltsner et al., *The Bike Tour Leader's Dilemma: Talking About Supervision*, 13 VT. L. REV. 399 (1989); James H. Stark et al., *Directiveness in Clinical Supervision*, 3 B.U. PUB. INT. L.J. 35 (1993).

14. The analysis of several sources of empirical data, particularly data concerning student lawyering experiences in the Northeastern University School of Law Cooperative Legal Education Program, will be the subject of another article to be co-authored with Professor and former Dean Daniel J. Givelber.

15. Ecology, according to the simple dictionary definition is "the relationship between organisms and their environment." The American Heritage Dictionary (2d. College ed. 1982). We have all come to understand that natural ecologies are complex, dynamic systems of subtle and dramatic interactions between light, air, earth, organic and inorganic chemicals, and myriad forms of plant and animal life which cooperate and compete in the dance of individual and gene pool survival. Likewise, it is our understanding that the social ecologies of humans are complex, multilayered, highly interactive, interdependent, and fluid over time. I hope that the term "ecological learning" suggests the multiplicity and complexity of factors which enable "natural" learning and growth in professional settings.

Although I am unaware of a theory of "ecological learning" per se, much has been written about improving the ecological validity of the cognitive sciences by studying cognition in the natural ecology where it occurs; thus, there is a new wave of ecologically valid studies. *See, e.g.*, JAMES J. GIBSON, THE ECOLOGICAL APPROACH TO VISUAL PERCEPTION (1979); CONCEPTS AND CONCEPTUAL DEVELOPMENT: ECOLOGICAL AND INTELLECTUAL FACTORS IN CATEGORIZATION (Ulric Neisser ed., 1987); URIE BRONFENBRENNER, THE ECOLOGY OF

on the cognitive research and theory of Jerome Bruner, John Dewey, Gerald Edelman, Howard Gardner, Diane Gillespie, Mark Johnson, George Lakoff, Donald Schon, Francisco Varela,[16] and others. Thus, in this first of two articles, I will start by investigating the new contextualist wing in cognitive science, a wing which emphasizes historical situation, subconscious simultaneity, eventfulness, fluidity, and cognitive pluralism. The contextualists draw attention to the embodiment, enculturation, and sociability of cognition and to the "enactive" construction of perception, memory, and categories. According to the precepts of a contextualist pedagogy, to "learn" a practice domain one must situate oneself in the domain engaging its authentic dilemmas and actively integrating its multiple sources of information. The focus on contextualism naturally gives rise to questions about specialized contexts, historically-based practice domains such as lawyering, and to related questions concerning the degree of transferability of understanding from one specialized domain or subdomain to another.

Second, having set the contextualist foundation for learning in a practice context, I will review older theories of experiential learning which emphasize the continuity and interactiveness of experience. To those features, I engraft additional features of difficulty, variety, and vitality. In essence, this discussion is an exploration of the phenomenology of experience—the experience of experience—and the conditions of experience which maximize prospects for learning. Although working in role is an important feature of experiential learning, it is not necessary that the student be in an independent, lead role; a variety of legal worker and co-counsel roles can enable learning. Unfortunately, competence, let alone expertise, is not a necessary outcome of experience, even repeat experience. Nonetheless, the likelihood of learning experientially can be enhanced by increasing the student's sense of functional engagement and her sense that her experience makes a difference.

HUMAN DEVELOPMENT: EXPERIMENTS BY NATURE AND DESIGN (1979); ROGER G. BARKER, ECOLOGICAL PSYCHOLOGY: CONCEPTS AND METHODS FOR STUDYING THE ENVIRONMENT OF HUMAN BEHAVIOR (1968).

Not only have psychologists urged more ecological validity, there is a sub-branch in psychology called ecological psychology which, among other things, studies behavior settings, specific social settings, like the post office, which call forth specific behaviors, like being a postal-customer. *See* PHIL SCHOGGEN, BEHAVIOR SETTINGS: A REVISION AND EXTENSION OF ROGER G. BARKER'S ECOLOGICAL PSYCHOLOGY (1989). The concept of behavior setting is more limited and specific than that of context which I rely on (at length) and which ordinarily assumes more plasticity in cognition and performance. *See* Alexander W. Siegel & Robert Cohen, *Why a House is Not a Home: Constructing Contexts for Development, in* CONTEXT AND DEVELOPMENT 305 (Robert Cohen & Alexander W. Siegel eds., 1991). Moreover, the ecological psychologist's focus on behavior settings, an outgrowth of behaviorism, is more deterministic, less transactional (the human actor has less to "say"), and less social (other humans have less to "say") than is true in the contextualism I prefer. *See id.* at 309.

16. JEROME BRUNER, ACTS OF MEANING (1990); JOHN DEWEY, ART AS EXPERIENCE (1934) [hereinafter DEWEY, ART AS EXPERIENCE]; JOHN DEWEY, EXPERIENCE AND EDUCATION (1963) [hereinafter DEWEY, EXPERIENCE AND EDUCATION]; GERALD M. EDELMAN, BRIGHT AIR, BRILLIANT FIRE: ON THE MATTER OF THE MIND (1992); HOWARD GARDNER, THE UNSCHOOLED MIND: HOW CHILDREN LEARN AND THINK AND HOW SCHOOLS SHOULD TEACH (1991); DIANE GILLESPIE, THE MIND'S WE: CONTEXTUALISM IN COGNITIVE PSYCHOLOGY (1993); MARK JOHNSON, THE BODY IN THE MIND: THE BODILY BASIS OF MEANING, IMAGINATION, AND REASON (1987); GEORGE LAKOFF, WOMEN, FIRE, AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL ABOUT THE MIND (1987); SCHON, *supra* note 2; SCHON, *supra* note 5; FRANCISCO J. VARELA ET AL., THE EMBODIED MIND: COGNITIVE SCIENCE AND HUMAN EXPERIENCE (1991).

Third, I will challenge two premises in clinical experiential theory[17] concerning the centrality and place of theory and reflection in the so-called experiential "learning cycle." I will propose a "post-modern"/cognitive understanding of theory and reflection—one where theory is a resource rather than a blueprint; where theory and reflection are primarily employed in-action, at the moment of problem-solving; where theory becomes encapsulated in practice exemplars which are the principal resources for future engagements; and where reflection- and theory-after-the-fact are used to obtain a more stable coherence, a more thoughtful socialization, and greater interpersonal understanding.

In my conclusion, I urge that we overturn the hegemony of educator-centric views about legal education and that we undertake a radical shift, a paradigmatic shift, in our understanding of the role to be played by practice-based experiences during law school. These first steps in a theory of ecological learning establish that people learn best about the context and practice of law by participation in the expert domain of lawyering. Rather than denigrating our students' work experience during law school, we should celebrate it; rather than perpetuating the experiential and conceptual gap between law school and practice, we should *really* narrow it.

Although I have told you what I intend to do, I should also let you know what I will postpone for the present. Most importantly, I will need to finish my theory of ecological learning in a subsequent article by discussing: (1) a reconstituted autonomous Self in the workplace; (2) the vibrant, interpersonal ecology of the workplace; and (3) the nature of expertise and its process of transmission to a novice. I conclude my construction of a theory of ecological learning with a call to ratify apprentice-like opportunities in real practice settings as the near optimal circumstance for developing genuine understandings of lawyering. After presenting the theory, I will explore historic and current criticisms of practice-based learning,[18] concluding that the theory compares well against school-based learning but outlining important questions to be resolved. In a third co-authored article, I will test the theory empirically and investigate what distinguishes a successful and less successful practice-based learning experience.

In neither theoretical article will I describe a new pedagogy of ecological learning and how it might blend together with a school-based curriculum. In particular, I will not discuss what form of preparation, if any, might best enable students to learn ecologically nor will I discuss what form of debriefing, if any, might be undertaken so that students' experiences can be best rewoven into the tapestry of legal education. These issues concern me—they seem vitally important. But they will not be central to legal educators in general unless we first become convinced that something profoundly meaningful and educational is occurring in our students' ubiquitous work experiences during law school.

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17. My reason for including our community's evolving understanding is to provide a context for evaluating more abstract learning theories from the domain of cognitive psychology. If we wish to apply these new insights, we will have to do so in our own practical and theoretical context.

18. The principal historic criticisms of practice-based learning are: (1) premature exposure to trivial experience; (2) poor supervision; (3) lack of an educational focus; and (4) lack of reflectiveness. A more recent criticism is that practice-based learning does not ordinarily encourage critique of law or legal culture. These criticisms will be analyzed at some length in the second article.

Until there is a theory to replace the assumption of school-based-education-only, legal educators and regulators will be unwilling to shift their matrix of beliefs and to explore seriously these important issues of implementation.

II. TOWARD A THEORY OF ECOLOGICAL LEARNING: CONTEXTUALISM, EXPERIENTIALISM, AND A NEW ROLE FOR REFLECTION AND THEORY

Recent learning theory has refocused attention on the human ability to learn contextually, outside of formal schooling, in the activities of everyday life and within the particular context of an established community practice or expert domain such as lawyering. One of the chief proponents of this theory is Howard Gardner who has previously articulated and popularized theories of multiple intelligences[19] and more recently has called for a radical restructuring of educational institutions across the spectrum—including, by inference, law schools.[20] This restructuring would promote "genuine understanding;" it would both build on early learning achievements and then more directly confront these achievements where they block expert knowledge systems. Restructuring schools would also overcome practices which ignore, disadvantage or even stigmatize certain learning styles[21] and certain learners.[22] For purposes of this article, the most promising area of thought is Gardner's emphasis on the value

19. Gardner has postulated seven human intelligences. HOWARD GARDNER, FRAMES OF MIND: A THEORY OF MULTIPLE INTELLIGENCES (1983). "According to this analysis, we are all able to know the world through language, logical-mathematical analysis, spatial representation, musical thinking, the use of the body to solve problems or to make things, an understanding of other individuals, and an understanding of ourselves." GARDNER, *supra* note 16, at 12. From his theory of multiple intelligences, Gardner argues that "people do learn, represent, and utilize knowledge in many different ways ...." *Id.*

20. *See* GARDNER, *supra* note 16.

21. The present preference of schools for linguistic and logical-quantitative modes of intelligence predictably privileges certain students and makes failures of others. "For instance, there is a significant population that lacks facility with formal examinations but can display relevant understanding when problems arise in natural contexts." *Id.* at 13. Gardner's broadest pedagogical suggestion is that disciplines should be presented and assessed through a variety of means designed to match the full array of human intelligences. *Id.* at 12–13.

Legal educators as well have noted that practice-based learning may also offer unique educational benefits for those students whose best learning style is not the passive absorption of abstract, neutrally constructed concepts from "scholars." Stephen Maher, *The Praise of Folly: A Defense of Practice Supervision in Clinical Legal Education*, 69 NEB. L. REV. 537, 564–65 (1990) (citations omitted). "Some students learn better by doing"—indeed some students only do well in the real world. *Id.* at 566; *accord* Janet Motley, *Self-Directed Learning and the Out-of-House Placement*, 19 N.M. L. REV. 211, 223 (1989).

The term "learning styles" is now a term of art and its full exploration is beyond the scope of this paper.

22. There is a growing belief that contextual, experience-based learning is especially beneficial for those denied access to the centers of power and who therefore have had limited exposure to high level of abstraction, the analytical cubby holes, and linear logic which is the dominant cognitive paradigm in most schools. *See, e.g.*, James S. Coleman, *Differences Between Experiential and Classroom Learning*, *in* EXPERIENTIAL LEARNING 49, 55, 59 (Morris T. Keeton et al. eds., 1976) (applying principle to disadvantaged youth); MARY FIELD BELENKY ET AL., WOMEN'S WAYS OF KNOWING, THE DEVELOPMENT OF SELF, VOICE, AND MIND (1986) (applying principle to women); PATRICIA J. WILLIAMS, THE ALCHEMY OF RACE AND RIGHTS: DIARY OF A LAW PROFESSOR 8–9 (1991) (describing the theoretical legal understanding of Anglo-American jurisprudence). The beneficiaries of a pedagogy rich in experiential learning would include students from diverse racial, ethnic and cultural backgrounds, working-class students, and many women students.

of contextual, experiential learning opportunities outside of school, especially for introducing novices or pre-professionals to an expert domain. Thus, I want to start my synthesis and presentation of a theory of ecological learning by reviewing an emerging body of cognitive theory[23]and experimentation that emphasizes context and experience as bedrock components of ecological learning.

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23. Other legal commentators have made different use of some of this same cognitive research, but none of them has directed the research towards a theory of learning on the job. *See, e.g.*, MARTHA MINOW, MAKING ALL THE DIFFERENCE (1990) (discussing the cognitive categorization basis of discrimination); Daniel A. Farber & Suzanna Sherry, *Telling Stories Out of School: An Essay on Legal Narratives*, 45 STAN. L. REV. 807 (1993) (using theories of expertise to validate, in part, the legitimacy of rationalized narrative in legal scholarship); Daniel A. Farber, *The Inevitability of Practical Reason: Statutes, Formalism, and the Rule of Law*, 45 VAND. L. REV. 533 (1993) (using theories of expertise to validate neo-pragmatism and "practical reason"); John Martinez, *A Cognitive Science Approach to Teaching Property Rights in Body Parts*, 42 J. LEGAL EDUC. 290 (1992) (using cognitive science to analyze paradigm or boundary-line shifts in legal analysis); Anthony Palasota, *Expertise and the Law: Some Recent Findings from the Cognitive Sciences About Complex Human Information Processing*, 16 T. MARSHALL L. REV. 599 (1991) (applying theories of expertise to legal writing programs); Richard L. Roe, *Valuing Student Speech: The Work of the Schools as Conceptual Development*, 79 CAL. L. REV. 1271, 1292–304 (1991) (using cognitive and education research to argue for more freedom of speech for secondary students to enhance their conceptual development); Joseph M. Williams, *On the Maturing of Legal Writers: Two Models of Growth and Development*, 1 J. LEGAL WRITING INST. 1 (1991) (analyzing the socialization of novices into the legal discourse community); John Batt, *Law, Science, and Narrative: Reflections on Brain Science, Electronic Media, Story and Law Learning*, 40 J. LEGAL EDUC. 19 (1990) (reviewing brain science of left-brain and right brain and of the triune brain to advocate use of electronic narrative in legal education); Steven Winter, *Bull Durham and the Uses of Theory*, 42 STAN. L. REV. 639 (1990) [hereinafter Winter, *Uses of Theory*] (using cognitive theory to refute Stanley Fish and to emphasize the importance of human imagination, "situated self-consciousness," and the imperative of change); Jay Feinman, *The Jurisprudence of Classification*, 41 STAN. L. REV. 661, 696–706 (1989) (arguing for a paradigmatic approach to classification); John B. Mitchell, *Current Theories on Expert and Novice Thinking: A Full Faculty Considers the Implications for Legal Education*, 39 J. LEGAL EDUC. 275 (1989) (focusing on the difficult acculturation of a novice into a community of expertise and recommending classroom perspectives and activities which might aid that acculturation); Steven Winter, *The Cognitive Dimension of the Agon Between Legal Power and Narrative Meaning*, 87 MICH. L. REV. 2225 (1989) [hereinafter Winter, *The Cognitive Dimension*] (using insights of experientialist cognitive theory to explore the ability of narrative to transform understanding by juries and other legal actors); Steven Winter, *Transcendental Nonsense, Metaphorical Reasoning, and the Cognitive Stakes for Law*, 137 U. PENN. L. REV. 1105 (1989) [hereinafter Winter, *Transcendental Nonsense*] (arguing for understanding the source and prevalence of "idealized cognitive models" in legal reasoning); Albert J. Moore, *Trial by Schema: Cognitive Filters in the Courtroom*, 37 UCLA L. REV. 273 (1989) (applying schema theory to juror decision-making and trial practice); Charles R. Lawrence, III, *The Id, the Ego and Equal Protection: Reckoning with Unconscious Racism*, 39 STAN. L. REV. 317, 336–39 (1987) (exploring the cognitive basis of unconscious racism); John O. Mudd, *Beyond Rationalism: Performance-Referenced Legal Education*, 36 J. LEGAL EDUC. 189 (1986) (focusing on performance features of expertise and linking performance to competencies); Gerald P. Lopez, *Lay Lawyering*, 32 UCLA L. REV. 1 (1984) (applying cognitive theory of "stock stories" to hailing a taxi cab in Manhattan); John L. Barkai, *A New Model for Legal Communication: Sensory Experience and Representational Systems*, 29 CLEV. ST. L. REV. 575 (1980) (applying sensory experience theory to explain preferences in communication); John D. Ayer, *Isn't There Enough Reality to Go Around? An Essay on the Unspoken Promises of Our Law*, 53 N.Y.U. L. REV. 475 (1978) (after exploring early experientialist theory, advancing the use of metaphor as a way to rehumanize the law).

A. Contextualism—Learning From the Whole Ecology of a Practice Domain

1. The Emergence of a Contextualist Cognitive Science

In the most recent phase of cognitive science, contextualist theorists and researchers have begun "to stress an *inextricable* link between contextual constraints and the acquisition of knowledge."[24] In this view, "cognition is *typically* situated in a social and physical context and is rarely, if ever, decontextualized."[25] As a world view, contextualism focuses on the historically situated and embodied human organism. This contextualized human selects and explores her social participations, preferring functionality to passivity. This human endows her world with meaning, interpreting the richly textured, multifeatured, and fluid events of her physical, cultural, and social environment with all their regularity and surprise. In the contextualist view, we navigate as purposeful animals to ensure our biological survival in a world of walkable surfaces and gaping chasms, of edible plants and their poisonous cousins, of places temperate and those much too hot or cold. However, we are not soloists in purely physical explorations and survivalist activities. We are socially and culturally situated in a world of inherited language, symbolic systems, and social practices where we experience interpersonal mutuality, interdependence, and communication with family, friends, co-workers, and community.

In the contextualist view, situated, functionally engaged cognition has five principal features: (1) cognition is historically and enactively situated in a physical body and a social/cultural context; (2) cognition is simultaneous, holistic, and predominantly subconscious as well as conscious; (3) cognition focuses on the flow of "events" in a fluid field of stability and change; (4) cognition prefers active social practice which ordinarily evidence both functionality and authenticity; and (5) cognition is "pluralistic," attending to multiple sources and choosing among many plausible interpretations and actions. Each of these features of contextualism ultimately has important implications for the central cognitive activities of perception, memory, and categorization, and, thus, ultimately for a theory of ecological learning.

a. Situation: Enaction, Embodiment, and Enculturation

Contextualists start by emphasizing that the cognition and lived experience of humans are situated in both a physical and social context, reflecting a state of total and constant cognitive engagement. Contextualism does not stop at the metaphor of interaction between a separable human subject and her physical and social environments. It goes further to propose embedded, situational transactions,[26] even *enaction*,[27] within a temporal world of biolog-

24. George Butterworth, *Context and Cognition in Models of Cognitive Growth*, *in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 1 (Paul Light & George Butterworth eds., 1993).

25. *Id.* "To be human, indeed to be living, is always to be in a situation, a context, a world." VARELA ET AL., *supra* note 16, at 59. "[E]nvironing world, consciousness, and embodying organism, form a unique complex *'whole' whose 'parts' are themselves strictly inseparable (albeit distinguishable) contextures* ...." RICHARD M. ZANER, THE CONTEXT OF SELF: A PHENOMENOLOGICAL INQUIRY USING MEDICINE AS A CLUE 107 (1981).

26. John Dewey and Arthur Bentley describe the symbiosis of environment and organism as transactive instead of interactive, a term which suggests too much separateness.

ically and socially significant events, continuously negotiated meanings, and constituent actions. In this human/environmental enaction, the real world does not impose its unmediated realities on a passive consciousness; neither is there a subjectivist solipsism where reality vanishes and mind creates all.[28] In the new view, context is as much a factor of what the situated person considers to be relevant in her search for integrated functional coherence as it is an environmental or cultural imposition; to an important degree, humans "create a meaningful context for an activity"[29] by their engagement with the plethora of available environmental data. Catalyzed by their own experiential endowments,[30] their present intentions and needs, and their future goals, humans

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KNOWING AND THE KNOWN 123 (1949); *see* Richard Lerner & Jonathan Tubman, *Developmental Contextualism and the Study of Adolescent Development, in* CONTEXT AND DEVELOPMENT 183, 186, 194 (Robert Cohen & Alexander W. Siegel eds., 1991); GILLESPIE, THE MIND'S WE, *supra* note 16, at 141. Cognition, thereby, consists of mutual osmotic exchange or a cycle of mutual osmotic exchange across the membrane and into the depths of lived experience.

27. An enactive cognitive science has been proposed by Francisco J. Varela, Evan Thompson, and Eleanor Rosch. *See* VARELA ET AL., *supra* note 16. Within this science, the perceiver cannot be severed analytically or actually from embedded action in a social and biological world. "[S]ensory and motor processes, perception and action, are fundamentally inseparable in lived cognition. Indeed, the two are not merely contingently linked in individuals, they have also evolved together." *Id.* at 173. Related to the enactive metaphor is the complexure metaphor used by Zaner. Complexure is a holistic gestalt of an embodying human organism, the temporal stream of her mental life, and her environing perceptual milieu. ZANER, *supra* note 25, at 92–110.

28. *See* GILLESPIE, *supra* note 16, at 60; VARELA ET AL., *supra* note 16, at 172 (urging "a middle path between the Scylla of cognition as the recovery of a pregiven outer world (realism) and the Charybdis of cognition as the projection of a pregiven inner world (idealism)").

29. Neil Mercer, *Culture, Context, and the Construction of Knowledge in the Classroom, in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 28, 32 (Paul Light & George Butterworth eds., 1993); *see* Siegel & Cohen, *supra* note 15, at 308–09; VARELA ET AL., *supra* note 16, at 174 ("the organism both initiates and is shaped by the environment. ... [W]e must see the organism and environment as bound together in reciprocal specification and selection").

30.

> Whenever anything is undergone in consequence of a doing, the self is modified. The modification extends beyond acquisition of greater facility and skill. Attitudes and interests are built up which embody in themselves some deposit of meaning of things done and undergone. These funded and retained meanings become a part of the self.

DEWEY, ART AS EXPERIENCE, *supra* note 16, at 264.

Edelman has proposed a biological theory of brain function, the theory of neuronal group selection, which has three central tenets, developmental selection, experiential selection, and reentry. EDELMAN, *supra* note 16, at 81–98. The first tenet of neuronal group selection, *developmental selection,* refers to the dynamic processes of embryonic development (and subsequent environmental experience) which results in the neuroanatomical mappings and neurological cross-connections characteristic, but individually variant, of a given species. *Id.* The second tenet, *experiential selection,* relates to the neurological consequences of perception, cognition, and behavior, namely "synaptic connections in the anatomy are selectively strengthened or weakened by specific biochemical processes." *Id.* at 83–85. Repeated activation of a nearly identical set of connections, with related strengthening and weakening of synapses, results in "a variety of functioning *circuits.*" *Id.* at 85. The third tenet, *reentry,* refers to the massively interconnected relationships which emerge between different mini-maps occurring within a segment of time. "[T]he selective coordination of the complex patterns of interconnection between neuronal groups by reentry is the basis of behavior." *Id.* Reentry can also work within the neural system itself, without external prodding, the effects of reentry can be fed back to the primary maps—a process called recursive synthesis. At higher levels of cross-referencing between perceptual and behavioral maps, the brain achieves what Edelman calls global mapping. "A global mapping is a dynamic structure containing multiple reentrant local

engage the world enactively, embedded and encultured in the flow of events.

In less abstract terms and as illustration, compare three scenarios. In the first, a bird watcher drives to a salt water marsh, unpacks her telescope, and spends hour after hour watching migratory birds. At the same time, 200 yards away, the farmer who owns the right to harvest the marsh hay, but not the marsh, is starting up his tractor and blithely cutting swatches in the birds' habitat. Five hundred yards away, a duck hunter in army fatigues whistles a duck call, blasts away, and unleashes his retriever to locate fallen prey. Is there any doubt that reciprocal world-making is going on, that both human intentions and environmental offerings intertwine as enactive experience?

Building on the theoretical bedrock of cognitive situatedness and enactedness, contextualist/experientialist researchers and commentators have found that our most basic conceptual filters and templates are refined from our recurrent body-world transactions—it is here, in our most primal physical situations, that our intuitive understandings of space, time, movement, and objects are formed.[31] This original "biological" experience is supplemented by and engrafted upon our social or cultural experience—by exposure to and participation in the social world of parents, siblings, and others who regularly deploy cultural artifacts, symbols, and rituals in their interactions with us as children. According to contextualist theory, language, knowledge, reason, and, I would argue, learning can only be understood as embodied cognitive processes that are tied inexorably to direct physical experience metaphorically extended to encultured social experience.[32]

Through no other process than the act of *embodied* living, each person accumulates "a stock of relatively stable and well-defined experiences that are shared by all human beings, given the general structure and functioning of the human organism in its environment. The basic experiences serve as the preconceptual material of imagination and rationality."[33] This stock of experiences

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maps (both motor and sensory) that are able to interact with nonmapped parts of the brain." *Id.* at 89. In this global mapping, behavior seeks perception as much as perception prompts behavior. The behavior that an organism seeks, at the most basic of genetic survival factors, are called the value system of the animal. *Id.* at 90–91. Accordingly, "Learning in any species results from the operation of neural linkages between global mappings and the value centers ...." *Id.* at 101.

31. *See, e.g.*, LAKOFF, *supra* note 16; JOHNSON, *supra* note 16; GILLESPIE, *supra* note 16; GARDNER, *supra* note 16; CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING (Paul Light & George Butterworth eds., 1993); ZANER, *supra* note 25, at 1–66. My original appreciation and understanding of Lakoff and Johnson was greatly aided by the earlier work of Steven Winter summarizing and applying their experientialist science. I connect Lakoff and Johnson with the other cognitivists who use the metaphor of contextualism because of their common emphasis on situated, embodied and encultured experience.

Edelman, in particular, focuses on how the mind morphologically "maps" the body and the mind itself during embryogenesis. EDELMAN, *supra* note 16, at 52–64. One of the advantages of focusing on embryogenesis and morphology is that is enables us to recognize how the mind maps the perception system through multiple interconnected mini-maps, layers of brain cells connected to layers of nerve receptors, and how it maps the volitional musculature, the action potential of the body. In its higher functions, the brain also multiply maps itself, creating a neurological basis for memory, awareness of the world, and even awareness of Self.

32. *See* sources cited in *supra* note 31.

33. Winter, *Transcendental Nonsense*, *supra* note 23, at 1133; *see* ZANER, *supra* note 25, at 1–66 (emphasizing that embodiment creates a contexture, a holistic thematic gestalt, of a human body, its personal space, and its gestural display; this sense of totality out of body parts persists over time).

includes: our up-down and front-back orientation; our inside-outside, body-as-a-container orientation; and our source-path-goal, temporal/narrative orientation. These recurrent, embodied experiences evidence *patterns* which coalesce as *schemas*.[34] These patterns and schemas become the ingredients for our construction of more complex and abstract conceptual schemes and which we then use in subsequent metaphorical elaborations[35] and in the heuristics[36] of encultured daily life. In essence, we make a metaphorical leap from our direct, embodied, physically experienced understandings into new realms, particularly the shared social realms of language and culture. Although our embodied experiences as biological creatures are essentially the same, our imaginative extensions—our new meanings, subsequent understandings, and coherence systems—show individual and cultural variation. The variations are partially constrained, however, because they rely on schemas crystallized from our common, primary-source biological experiences. These variations are further constrained by the regularities of entrenched social patterns and by the intentional commitments and ways of life we adopt.[37]

Although initially embodied in biological experience, a person's cognition situationally[38] evolves as an increasingly *encultured* process;[39] the social practices and symbolic systems[40] of a culture[41] symbiotically interact

34. The term *schema* has a long and diverse history in cognitive psychology, much more representational and propositional in some systems and much more fluid, preproposition, and experience-based in others. Related terms include: "frames, scenes, scenarios, scripts, gestalts, active structural networks, memory organization packets, ... stock stories, ... mental models." Moore, *supra* note 23, at 279 n.6. The idea of *pattern* and the idea of schema are intimately connected. As we accumulate experiences, we gradually recognize patterns, usually intuitively in a sudden burst of recognition. *See* HOWARD MARGOLIS, PATTERNS, THINKING, AND COGNITION: A THEORY OF JUDGMENT (1987); *infra* notes 218–22 and accompanying text. Thus, a contextualist view of schema can probably best be understood as a patterned gestalt. "A schema is a recurrent pattern, shape, and regularity in, or of, these ongoing orderly activities. These patterns emerge as meaningful structures for us chiefly at the level of our bodily movements through space, our manipulation of objections, and our perceptual interactions." Winter, *Transcendental Nonsense*, *supra* note 23, at 1147 (citing JOHNSON, *supra* note 16, at 29). Mark Johnson calls these elemental body-based schemas *image schemas*, whereas Lakoff calls them *idealized cognitive models*. JOHNSON, *supra* note 16, at 19–30; LAKOFF, *supra* note 16, at 68–76.

> Although schemata provide coherence, regularity, and consistency, as patterned gestalts, they are not formal structures in the sense of the rules and representations approach in information processing. They do not become pure concepts since they always retain something of the texture and complexity of the temporal events and historical circumstances out of which they arise.

GILLESPIE, *supra* note 16, at 149.

35. JOHNSON, *supra* note 16, at 104-112; LAKOFF, *supra* note 16, *passim*.

36. "Heuristics are intuitive strategies or theories that people employ in complex decision-making tasks." Moore, *supra* note 23, at 276 n.4.

37. See *infra* notes 72–88 and accompanying text, for further discussion of the pluralism of cognition.

38. "[The term 'situated'] implies that a given social practice is multiply interconnected with other aspects of ongoing social processes in activity systems at many levels of particularity and generality." Lave, *supra* note 5, at 84.

39. *See, e.g.*, BRUNER, *supra* note 16.

40. "The symbolic systems that individuals used in constructing meaning were systems that were already in place, already 'there,' deeply entrenched in culture and language. They constituted a very special kind of communal tool kit whose tools, once used, made the user a reflection of the community." BRUNER, *supra* note 16, at 11.

41.

> [T]he concept of culture helps us understand learning as a socio-historical and interpersonal process, not just as a matter of individual change or development.

with emergent sensory understandings. An influential group of social developmental scientists, led by Soviet psychologist Lev Vygotsky, has emphasized the centrality of accumulated cultural knowledge and interactiveness with others.[42] "According to our new and expanded understanding, mind exists equally within the skull, in the objects strewn about in the culture, and in the behaviors of other individuals with whom one interacts and from whom one learns."[43] Jerome Bruner goes so far as to argue that cognition, indeed the Self, are "distributed" in a social world through its tools and interpersonal networks.[44]

b. Holism, simultaneity, subconscious predominance.

Given that cognition is enactively situated in a physical and social context, how does the mind apprehend such context to engage its constraints, routines, and complexities? Although I will turn to this question again and again,

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> ... [L]earning [in context, is] a communicative, cumulative, constructive process, one which takes place in situations where past learning is embodied in present learning activity, and in which participants draw selectively on any information which is available to make sense of what they are doing.

Mercer, *supra* note 29, at 44.

The discipline of cognitive/cultural anthropology stands "'for a new view of culture as shared knowledge—not a people's customs and artifacts and oral traditions, but what they must know in order to see as they do, make the things they make, and interpret their experience in the distinctive way they do.'" Jacqueline Goodnow & Pamela J. Wharton, *Contexts and Cognitions: Taking a Pluralistic View, in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 157, 162 (Paul Light & George Butterworth eds., 1993) (quoting Naomi Quinn & Dorothy Holland, *Culture and Cognition, in* CULTURAL MODELS IN LANGUAGE AND THOUGHT 3, 4 (Dorothy Holland & Naomi Quinn eds., 1987)). "[C]ulture is both 'in' us and that which we are embedded within. It is a set of ideas and concepts that one shares with groups of people and that are used to construct, understand, and operate in a 'world.'" Winter, *Transcendental Nonsense*, *supra* note 23, at 1135.

42. LEV S. VYGOTSKY, MIND IN SOCIETY: THE DEVELOPMENT OF HIGHER PSYCHOLOGICAL PROCESSES (Michael Cole et al. eds., 1978). "For Vygotsky, the concept of culture offers a way of linking the history of a social group, the communicative activity of its members and the cognitive development of its children." Mercer, *supra* note 29, at 30.

> In this view ... an individual restricted to his own [biological] devices is unthinking, if not unthinkable. From the moment of birth, when parents react to the sex of their newly sighted offspring, the child enters into a world that is rich in interpretations and meanings, all introduced courtesy of the assumptions of the culture in which he happens to be born. The other humans in that world introduce him to physical satisfactions—warmth, food—and to psychological nutrients—love, conversation, humor, surprise. They expose him to language and demonstrate its uses. They present him with the artifacts valued by culture, be they technology like pens or computers, toys like rattle or dolls, art works like stories or songs, or wisdom in the form of rituals, sayings, or moral precepts. Much of the story of human development must be written in light of cultural influences in general and of the particular persons, practices, and paraphernalia of one's culture.

GARDNER, *supra* note 16, at 39.

43. GARDNER, *supra* note 16, at 40.

44. "The realities that people construct are *social* realities, negotiated with others, distributed between them." BRUNER, *supra* note 16, at 105. The idea of social distribution is critically important in a cultural psychology because it deconstructs the false ideology of an isolated consciousness and instead situates human cognition in a social world. Accordingly, "a person's knowledge is not *just* in one's own head" but is distributed in notes, books, computer banks, and associates. *Id.* at 106; *see* DAVID PERKINS, SMART SCHOOLS: FROM TRAINING MEMORIES TO EDUCATING MINDS 133–35 (1992). Likewise, even one's Self is distributed in "'the sum and swarm of participations'" with others. BRUNER, *supra* note 16, at 107 (citation omitted). I will discuss varying conceptions of the Self at greater length in a second article.

contextualists argue that humans are attuned, consciously and subconsciously, to a total situation which *simultaneously* unites, transforms, and colorizes the particulars and which gives rise to a *holistic coherence*. "The whole is experienced as coherent, all at once;" experience is not constructed step-by-step from atomistic parts; instead, parts gain meaning instantaneously from the whole.[45] For example, there is an instant of enactive holism in any good-sized wave on any warm, gentle sea shore—a body, a beach, and a breaking wave all gain a coherence in body-surfing, in a body propelled by an instance of water rushing over quiet depths and even quieter sand.

In this emphasis on the holism of situation, contextualism borrows from Gestalt psychology, one of the precursors of contextualism and its maxim "the whole is greater than the sum of the parts."[46] Accordingly, any move to simplify and denude the total complexity of situation, removes details which enrich cognition and which change the felt quality of the whole—ten women (or men) jumping, running, passing, and shooting a ball makes less sense in a classroom than on a basketball court.

This cognitive focus on holism and simultaneity is critical for contextualists, but what of the related contextualist insight that says we cannot attend

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45. GILLESPIE, *supra* note 16, at 69. The holistic quality of cognition is not limited to perception, but extends to schemas as well.

> Learning a complex schema ... is not an incremental enlargement of a simpler one through internalization or assimilation of more external facts. Neither is it merely making internal modifications in the simpler schema. It is a creative *reconceptualization* of the internal knowledge involving a discontinuous change from a structure with one holistic character (or quality) to another structure with a different holistic character.

Iran-Nejad, *supra* note 5, at 586. Zaner applies the principles of the holistic coherence of "contextures" not only to environing contexts but to temporal consciousness itself—to the experience of experience—and to the self-reflexivity of Self. *Supra* note 25.

Iran-Nejad has convincingly demonstrated one aspect of this all-at-once, holistic reconceptualization through a series of experiments studying surprise endings to stories, e.g., "The haystack was important because the cloth ripped." From a point of confusion or irritation about the meaning of such a sentence, add the word "parachute." The result is instantaneous—the entire sentence (or story) recomposes into a new holistic coherence. *Id.* at 586–87.

Edelman attributes the phenomenal experience of holism to what he calls primary consciousness. EDELMAN, *supra* note 16, at 117–23. "Primary consciousness is the state of being mentally aware of things in the world ...." *Id.* at 112. Primary consciousness is made possible by "continual reentrant signaling between the value-category memory and the ongoing global mappings that are concerned with perceptual categorization in real time." *Id.* at 119. Primary consciousness permits the construction of a coherent complex scene, one that has actions and value consequences for the organism. *Id.* at 119–20. As such, primary consciousness creates a phenomenal experience of the world which coordinates conceptual memory and ongoing perception, it is "a kind of 'remembered present.'" *Id.* at 120.

46. Gestalt psychologists emphasize that people organize the whole of their experience to make it as simple and coherent as possible. *See generally* KURT KOFFKA, PRINCIPLES OF GESTALT PSYCHOLOGY (1935). Our experience of the whole tends towards "good form" and we use factors of proximity, continuation, similarity, and closure to consolidate good form. Stanley Coren & Joan S. Girgus, *Principles of Perceptual Organization and Spatial Distortion: The Gestalt Illusions*, 6 J. EXPERIMENTAL PSYCHOL.: HUMAN PERCEPTION AND PERFORMANCE 404, 409 (1980). Zaner has articulated an expanded contemporary philosophy of gestalt phenomenology where gestalt coherence and closure become imperatives of all of cognition. *See supra* note 25, at 67–91. According to Zaner's view, we are willing to fill in the gaps to experience a satisfying whole rather than a dissatisfying, fragmented chaos. *Id.* at 81–82. We fill in the gaps according to a preference that renders the experience as simple as possible—according to the so-called simplicity or minimalist principle. *See, e.g.*, Gary Hatfield & William Epstein, *The Status of the Minimum Principle in the Theoretical Analysis of Visual Perception*, 97 PSYCHOL. BULL. 155 (1987).

consciously to absolutely everything at once, that conscious attention is limited, selective, focused, and constructed according to our preexisting, if ill-formed, expectations?[47] If we cannot really attend to the chaotic whole, why might it nonetheless be important to be in a total context to comprehend its routines? A partial answer is provided by recent experiments which distinguish between figure and ground, that ten percent which is consciously attended to and is reportable and that ninety percent which is unconsciously processed and only indirectly measurable. Experimental data fully supports the conclusion that multisource, background information is extensively and simultaneously encoded outside the spotlight of conscious awareness and that this information, simplified through *subconscious parallel processing*, is highly influential in subsequent performance.[48] This subconscious awareness explains how we can

47. *See* discussion of perceptual expectancies *infra* notes 91, 93, 94. Zaner and other phenomenologists refer to the subjective experience of purposeful expectancies as the figure/ground problem, or more precisely, the contexture (gestalt theme), context (thematic field), and margin (irrelevant to theme) problem. *See* ZANER, *supra* note 25, at 75–77.

Edelman emphasizes the survival values of selective attention, the directional component of cognition. Attention is highly selective, can focus on one or two items only, and obliterates what is temporarily irrelevant. EDELMAN, *supra* note 16, at 141. That focus, however, permits one to quickly choose behaviors which may have immediate survival value. Accordingly, the facility of cognitive attention developed under "evolutionary pressure on an animal to select one out of a set of appropriate actions," more than one action ordinarily being impossible. *Id.*

48. "The evidence is overwhelming that stimuli displayed to subjects below the level of conscious awareness can alter bodily activity, mood, attitudes, fantasies, and overt behavior." Joseph M. Masling, *What Does It All Mean, in* PERCEPTION WITHOUT AWARENESS: COGNITIVE, CLINICAL, AND SOCIAL PERSPECTIVES 259, 263 (Robert F. Bornstein & Thane S. Pittman eds., 1992) (citations omitted). *See* Sallie E. Gordon, *Implications of Cognition Theory for Knowledge Acquisition, in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI, 99, 102–04, 106–08 (Robert Hoffman ed., 1992); Anthony J. Marcel, *Conscious and Unconscious Perception: Experiments On Visual Masking and Word Recognition*, 15 COGNITIVE PSYCHOL. 197, 232 (1983) (focusing on visual perception studies). For a discussion of a simplification-by-integration theory relying on simultaneous, subconscious processing of multiple parallel subprocesses, see Iran-Nejad, *supra* note 5.

There are currently three theories of how perception without awareness may influence subsequent judgment and behavior: (1) perception without awareness increases the perceptual fluency or familiarity of recently perceived phenomenon; (2) perception without awareness increases affective responses; and (3) perception without awareness energizes or primes preexisting items or knowledge structures. Thane S. Pittman, *Perception Without Awareness in the Stream of Behavior: Processes that Produce and Limit Nonconscious Biasing Effects, in* PERCEPTION WITHOUT AWARENESS: COGNITIVE, CLINICAL, AND SOCIAL PERSPECTIVES 277, 278 (Robert F. Bornstein & Thane S. Pittman eds., 1992).

Perhaps, the most radical form of unconscious learning proposed by recent cognitive theory is that suggested by connectionist theory. The strategy of connectivism "is to build a cognitive system not by starting with symbols and rules but by starting with simple components that would dynamically connect to each other in dense ways." VARELA ET AL., *supra* note 16, at 88. These "connections," which create global coherences out of local operations, are described in the modern literature as "emergent or global properties, network dynamics, nonlinear networks, complex systems, or even synergetics." *Id.* "Connectionist theories provide, with amazing grace, working models for a number of interesting cognitive capacities, such as rapid recognition, associative memory, and categorical generalization." *Id.* at 92. For example, "the basic mechanism of recognition of a visual object or a visual attribute could be said to be the emergence of a global state among *resonating neuronal ensembles*." *Id.* at 96.

Relying on massive parallel processing theory, the connectionists propose that repeated experience of a system with implicit "rules," e.g., the irregular and regular verb tenses in English, becomes distributed across the neural network in a matrix of strengthened connections. Even though no rules, algorithms, or heuristics of any kind were ever encoded, even though no "rules" are learned, and even though there are no localized abstractions anywhere in the system, the system nonetheless performs accurately in producing correct verb forms. *See* JOHN BAER, CREATIVITY AND DIVERGENT THINKING: A TASK-SPECIFIC APPROACH 96–97 (1993)

walk on a crowded sidewalk while talking with a friend and looking in shop windows without bumping into every other person in the process.

Not only do we subconsciously attend to the ground of the total context, over time we also can incorporate its regularities and routines again without conscious awareness. In walking on our crowded sidewalk, we not only process the immediate ground of our fellow pedestrians; we also "know" intuitively the unstated patterns and customs of sidewalk sharing which prevent gridlock and mayhem. What we know in our walking, scientists discover in the laboratory. "An increasing number of studies have demonstrated that people are able to learn complex rules or stimulus constraints in perceptual-motor tasks without being aware of the rules or constraints."[49] Moreover, not only can people learn implicitly, but such learning may be more "efficient." For example, Reber and his associates have found that implicit learners, people who are not trying to learn a complex system of grammatical rules, are learning as well, and in some instances better, than explicit learners, people who are "trying" to learn the rules. Rather than consciously formulating and testing hypotheses, implicit learners absorb the cognitive performance features of a complex system without realizing it.[50]

(reporting research findings by Rumelhardt & McClelland).

For a more extended discussion of connectionist and parallel processing theory and its revolutionary potential in understanding human cognition, see PHILOSOPHY AND CONNECTIONIST THEORY (W. Ramsey et al. eds., 1991); VARELA ET AL., *supra*, at 85–103 (discussing emergence and self-organization in connectionist cognition). For an extended discussion of a neural connectionist theory rely on selection mechanisms, see EDELMAN, *supra* note 16, at 81–110. For a lay person's discussion of the new science of Complexity which also discusses self-organization, emergence, creativity at the edge of chaos, and related concepts, see ROGER LEWIN, COMPLEXITY: LIFE AT THE EDGE OF CHAOS (1992); JOHN BRIGGS & F. DAVID PEAT, TURBULENT MIRROR: AN ILLUSTRATED GUIDE TO CHAOS THEORY AND THE SCIENCE OF WHOLENESS (1989).

49. Gordon, *supra* note 48, at 104.

50. *See, e.g.*, Arthur S. Reber, *Implicit Learning and Tacit Knowledge*, 118 J. EXPERIMENTAL PSYCHOL. GENERAL 219 (1989) (implicit knowledge is optimally learned independently of conscious effort to learn); Arthur S. Reber et al., *On the Relationship Between Implicit and Explicit Modes in the Learning of a Complex Rule Structure*, 6 J. EXPERIMENTAL PSYCHOL.: HUMAN LEARNING AND MEMORY 492 (1980) (finding that structured arrays aided implicit learning and that general information about the structure of the field was also helpful); Arthur S. Reber & Selma Lewis, *Implicit Learning: An Analysis of the Form and Structure of a Body of Tacit Knowledge*, 5 COGNITION 333, 354–59 (1977) (positing differentiation processes and global apprehension of structure). Although Reber's experiments to date have focused largely on learning artificial grammars, they are equally applicable elsewhere. *See*, Iran-Nejad, *supra* note 5; ARNOLD GLASS & KEITH J. HOLYOAK, COGNITION 261–303 (2d ed. 1986). "Not only does learning occur when stimuli are presented below the level of conscious awareness but some types of performance are actually enhanced by subliminal exposure." Masling, *supra* note 48, at 263. For example, in comparing the ability to memorize words associated with cheese, subjects exposed to subliminal message had better memory than those where the word cheese was displayed supraliminally or not at all. *Id.* Findings like these might support a conclusion "that having an object clearly in conscious awareness reduces the range of associations ...." *Id.* at 264.

Not only may "rules" be learned subconsciously and perhaps more efficiently that way, but subconscious processes are also highly creative. "Certainly the parallel nature of subconscious, automatic processing is a potent force in creativity and in one's ability to come up with solutions to problems that prolonged conscious thinking, with its characteristic inhibition of nonroutine pathways, is unable to crack." John A. Bargh, *Does Subliminality Matter to Social Psychology? Awareness of the Stimulus versus Awareness of Its Influence*, *in* PERCEPTION WITHOUT AWARENESS: COGNITIVE, CLINICAL, AND SOCIAL PERSPECTIVES 236, 237–38 (Robert F. Bornstein & Thane S. Pittman eds., 1992).

A theory of implicit knowledge is similar to Schon's theory of tacit knowledge which

c. Eventfulness: Fluidity, Dilemmas, and Narrative

The third feature of contextualism, its central metaphor, is cognitive focus on the historical *event*[51]—people eat a meal, an event; they go on a walk, an event; they play a game, teach a class, or park a car, all dynamically composed events. Even more accurately, people focus on the *fluidity* of events.[52] In this temporal unfolding of events, a human weaves or spins her life, engaging the regularities and anomalies of existence.[53]

> In following the extensions of its metaphor, the historical event, it [contextualism] orients us to an alternative way of seeing the world; for example, rather than stripping context away to isolate causal relations between artificial variables, it reconstructs context by emphasizing interdependent relationships and meanings .... An event has temporal and spatial spread and occurs in a context that has overall quality that gives the event cohesiveness. A particular event is usually nested in other events ... or it may fold into another event.[54]

As an example of nested events, packing a suitcase folds into a taxi ride to the airport which merges into a plane ride which, in turn, become one bookend to a vacation in Paris. Thus, an essential aspect of contextualist cognition is apprehension of and participation in fluid events under conditions of temporal flux. A lifetime of human activities consists of the flow of such significant events and performances within a broad, interconnected array of loosely bounded social-practice contexts. As our reservoir of experience, especially social experience, increases, what we compose as an event attains more and more temporal spread. Thus, a seasoned lawyer can experience a three-year case as a more comprehensive event composed of many subsidiary events.

Despite all the regularities of our physical and social environments, we are often confronted with change, surprise, variability, destabilization, and existential contingency, what might be called *dilemmas*. These dilemmas are the troubling incongruities, the novel and surprising problematics,[55] of on-going

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practitioners and even novices draw on whenever they are approaching novel problems. Tacit knowledge is demonstrated as "knowing-in-action" which we reveal "by our spontaneous, skillful" performances. SCHON, *supra* note 2, at 25. The tacit knowledge of everyday life is augmented for professionals by the research-based theory and technique of the domain resulting in a more constrained and complex "knowing-in-*practice*." *Id.* at 33.

51. "For the contextualist, experience consists of total events that are rich in features." GILLESPIE, *supra* note 16, at 18. The holism of primary consciousness composes otherwise inchoate experience into the coherence of an "event," what Edelman also calls a "scene." EDELMAN, *supra* note 16, at 119–20.

52. "In actual experience, there is never any ... isolated singular object or event; *an* object or event is always a special part, phase, or aspect, of an environing experienced world—a situation." GILLESPIE, *supra* note 16, at 82 (citing JOHN DEWEY, LOGIC: THE THEORY OF INQUIRY 67 (1938)). "[N]otions of time and change are central to any serious considerations of context." Siegel & Cohen, *supra* note 15, at 312.

53. Frequent metaphors for contextualism include a weaver weaving the strands and textures of situated experience and a spider spinning a web from within itself. "[B]ut the metaphor [of weaving] would have to be taken in the sense of a tapestry that weaves itself because in contextualism the weaver and the woven are inseparable." GILLESPIE, *supra* note 16, at 52. Likewise, as a spider spinning its web, "the [contextualized] self creates out of his or her own body the webs of meanings and relationships, even as a person works with materials from the physical and social worlds to create that home." *Id.*

54. *Id.* at 27.

55. In the face of novelty, surprise, or change, we are confronted with "the drama of a problematic situation. We become more consciously aware of what we perceive, and we are likely to remember past problematic situations, actions we may have undertaken, and the process

events. Fortunately for our survival, our cognition is attuned to and aroused by these destabilizations—once "alerted," we can reflect, reinterpret, imagine, and learn.[56] We can transform our understandings and our subjective world even while constrained by our cognitive inheritances. Thus, the apprehension of change is the womb of learning—it is in addressing destabilization, incongruities, surprises, and dilemmas that we learn to reconstruct (construct in a new way) our understandings. It is in the situational confrontation with dilemmas that earlier coherences destabilize and new ones coalesce.

In the contextualist view, one of the principal cognitive mechanisms for making human events meaningful or coherent is *narrative*.[57] Although sequentiality of human events is narrative's central feature,[58] narrative's most important function is "that it specializes in the forging of links between the exceptional and the ordinary."[59] These links consist both of the inherent dramatism of Scene, Actor, Action, Instruments, and Trouble[60] *and* the articulated reasons or explanations, to ourselves and others, which help us negotiate the Troubling chasm of disequilibration between the expected and the unexpected. Particularly when telling our own story, we try to make our own life explainable and thus potentially understandable. In the process of story telling, we mediate the canonical,[61] the socially conventional, and the unexpected variation in the flow of events which needs to be related in some socially coherent manner to the canonical. Recognizing this, Bruner has gone so far as to pose a "rule": "The function of the story is to find an intentional state that mitigates or at least makes comprehensible a deviation from a canonical cultural pattern."[62]

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of our former inquiry itself." *Id.* at 149. The processes and activities of perception are geared to the detection of the "affordances" and disequilibrations of context. "[A]ffordances are those relative invariants in the environment that suggest action, 'offerings that can be perceived and used by observers [e.g., walkable surfaces].'" *Id.* at 84 (citation omitted). The organism-environment transactions are full of surprises, uncertainty, and imbalances as well as expected affordances; Dewey calls these ever-present contingencies, imbalances, and indeterminacies "disequilibrations." "'Indeed, living may be regarded as a continual rhythm of disequilibrations and recoveries of equilibrium .... The state of disturbed equilibration constitutes *need*. The movement towards its restoration is search and exploration.'" *Id.* at 94 (quoting DEWEY, LOGIC: THE THEORY OF INQUIRY, *supra* note 52, at 27).

56. "A need for greater understanding is initially aroused by perception of incongruous events ...." Butterworth, *supra* note 24, at 10. "[W]hen intuitive performance leads to surprises, pleasing and promising or unwanted, we may respond by reflecting-in-action .... In such processes, reflection tends to focus interactively on the outcomes of action, the action itself, and the intuitive knowing implicit in the action." SCHON, *supra* note 5, at 56.

57. GILLESPIE, *supra* note 16, at 24–25, 145–49, 182–84; BRUNER, *supra* note 16, at 56 ("The typical form of framing experience (and our memory of it) is in the narrative form ...."). Narrative is a particularly human invention which both symbolizes and enacts our cognitive focus on "humanized" events.

58. "Perhaps its [narrative's] central property is its inherent sequentiality: a narrative is composed of a unique sequence of events, mental states, happenings involving human beings as characters or actors." BRUNER, *supra* note 16, at 43.

59. *Id.* at 47. "Folk psychology is invested in canonicality. It focuses upon the expectable and/or the usual in the human condition. It endows these with legitimacy or authority. Yet it has powerful means that are purpose-built for rendering the exceptional and the unusual into comprehensible form." *Id.*

60. *Id.* at 50. Trouble is "an imbalance between any of the five elements of the pentad ...." *Id.* It is the folk psychology equivalent of Dewey's disequilibrations.

61. The canon of law is the subject of a recent series of articles in the Journal of Legal Education. *Do We Have a Legal Canon*, 43 J. LEGAL EDUC. 1 (1993).

62. BRUNER, *supra* note 16, at 49–50 (emphasis deleted).

d. Functionality and authenticity

Two additional features of contextualism especially intriguing for contextualist learning theory are functionality and authenticity. Any focus on human events is largely a focus on *functional activities*, both those of basic survival and those of social practice. Although there are clearly aesthetic and interpersonal events which captivate our sensibilities, by the time we are adults most humans are situationally and functionally engaged in socially constructed roles and performances. Accordingly, contextualist learning theory proposes engaging the learner in the functional activities of a social-practice context in order to learn its routines and constraints.[63] To learn physics, you work on physics problems preferably with a physicist; to learn cooking, you spend time in the kitchen making meals;[64] to learn legal argumentation, you make functional arguments in a relevant legal context.[65]

In a series of experiments focusing on the importance of functionality, two researchers contrasted the diagnostic skills of more active system controllers versus more passive system monitors. System controllers, as the name suggests, operate system dynamics, e.g., they attend to an air traffic controller screen and direct air traffic, while monitoring for system faults at the same time. The system monitors, on the other hand, only watch for faults; they have no obligation to make the system perform its intended tasks. The researchers found that controllers detect faults much more accurately and with greater sophistication than monitors.[66] In addition, system controllers detected subtle clues of system malfunction undetectable by monitors; for example, "experienced nuclear power plant operators can detect certain vibrations in the floor of the control room that indicate trouble, whereas the inexperienced

63. John S. Brown et al., *Situated Cognition and the Culture of Learning*, EDUC. RESEARCHER, Jan.-Feb. 1989, at 32 (urging "cognitive apprenticeships," embedded learning in an authentic activity that makes use of social and physical context); *see* JEAN LAVE, COGNITION IN PRACTICE: MIND, MATHEMATICS AND CULTURE IN EVERYDAY LIFE (1988) (emphasizing learning through participation in social practice contexts). A learner must "perform a particular operation to become aware of its function in the situation—performing a technical operation ... in order to learn its meaning." SCHON, *supra* note 2, at 106. David Perkins uses the concept of "understanding performances" as the key to demonstrating and developing cognitive enablement. PERKINS, *supra* note 44, at 77–79.

64. *See* Lave, *supra* note 5, at 86–87 (discussing creating math apprenticeships in a mathematical culture); Giyoo Hatano & Kayoto Inagaki, *Desituating Cognition Through the Construction of Conceptual Knowledge*, *in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 115, 116–17 (Paul Light & George Butterworth eds., 1993) (discussing cooking).

65. James F. Stratman is studying what difference it makes to be given a functional instruction versus an afunctional instruction in reading legal text. According to preliminary results, even novices display more varied and more sophisticated reading strategies when given a more authentic and more functional task, "to plan and write a legal argument," than when they are given a less authentic (more academic) task, "to prepare to explain cases to peers." James F. Stratman, *Presentation Notes for AALS Section on Legal Research and Writing 1993 Conference—Exploring Headwaters of the Legal Writing Process: What Real-Time Studies of Legal Reading Might Tell Us* (July 1993) (on file with the author).

66. Robert M. Schumacher & Mary P. Czerwinski, *Mental Models and the Acquisition of Expert Knowledge*, *in* THE PSYCHOLOGY OF EXPERTISE 61, 69 (reporting research results of Wickers and Kessel). Edelman has explored the biological and evolutionary basis of a cognitive preference for function over passivity. In a complex and dangerous environment, animals are dependent on action for survival. Accordingly, cognition is wired for action as much as it is for perception. Perception is intensified by the call to action just as much as action is catalyzed by perception. EDELMAN, *supra* note 16, at 141–42.

operator [or monitor] is unable to use this clue."[67] Accordingly, increased functionality leads to increased cognitive efficacy.

The activities and performances of a particular social context are not only functional; they are ordinarily *authentic*, that is, meaningful within the shared understandings of mutual participants. There can of course be inauthentic or purposeless activities, e.g., mentally filling out fictional tax forms while swimming laps. But, for the most part, contextualized events by their very nature are authentic. This "ecological validity or authenticity, is an inherent aspect of the reasoning process."[68] In contrast, when structuring learning environments outside of a real, relevant context, a central difficulty is to pose authentic problems which capture the learner's intentions.

Proving this point, one study showed that Brazilian children who were street vendors made mathematical calculations and class inclusions much more effectively at their market stalls than in their classrooms; they had quite serviceable understandings of practical logic and mathematics and quite poor understandings of equivalent, formal methods.[69] The explanations had to do with the differences in context and functional authenticity between the classroom and the marketplace. School testing used word problems which were "formal and bereft of concrete meaning."[70] The vendor setting, in contrast, was fully authentic; families depended on income from their children for survival. "The study shows that children tended to approach the particular logical [class-membership] problem in a logical way when the problem was part of the every day activity of selling goods for money."[71]

e. Cognitive pluralism and its constraints

The final important feature of contextualism suggests that situational meaning is *pluralistic*, not merely for different individuals but also for a particular individual. Context does not generate *a* meaning or *a* practice-response; it generates *many* variable meanings and *many* possible courses of action, some more plausible and coherent to the individual than others.[72] Bruner takes this pluralism—"our dazzling intellectual capacity to *envision*

67. Schumacher & Czerwinski, *supra* note 66, at 69.

68. Butterworth, *supra* note 24, at 10. *See* Lave, *supra* note 5, at 80–81; Hatano & Inagaki, *supra* note 64 (concluding that children construct a better conceptual understanding of fish when they have them authentically as pets than when they merely feed them as part of an artificial school routine). For additional educational research recommending that student learn best in situations that engage students authentically as experts learning new information in the context of meaningful activity, see Cognition and Technology Group at Vanderbilt, *Anchored Instruction and Its Relationship to Situated Cognition*, EDUC. RESEARCHER, Aug.-Sept. 1990, at 2, 3, 6–8.

69. Antonio Roazzi & Peter Bryant, *Social Class, Context and Cognitive Development*, *in* CONTEXT AND COGNITION: WAYS OF LEARNING AND KNOWING 14, 25 (Paul Light & George Butterworth eds., 1993).

70. *Id.* at 15.

71. *Id.* at 20.

72. GILLESPIE, *supra* note 16, at 59. The extent to which cognitive pluralism is a direct result of massive, subconscious parallel processing has not yet been extensively described though it has some inherent appeal. *See* discussion *supra* note 48; EDELMAN, *supra* note 16, at 169–71 (for a partial discussion). If cognitive subsystems come up with competing coherences about a situation through unconscious "self-regulation" and if conscious cognition can become aware of these multiple coherences, then the conscious decision-maker is left with the necessity of choice based on his or her own commitments, values, and standards of plausibility. The default position is that the subconscious wins.

alternatives"—as one of only two "universals" of human cognition.[73] In this view, the physical and social ingredients of situation and eventfulness are not monolithic or unidimensional. More to the point, context does not compel a particular interpretative response because it is not an objective phenomenon—the call of context, the voice of situation is not reified; rather, it is interpretable.[74] In making such an interpretation, a situated human hears many voices about the setting and about herself. Thereafter, she retains significant interpretative freedom in selecting among messages and in constructing the meanings she gives to those messages. Despite that freedom, she also experiences constraints through her embodiment, her enculturation, and her most durable commitments.

The symbolic systems, social practices, canonical conventions, and resulting interpretative loom of a socially situated human consist of many competing, overlapping, and intertwining threads;[75] the "polyglot nature of society" results in *multiple influences* on a person's understanding.[76] Not only do different cultures have different conventional understandings,[77] but each individual is subject to the gravitational sway of multiple cultural and subcultural systems.[78] Moreover, even though one's direct cultural endowments are

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73. BRUNER, *supra* note 16, at 110. The first universal is "reflexivity," our ability to change the past and the present through our conscious cognition. *Id.* at 109–10. Zaner uses the analogous concept of "possibilizing" as the ability to imagine alternatives. ZANER, *supra* note 25, at 175–80. "Human individuals, created through a most improbable sequence of events and severely constrained by their history and morphology, can still indulge in extraordinary imaginative freedom.... They may imagine plans, propose hopes for the future, and causally affect world events by choice." EDELMAN, *supra* note 16, at 170.

74. *See, e.g.*, JOHNSON, *supra* note 16, at xix–xxxviii, 173–212; LAKOFF, *supra* note 16, at 157–304; ZANER, *supra* note 25, at 140–43.

75. The four dimensional tapestry of an encultured life consists of many threads, some stronger, thicker, and longer than others—threads from the dominant economic/political culture; threads from the subcultures of ethnicity, class, gender, sexual orientation, age, and physical endowment; threads from region, community, and neighborhood; threads from family history, partnership and parenthood; threads from occupation, hobby, and recreations.

An alternative metaphor of multivariant influences is that of nested arrays. Contextualists view the contextual environment "as multileveled and nested aggregates of variables (for example, culture, community, school, teacher, family, parent, sibling), rather than the highly specified and hence restricted stimulus conditions found in certain behavioral models." Arthur C. Houts, *The Contextualist Turn in Empirical Social Science: Epistemological Issues, Methodological Implications, and Adjusted Expectations*, *in* CONTEXT AND DEVELOPMENT 25, 43 (Robert Cohen & Alexander W. Siegel eds., 1991); *see* Lerner & Tubman, *supra* note 26, at 194–99.

76. Goodnow & Wharton, *supra* note 41, at 162. "[C]ontexts can coexist in such a way that individuals may participate simultaneously in several culturally constrained modes of knowing." Butterworth, *supra* note 24, at 7. Moreover, "a culture at any one time contains both 'dominant' and 'recessive' views on most topics." Goodnow & Wharton, *supra* note 41, at 162. "Multiple voices within the individual and within the community are in a constant struggle for legitimacy." Gary L. Anderson, *Critical Ethnography in Education: Origins, Current Status, and New Directions*, 59 REV. EDUC. RES. 249, 261 (1989).

77. "Variations in cultural context may give different meanings to otherwise identical behaviors, through the historical experience of the different cultural groups.... [S]ocial contexts are differently structured in different societies." Butterworth, *supra* note 24, at 6. *See* ANDREW SAID, CULTURE AND IMPERIALISM (1992) (the culture of Western imperialism is significantly different from the culture of people colonized); EVITAR ZERUBAVEL, THE FINE LINE: MAKING DISTINCTIONS IN EVERYDAY LIFE 61–80 (1991).

78. The intersectionality movement in critical legal studies, critical race theory, and critical feminist theory reflects the multiple sources of identity and commitment. *See, e.g.*, Joan C. Williams, *Dissolving the Sameness/Difference Debate: A Post-Modern Path Beyond Essentialism in Feminist and Critical Race Theory*, 1991 DUKE L.J. 296, 299; WILLIAMS, *supra*

traced to a limited number of cultures and subcultures, social interaction and dialogue with others enable us to "see and hear" the perspectives of people from diverse cultures or with different formative life experiences expanding the number of possible interpretations we might make.[79] Thus, a pluralistic view of context evidences "a tolerance for ambiguity and contradiction," and proposes "processes such as the selective appropriation of culturally available ideas, adopting some as one's own and rejecting others."[80]

Each of the selected influences is, in turn, interpreted differentially, at least somewhat idiosyncratically and "possessively,"[81] based on the variability and heterogeneity of personal history and life experience—we have *interpretative freedom.*

> No two persons have the same history or have the same dispositions. Some are more credulous than others, more perceptive, more doubting, more impulsive; some are better versed in history, some in physics, some in psychology.... Much more importantly, each has a characteristic way of reasoning that represents an interpretive orientation to the world, a way of making sense of the phenomena of experience by giving order to the many domains of knowledge and opinion in which she or he participates.[82]

There are too many variables of perspective, role, identity, and personal history to suggest a highly constrained, let alone determinate, interpretation of context. At most, context calls for an ordering, and that ordering is most often obtained through the application of personal preferences and vantage point as well as through the more regular, but contingent, conventions of the relevant community. Even then, an individual's characteristic approach may change over time as she experiences her life and is exposed to the convincing strategies of others. If post-modernists have taught nothing else, they have taught us to appreciate interpretative freedom in eloquent context as well as in semiotics.[83]

A corollary of interpretative freedom is *interpretative dissonance*; even after our selection of sources and our idiosyncratic interpretations, our resultant understandings are not necessarily unitary and consistent. Despite our yearning for gestalt coherence, we are quite capable of holding multiple,

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note 22; Kimberly Crenshaw, *Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color,* 43 STAN. L. REV. 1241 (1991).

79. "A contextualist analysis recognizes the importance of intersubjective meanings and shared and partially shared frames of reference such as that given by gender, class, or educational background. Dialogues with others about projects in the world open up possibilities and lead to new ways of thinking." GILLESPIE, *supra* note 16, at 53–54.

80. Goodnow & Wharton, *supra* note 41, at 158.

81. "[S]ome beliefs are 'like possessions.' They have become part of one's sense of self and sense of place, cherished and held dear in spite of changes in the world's fashions and, if ever abandoned, set aside only with reluctance and a sense of lost comfort." *Id.* at 163; *see* EDELMAN, *supra* note 16, at 170–71.

82. Thomas Morawetz, *Understanding Disagreement, the Root Issue of Jurisprudence: Applying Wittgenstein to Positivism, Critical Theory, and Judging,* 141 PENN. L. REV. 371, 398–99, (1992). Even this characteristic approach is not immutable, however strongly preferred it may be at a particular time. "A given person will solve different problems in different ways—with evidence drawn from whatever realms of experience seem appropriate." *Id.* at 403. Schon's concept of the art of improvisation suggests the evolution of variability and individual approaches. SCHON, *supra* note 2, at 13.

83. *See* Phyllis Goldfarb, *Beyond Cut Flowers: Developing a Clinical Perspective on Critical Legal Theory,* 43 HASTINGS L.J. 717, 745 (1992) ("Post-modernists find what little commonality [of meaning] remains in difference, discontinuity, and disjuncture"); Pierre Schlag, *Missing Pieces: A Cognitive Approach to Law,* 67 TEX. L. REV. 1195, 1241 (1989).

conflicting ideas at the same time.[84] For example, in their study of parents' ideas about linking allowances and work, Goodnow and Wharton found that most parents hold multiple views arranged in some hierarchy and in response to differences between jobs and between children. Thus, instead of simply thinking that children earn their allowances or that children are entitled to share in family wealth or that children should contribute to homemaking, parents can have a patchwork of ideas where some jobs are for pay and some functions are necessary to demonstrate familial good will and some children need spending money and Sally needs to learn the value of a dollar, but Beth is a real team player.[85]

It is possible to overemphasize the pluralism of cognition and to disregard the domestication of our interpretative freedom through three constraints: (1) the embodiment of our experience;[86] (2) the enculturation of our experience, including, where relevant, the historical canon and conventional methods of a social practice domain;[87] and (3) our intentional systems—our hopes,

84. Using available cultural constructs, we frequently harbor "more than one idea about an event with relatively little concern for the way the several ideas hang together." Goodnow & Wharton, *supra* note 41, at 164. *See* THE MULTIPLE SELF: STUDIES IN RATIONALITY AND SOCIAL CHANGE (Jon Elster ed., 1986) (exploring the idea of relatively autonomous sub-individual selves and the dissonance of the conflicting interests and goals); MICHAEL BILLIG ET AL., IDEOLOGICAL DILEMMAS (1988) (finding that individuals experience inner conflict in their argumentative thinking—for each belief or commitment held, i.e., racial inferiority, there is a strong counter-commitment or belief, that is, prejudice is wrong); MICHAEL BILLIG, IDEOLOGY AND OPINION: STUDIES IN RHETORICAL PSYCHOLOGY 17–21 (1991) (common sense evidences differing, frequently oppositional conceptions of the world). "To deliberate upon an issue is to argue with oneself, even to persuade oneself." *Id.* at 17.

85. *See* Goodnow & Wharton, *supra* note 41, at 169–72.

86. Mark Johnson, George Lakoff, and Richard Zaner make particular use of the functional constraints on cognitive which flow from our embodiment. Our up-down orientation as erect animals, our front-back orientation as forward-looking beings, our source-path-goal orientation as seekers of nourishment and shelter, our in-out orientation as encapsulated creatures with outward-directed sensing systems and inward-directed self-consciousness are all testaments to the irreducible centrality of our embodiment. *See* JOHNSON, *supra* note 16; LAKOFF, *supra* note 16; ZANER, *supra* note 25. This constraint is most often subconscious and subpropositional.

87. *See infra* notes 122–25 and accompanying text, describing the pervasiveness of domain-specific conventions. These domain conventions and other social constraints are often learned implicitly and thus are invisible to awareness.

Even within an established social practice, however, there is a risk of overestimating the homogeneity of expertise and its conventions. Stephen T. Peverly, *Problems with Knowledge-Based Explanations of Memory and Development*, 61 REV. EDUC. RES. 71, 77 (1991) (reporting "strong interindividual differences among experts"). "In some professions, awareness of uncertainty, complexity, instability, uniqueness, and value conflict has led to the emergence of professional pluralism. Competing views of professional practice—competing images of the professional role, the central values of the profession, the relevant knowledge and skills—have come into good currency." SCHON, *supra* note 5, at 17. Rather than suggesting that expert legal thinking is monolithic, for example, it would be better to recognize the "family resemblances" in the diverse deliberate practices of lawyers. Morawetz, *supra* note 82, at 398; *see* LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS (2d ed. 1967) (family resemblances is, of course, Wittgenstein's construct). The most discernible feature of expert legal reasoning, is its variability, the idiosyncratic and changeable approach of individuals within a larger metamorphosing community of lawyers, judges, and scholars. Thus, change and variability are more constant than constancy, even though there are conventional constraints on arguments, evidence, and solutions that count. Despite the variability of deliberative practices among individuals, "participants [in a practice or interpretative community] recognize and understand each others' argumentative strategies. They share a sense of what reasons are relevant to the common discourse." Morawetz, *supra* note 82; *see* Williams, *supra* note 23, at 10; Mitchell, *supra* note 23, at 291–92.

desires, values, and aspirations, what we might fairly call our commitments, our way of life.[88] Thus, despite its pluralism and plasticity, our cognitive search for meaningfulness, coherence, and understanding is constrained in such a way that rampant relativistic subjectivity is improbable at best.

f. Contextualist Perception, Memory, and Categorization—Implications

The enactive and situational focus on holistic events, subconscious simultaneity, functionality, and cognitive pluralism have important implications for contextualist theories of perception, memory, and categorization and thus ultimately for ecological learning. In discussing these features of cognition, however, contextualists emphasize that the distinctions between perception, memory, and categorization are of convenience only and that the boundaries between them are indistinct because of the congruence and simultaneity of their functions in lived experience. Nonetheless, these convenient distinctions help demonstrate how people *construct* and *reconstruct* their patterned coherences—perception, memory, and categories—primarily around events, rather than through abstractions, as resources for world-making in their present engagements.[89] Yet, none of our perceptions, memories, and categories, however well

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Nonetheless, for the expert, and increasingly for the novice, the coherence supplied by similar context and practice constrains the absolute number of deliberative practices and discourse strategies a participant can reasonably expect to be validated and credited. Even this shared sense of relevancy, however, evolves over time as the fashions of argumentation and understanding change for contextual, historical, political, or institutional reasons. Morawetz, *supra* note 82, at 402. In other words, deliberative practice of a community, like the deliberative practices of an individual, tolerate disparate approaches at a particular time and evolving approaches over time. *See* Winter, *Uses of Theory*, *supra* note 23, at 670–76.

88. *See* BRUNER, *supra* note 16, at 39. "[C]ommitment is not just a preference. It is a belief, an 'ontology' ... that a certain mode of life merits or deserves support, even though we find it difficult to live up to it." *Id.* at 22. These commitments are "communal and consequential in terms of our relations to a cultural community," meaning that they are not wholly idiosyncratic and "personal." *Id.* at 29. "They become incorporated in one's self-identity," meaning that radical rethinking and opportunistic reconfiguration are both equally improbable. *Id.*

"[H]umans-with-motives are inseparable criterial attributes or features of context." Siegel & Cohen, *supra* note 15, at 309; *see* Philip R. Costanzo, *Morals, Mothers, and Memories: The Social Context of Developing Social Cognition*, *in* CONTEXT AND DEVELOPMENT 91, 95 (Robert Cohen & Alexander W. Siegel eds., 1991) (emphasizing "the powerful role of social beliefs, values, and preferences as they bear upon contemporary social judgments"). Costanzo proposes that people are not only "naive scholars" who use more "rational" information-based heuristics to reach social judgments, but that they are also "naive moralists" who preferentially use their socialized moral values in prejudging social events that implicate those values. *Id.* at 100–11.

Cognitive dissonance is the psychological mechanism by which we reduce the interpretative incoherence in our lives; "When faced with inconsistent beliefs and attitudes, we engage in cognitive work to reduce the resulting dissonance." J. M. Balkin, *Understanding Legal Understanding: The Legal Subject and the Problem of Legal Coherence*, 103 YALE L.J. 105, 144 (1993). "[People] do this by selectively focusing on past experiences that support their beliefs and behaviors while downplaying or forgetting experiences that do not support them, by selectively focusing their attention on parts of current experience that support their beliefs and actions, or by selectively interpreting events to resolve ambiguities in favor of consistency." *Id.* at 145. Beliefs, commitments, and ideology which is more central to one's conception of Self are least likely to be changed or abandoned. *Id.*

89. *See* GILLESPIE, *supra* note 16.

> [R]ecall is not stereotypic. Under the influence of continually changing contexts, it changes, as the structure and dynamics of the neural populations involved in the original categorization also change. Recall involves the activation of some, but not necessarily all, of the previously facilitated portions of global mappings. It can result in a categorization response similar to a previous one, but at different times

formed in the past, will aid us in the present, unless we reconstruct them in the present, time and time again, as the malleable ingredients of phenomenal experience.

In contextualism, perception is oriented to the active apprehension[90] of biologically or socially coherent aggregates of information, what I have already described as events. Perception focuses expectantly on event recognition—the evolving mosaic of stability and change—so that the situated human can engage and function enactively in the temporarily indeterminate but ultimately meaningful activities of survival and community.[91] Memory too "fuses" around events,[92] operating at both ends of perception; first, and often unconsciously, to prefigure perceptual attention[93] and, second, to retain the residue of meaningful, transformative cognitive experience as a resource for present actions and future engagements. Memory, reconstructed on each occasion, is the messenger from the past, the interpretative aid for a coherent present, and the seer of the future. It is schematically instantiated in perceptual anticipation,[94]

> the elements contributing to that response are different, and in general they are likely to have been altered by ongoing behavior.

EDELMAN, *supra* note 16, at 102.

90. "[A]s active perceivers we do not simply receive information into our senses, but with our bodies explore our environments in ways that allow us to detect information skillfully." GILLESPIE, *supra* note 16, at 82–83; *see* VARELA ET AL., *supra* note 16, at 123; EDELMAN, *supra* note 16, at 141–43.

91. In perception, an "event" to be perceived is tied to a perceiver's functions, purposes, and methods; an event is a flexible, temporary structure of human functionality over a biologically or socially meaningful period of time. GILLESPIE, *supra* note 16, at 77. Humans are engaged in "'event perception'" and "'ecological optics,'" they focus on the temporal "flow" and environmental "changes" in "ecologically meaningful events." *Id.* at 78–79 (quoting J.J. GIBSON, THE ECOLOGICAL APPROACH TO VISUAL PERCEPTION (1979)). Thus, "[i]n lived experience, the goal of perception is hardly ever the apprehension of static, permanent objects; rather the goal is one of ecological relationship, in that the organism apprehends or perceives meaning *while acting*." *Id.* at 80 (emphasis added).

92. "Because ... [contextualists] find eventfulness central to cognition, they conceive of memory as narrative, embodied, and flexibly situated, and, to describe memory, they often turn to images of spreading and layering, such as horizons, landscapes, multiple mappings, textures, or sedimentation." *Id.* at 108 (emphases deleted). More recent ecological studies of memory emphasize the situational and enactive functionality of memory which crystallizes around the meaningful events and semantic episodes. For example, people are more likely to remember the content of meaningful, complex sentence stories than they are the simpler individual story bits presented during memory acquisition. John D. Bransford & Jeffrey J. Franks, *The Abstraction of Linguistic Ideas*, 2 COGNITIVE PSYCHOL. 331, 348–50 (1971). Likewise, people ordinarily synthesize slides into natural, whole events, e.g., a vacation at the beach. GILLESPIE, *supra* at 143–44 reporting a experiment by James J. Jenkins et al., *Apprehending Pictorial Events, in* EVENT COGNITION: AN ECOLOGICAL PERSPECTIVE 117, 129 (V. McCable & G. J. Balzano eds., 1986). For a further collection of ecologically valid memory studies, see MEMORY OBSERVED: REMEMBERING IN NATURAL CONTEXTS (Ulric Neisser ed., 1982).

Referring to these experiments, Gillespie notes "some type of integration of the individual items into holistic semantic ideas [has] occurred." GILLESPIE, *supra* note 16, at 138. Accordingly, the process of remembering is more than abstracting; remembering is "productive and generative" as well. *Id.* Indeed there is more coalescence or "fusion" than abstraction. "The contextualist category of fusion states that different strands and textures in the event merge together with regard to consecutiveness in time and space. What is remembered is ... the quality of the subjects' interaction with the stimulus material ...." *Id.* at 140. In the ongoing construction of memory, events fuse and re-fuse into meaningful coherences.

93. In contextualism, memory is "'a field of habitual meanings.'" GILLESPIE, *supra* note 16, at 142 (citation omitted); EDELMAN, *supra* note 16, at 111–23 (discussing the remembered present).

94.

> [I]n perception cognition and reality meet: schemata cannot operate apart from the

basic level categories,[95] prototypes,[96] gradated category memberships,[97] exemplars of practice,[98] functional experiential gestalts,[99] and scripts[100] which

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existential contingencies of the situation (the context). Thus, they explain anticipations by connecting past experience with the information available to be picked up. The perceiver continues to be aware of the flow of information in the total event, but anticipations guide and direct the search.

GILLESPIE, *supra* note 16, at 97; *see* EDELMAN, *supra* note 16, at 117–23.

95. Basic level categorization is central to the emerging contextualist theory.

> [B]asic level categories provide the cornerstone of a categorical taxonomy; that is, a system for arranging categories from specific or least inclusive to general or most inclusive levels (e.g., from river birch to birch to tree). The basic level corresponds to those phenomena in the middle of the taxonomy, the mid-sized facts of our experience. They frequently include the concrete objects of the world (such as chairs and horses) with which we interact at a bodily level.

GILLESPIE, *supra* note 16, at 167; *see* LAKOFF, *supra* note 16, at 31–57. In selecting their experiential prototypes, children prefer a basic level of "specificity" that "is commonplace, recognizable by depictable instances, relatively comfortable to see, feel and to operate upon, generic without being too general." GARDNER, *supra* note 16, at 65–66.

96. Gardner and other researchers have found a characteristic "prototype" strategy where youngsters [and adults] use a "splendid instance" as their mental image or schemata of a category. GARDNER, *supra* note 16, at 65. Other researchers distinguish between a focal instance strategy, where actual experienced exemplars are employed, and the use of prototypes which are considered to be an inductive abstract from multiple experienced instances. *See* GLASS & HOLYOAK, *supra* note 50, at 164–66. Lakoff, for example, emphasizes that prototypes, or in his words, idealized cognitive models, are an *idealized* version of an experiential contextual gestalt. LAKOFF, *supra* note 16, at 68–76.

97. Categories are ordinarily "clustered" or "radial" rather than definitional. LAKOFF, *supra* note 16, at 74–76, 79–90. Most learners seem to learn three characteristics of a category: "(1) its central tendency; (2) the dimensions along which its members differ; and (3) the degree of variability among the category members." GLASS & HOLYOAK, *supra* note 50, at 170.

There are clear instances which fit easily within a prototype category and there are those graded, "gray" examples that fit less and less well. The gradated structure of categories refers to the "'continuum of category representativeness, beginning with the most typical members of a category and continuing through its atypical members to those nonmembers least similar to category members.'" GILLESPIE, *supra* note 16, at 176. The gradated structuring is, however, highly unstable; the molten forces of context, purpose, and function change, and the gradient is thereby disrupted, rearranged, or redone. *See* Lawrence Barsalou, *The Instability of Graded Structure: Implications for the Nature of Concepts*, *in* CONCEPTS AND CONCEPTUAL DEVELOPMENT: ECOLOGICAL AND INTELLECTUAL FACTORS IN CATEGORIZATION 101 (Ulric Neisser ed., 1987).

> To the extent that a particular instance seems relatively close to the prototype on a reasonable number of dimensions or in overall appearance, we are likely to recognize it as a member of that category and to do so with rapidity and confidence, but should the deviation approve too extreme on too many dimensions, should the instance appear too 'peripheral,' we become loath to make that classification.

GARDNER, *supra* note 16, at 65.

98. The theory of basic level categories can also be applied to the study of events. People describe the meaningful events of their life rather than the constituent parts or highly abstracted generalizations, e.g., people describe brushing their teeth rather than squeezing the toothpaste or engaging in a grooming ritual. *See* GILLESPIE, *supra* note 16, at 175. Thomas Kuhn refers to engaging, and therefore memorable, basic–level practice experiences as exemplars. These exemplars are concrete problem solutions, which are the basic level categories of expert eventfulness and which are accepted by the community as standard examples. They are the templates against which future problematic experiences are compared and contrasted. Thomas S. Kuhn, *Second Thoughts on Paradigms*, *in* THE STRUCTURE OF SCIENTIFIC THEORIES 459, 463, 471–77 (F. Supp. ed., 1974). Practice exemplars are stored in narrative or script form, the form most representative of eventfulness. The scripted clarity of exemplars is one of the reasons people can learn from the practice of others; people can engage these narrative experiences vicariously and thus memorably. *See* BRUNER, *supra* note 16, at 56–58; Lee Brooks, *Decentralized Control of Categorization: The Role of Prior Processing Episodes*, *in* CONCEPTS

temporarily and provisionally[101] encode our embodied, encultured experience. These same flexible, "fuzzy" schemas[102] that are the presumptive filters of perception are also catalytic structures for ongoing categorization, problem-solving, and reasoning as we actively engage in social functions.[103]

Nonetheless, impermanence remains the rule—once used, these reconstructions decompose into mere potentialities, resources that may or may not be called up in our subsequent dilemmas. Unless these reconstructable remnants from the past are "deemed" relevant, they become as naught. However, just because we do not consciously use traces of the past and our patterned coherences does not mean that their subconscious legacy is done. The footprints of cognitive experience—the firing of neural networks—however faint, guide our present endeavors.

2. *Impact Of Contextualism On A Theory Of Ecological Learning*

Translating the technical jargon of contextualism to the more familiar language of learning, a contextualist pedagogy explodes the container and conduit metaphors of school-based, educator-connected teaching[104] and would, for example, "authorize" a law student to functionally engage the situated dilemmas of lawyers much earlier than four weeks after the bar exam. A contextualist pedagogy would be one that places novices within a functional domain where they could solve authentic problems. If students are not in a disciplinary context, if they are studying decontextualized materials and strolling step-by-step through simple task simulations, if they are being instructed "out-of-the-context-of-action,"[105] they would be missing much of the

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AND CONCEPTUAL DEVELOPMENT: ECOLOGICAL AND INTELLECTUAL FACTORS IN CATEGORIZATION 141, 142 (Ulric Neisser ed., 1987) (emphasizing the routine use of prior interpreted episodes, exemplars, as analogies for present cognition).

99. The embodiment of perceptual experiences and enactions becomes what Mark Johnson refers to as experiential gestalts and image schemas; we "see" the world as body-like containers, and project our in-out, up-down, and front-back orientations. *See* JOHNSON, *supra* note 16.

100. Scripts are the important, recurrent sequences of social events, for example going to a birthday party, eating at a restaurant, hailing a cab in New York City, being in a post office. "These scripts serve as an entry point to storytelling and story understanding, even as they allow children to conceptualize and to report what has happened to them in their own lives." GARDNER, *supra* note 16, at 67. "Perhaps most important ... scripts serve as a generic set of sequences of events against which newly encountered events are judged." *Id.* There is growing evidence that people prefer to compose objects and activities on a functional or thematic basis corresponding to the scripts they are living. Robin Fivush, *Scripts and Categories: Interrelationships in Development, in* CONCEPTS AND CONCEPTUAL DEVELOPMENT: ECOLOGICAL AND INTELLECTUAL FACTORS IN CATEGORIZATION 234 (Ulric Neisser ed., 1987). Additional evidence establishes that children are highly adaptive to scripted occurrences evidencing great contextual sensitivity in language and communication. Marie A. Sell, *Language and Context: Examining Links Between Pragmatics and Scripts, in* CONTEXT AND DEVELOPMENT 77 (Robert Cohen & Alexander W. Siegel eds., 1991).

101. "In contextualism, the abstractions are temporary integrations or scaffoldings" which we *construct* as needed. GILLESPIE, *supra* note 16, at 170. "[C]ategories are not rigidly bounded but fluid; we use them as flexible structures as we make sense of events and situations." *Id.* at 171.

102. Fuzzy set theory is traced to Lofti Zadek, *Fuzzy Sets*, 8 INFO. & CONTROL 338 (1965).

103. Contextualists attempt to avoid "any formalization or objectification of schemata that would separate them from action [or from functioning]." GILLESPIE, *supra* note 16, at 97.

104. *See supra* note 5.

105. JEROME S. BRUNER, TOWARD A THEORY OF INSTRUCTION 53 (1966) (e.g., telling

"whole"—important, multisource clues would be absent. Instead, students should be exposed to real problematic events which they will process simultaneously and subconsciously as well as reflectively over time. They should build their own repertoire of practice exemplars[106] from which patterns will emerge and from which they would gradually construct schemata of representative problems and their solution methods.

a. The Contextual Education of Children—The Cognitive Imperatives of Multiplicity and Functionality

Skeptics may ask what support is there for the proposition that people learn well contextually? Well, we might start by observing that pre-school children are extraordinary contextual learners and that the sum total of their early attainments exceed those of older school children. For example, preschoolers learn their mother tongue and the functional and social activities of daily life without any structured instruction, compared to the significant possibility of functional illiteracy of their older peers after twelve years of formal schooling. That the untutored infant and young child can learn the syntax, semantics, and pragmatics of a first language and other symbolic systems; that she can "sense and feel" her way to a robust sensorimotor understanding of the physical world; and that she can develop a naive but serviceable understanding of self, mind, others, and community is a remarkable testament to our species' cognitive abilities to enact within and learn from our physical and cultural environments. These abilities are all the more remarkable because they are successfully deployed in a wide variety of rich, multifaceted contexts and because the ordering of chaos proceeds at such a rapid pace.

The most basic explanation why human children are cognitively equipped to learn contextually[107] is their cognitive enablement, indeed their enactive *cognitive imperative, to process multiple sources* of environmental information simultaneously in order to reach dynamic coherence.[108]

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a skier to "shift to his uphill edges").

106. *See* SCHON, *supra* note 5, at 138 ("The practitioner has built up a *repertoire* of examples, images, understandings and actions."); Kuhn, *supra* note 98, at 471("Acquiring an arsenal of exemplars, just as much as learning symbolic generalizations, is integral to the process by which a student gains access to the cognitive achievements of his disciplinary group."); Denise Dellarosa Cummins, *The Role of Analogical Reasoning in the Induction of Problem Categories*, 18 J. EXPERIMENTAL PSYCHOL. LEARNING, MEMORY & COGNITION 1103 (1992) (finding that the induction of problem categories relies heavily on applications and comparisons of problem exemplars in solving actual problems). The idea of practice exemplars is explored in much greater detail at *infra* notes 220–24 and accompanying text, and *supra* note 98.

107. GARDNER, *supra* note 16, at 6 (defining as an intuitive learner, "the young child who is superbly equipped to learn language and other symbolic systems and who evolves serviceable theories of the physical world and of the world of other people during the opening years of life.").

108. Opposed to the simplification-by-isolation theory of learning typical in schools is a simplification-by-integration theory relying on simultaneous, subconscious processing of multiple parallel subprocesses. Paradoxically, it may be easier to learn in an authentically rich context with multiple sources of information than in a single-task, one-step-at-a-time controlled environment. *See* Iran-Nejad, *supra* note 5. The distinction is between the bottleneck of short-term memory in conscious processing and the simultaneous, distributed, self-regulating processing of multiple sources of information using parallel perceptual and cognitive subsystems.

Evidence suggests that people actually process multiple sources of information better than they do single sources. *Id.* Accordingly, instead of learning isolated skills or tasks in

> [T]he core of the answer lies in the inherent relationship between the multisource nature of learning and the context in which learning occurs. One would expect learning to be effective in authentic, real world contexts of early childhood, where the various sources that must contribute to learning are most likely to be operating simultaneously, and to be less effective in the less-than-authentic school contexts of later years.[109]

Empowered by simultaneous processes and drawing on their expanding stock of sense-based schemas and culture-based encoders and decoders, the young child's mind leaps to the primary task of consciousness—to create *functional coherence* out of multi-faceted environmental chaos.[110] Particularly impressive, in the cognitive realm, is the young contextual learner's ability to categorize objects and events so that they can function in the physical and social world. Even toddlers use prototype categories, their central features and their permitted radial variability, to screen and encode new information. In addition to constructing basic level categories, children also create a super-filing system for organizing and ordering categories. This "ontology" permits children to draw "inferences about, within, and across categorical boundaries."[111] Once this mental grid is formed, children are capable of analogical and metaphoric reasoning, of creating theory, and of displaying imagination and creativity in their activities. As children creatively engage the functional dilemmas of their lives, children also develop and employ intuitions, biases,[112] and heuristics[113]

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decontextualized settings, "the more meaningful, the more deeply or elaborately processed, the more situated in context, the more rooted in cultural, background, metacognitive, and personal knowledge an event is, the more readily it is understood, learned, and remembered." Asghar Iran-Nejad et al., *The Multisource Nature of Learning: An Introduction*, 60 REV. EDUC. RES. 509, 511 (1990).

109. Iran-Nejad et al., *supra* note 108, at 590.

> [T]he prevailing view of learning in educational practice is still the information-transmission model. Yet this view, which usually results in the design of weak learning environments, is strongly contradicted by the conception supported by a substantial body of recent research, namely that learning is an active constructive process. Learners are not passive recipients of information, but they actively construct their knowledge and skills on the basis of their prior—informal as well as formal—knowledge, and through interaction with their environment.

Erik De Corte, *Fostering the Acquisition and Transfer of Intellectual Skills*, *in* LEARNING ACROSS THE LIFESPAN: THEORIES, RESEARCH, POLICIES 91, 95 (Albert Tuijnman & Max Van Der Kamp eds., 1992).

Gardner evidences clear compassion for the *traditional or scholastic student*, "who seeks to master the literacies, concepts, and disciplinary forms of the school." GARDNER, *supra* note 16, at 7. Although schools could conceivably value multi-source learning and nourish genuine understandings, unfortunately most do not. Gardner concludes that present educational structures and practices primarily promote rote skills which most students cannot apply to novel problems, or even to unusual testing formats. He openly acknowledges the difficulty that teachers have in traditional school settings to model and instill understanding which students can thereafter imaginatively and rigorously apply on new problems or in unfamiliar settings. GARDNER, *supra* note 16, at 179.

110. *See* Ayer, *supra* note 23, at 487–88.

111. GARDNER, *supra* note 16, at 87.

112. The scripts and stereotypes of youth are especially problematic in later life when students

> respond on the basis of dominant images, prevalent stereotypes, or favored ways of framing a problem. They ignore information that obviously should be taken into account in making a decision ... in favor of assumptions about the behavior made on the basis of their daily experience .... A stereotype ... proves more robust than formal disciplinary statistical knowledge or logical thinking.

GARDNER, *supra* note 16, at 170–71.

which both enable and deform their cognitive performances. All of these cognitive enablements facilitate function. Nonetheless, children accomplish all of these cognitive achievements and functional competencies before they ever step in a classroom and before they are ever tied to a professional educator.

b. A Contextualist Pedagogy for Adults

What is true for children is also true for adult learners. "Clearly, there is much evidence that learning occurs readily and effectively in authentic, real-world contexts."[114] Although there is some role for conscious control of learning, "the bulk of the learning [occurs] dynamically outside the bottleneck of immediate attention by the active executive process"[115] through simultaneous processing of complex, multi-faceted environmental cues. Acknowledging and exemplifying this contextualist "rule" of cognition, most disciplinary experts (including law professors) attain their genuine understandings[116] through a long process of functional experiences and acculturation *within* an expert domain. Operating in such a domain, adept practitioners are "empowered to overcome constraints, to stretch their skills and concepts in new and even unanticipated

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Gardner reports that there is a whole family of biases that are regularly applied in most human judgments. They include: (1) the sunk-cost bias (throwing good money after bad money already spent, e.g., the arms race); (2) attention to irrelevant factors (people can't disregard irrelevant evidence); (3) the endowment effect (people are possessive of what they already have out of proportion to its real value); (4) the status quo effect (a preference for the conventional or previously selected option even where it is clearly inferior, e.g., the incumbency problem); and (5) the bias to avoid action rather than to commit to action (overestimating the dangers of action compared to inaction, e.g., fear of blood transfusions). *Id.* at 171–72. For an extended analysis of cognitive biases and illogical lay heuristics, see JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 114 (Daniel Kahneman et al. eds., 1982).

113. For example, one of the principal heuristics used in classifying or comparing events is the representativeness heuristic. Moore, *supra* note 23, at 284–85. Applying the representativeness heuristic, "a story is believable if it is similar to the [person's] actual or vicarious concrete experiences," *Id.* at 276, or "similar to the prototypes and instances in the [decider's] schematic database." *Id.* at 285 n.33 (citing W. BENNETT & M. FELDMAN, RECONSTRUCTING REALITY IN THE COURTROOM 61–65 (1981)). "The use of the representativeness heuristic is 'generally automatic and nonreflective and notably free of any conscious consideration of appropriateness." *Id.* at 285 n.33 (citing R. NISBETT & L. ROSS, HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT 18 (1980)).

Although the representativeness heuristic is surprisingly robust and economical, it is likely to shut down prematurely according to a cognitive phenomenon called "schematic inertia" or "belief perseverance." *Id.* at 300. "There are at least three cognitive mechanisms which may contribute to this perseverance effect: construction of causation explanations [that account for the validity of prior judgments], biased recall of similar instances from memory, and cognitive dissonance." *Id.* at 301. Belief perseverance makes it difficult to reverse premature judgments. Moreover, it causes us to ignore contradictory facts, to anticipate, pay attention to, and recall supportive rather than unsupportive facts, and to interpret ambiguity to support our previous inclinations. *Id.* at 303.

114. Iran-Nejad, *supra* note 5, at 591. "A broader view of cognition and context requires that task characteristics and cognitive performance be considered in the light of the goal of the activity and its interpersonal and sociocultural context. The purpose of thinking is to act effectively; activities are goal directed (tacitly or explicitly), with social and cultural definition of goals and means of handling problems." BARBARA ROGOFF, APPRENTICESHIP IN THINKING: COGNITIVE DEVELOPMENT IN SOCIAL CONTEXT 6 (1990).

115. Iran-Nejad, *supra* note 5, at 589.

116. Donald Schon uses the term "artistry," rather than genuine understanding, but underlying concepts are quite similar. SCHON, *supra* note 2, at 13. Thomas Kuhn uses the concept "paradigm" in much the same way, though he proceeds to explore how paradigms shift over time. Kuhn, *supra* note 98, at 23.

directions."[117] True experts, through their hard earned acculturation within a community of practice, become cognitive specialists of a particular functional context.[118] Stated differently, the life of a lawyer, or any other disciplinary expert, is deeply contextual, influenced by the myriad factors which assist her in reaching her intuitions, constructing her narrative understanding, and informing her action. In this view, lawyering is not a theory, though it can be subjected to theory; it does not consist of decontextualized, atomized instrumentalist skills, though it is skillful; it is not a posed snap shot though it is a live documentary.

The central impact of this discussion of contextualism for a theory of ecological learning is that the law student will learn about lawyering primarily by immersion in the community of legal practitioners participating in the flow of their meaningful and functional events which the student will gradually integrate into more and more coherent and comprehensive happenings. Lawyering and its constituent performances are the proper subjects of novice enaction and narrative reconstruction; not just the classroom performances of professors and not the reified dogma of doctrine.[119] The more a student becomes embedded in context as a legal worker, the more she wrestles enactively with the problematic events of the context, the more she subjects herself to the multiple forces of legal actors—clients,[120] colleagues, opponents, supervisors, support staff, judges, or legislators—the more she functions within particular legal institutions and "behavior settings"—law offices, courts, bar associations, legislative bodies, and administrative agencies—the more she struggle to construct a comprehensible story about her new way of life, the more mature, measured, and effective her education and her practice is likely to become.

The pluralism of cognition also has important implications for contextualist learning because it reinforces the centrality of the learner constructing and reconstructing her own coherences drawing on multiple sources and processing them both consciously and subconsciously. Stated differently, the pluralism of cognition suggests the impossibility of downloading unfiltered knowledge to a passive recipient; a learner cannot think predictably about anything in just one way nor can she "receive" knowledge without reconstructing it in the process. Instead, the contextualist lessons to be learned are the process lessons of exploring multiple resources distributed in the work environment,[121] considering many possibilities, and making choices based on

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117. GARDNER, *supra* note 16, at 8. Schon calls this the art of improvisation. SCHON, *supra* note 2, at 13.

118. *See* discussion of domains and transferability of expertise, *infra* notes 122–37 and accompanying text.

119. Under this analysis, law school education in the classroom and even in the clinic can be critiqued for cutting the figure of the law practice out of its environmental background and stressing step-by-step processes therefore depriving the student of a rich matrix of information which she can absorb and process however simultaneously and subtly.

120. *See* Robert D. Dinerstein, *Review Essay: Clinical Texts and Contexts*, 39 UCLA L. REV. 697, 728–29 (1992) (discussing contextual issues in client-centeredness).

121. The pluralism of context is just as prevalent in work settings and in professional domains.

> Any work setting ... contains a number of social groups. Some are co-workers, some are subordinates, some are one's managers. This variety of groups means, first that the individual is exposed not to a single message but to a variety. It also means that the individual, rather than accepting some inexorable process of

nuances of plausibility while taking into account the conventional evidence, arguments, and interpretations of a domain filtered through one's own commitments. It is in a real world context that a learner can hear the multiple siren songs of situation and decide when and if to apply or alter the conventional methods. Therefore, to maximize learning, practice contexts and their integral dilemmas must provide the opportunities, motivations, and means for the learners to consider many approaches and to improvise new solutions to meaningful problems. Since real practice contexts are ordinarily constituted by a continuing flow of authentic dilemmas, it is no surprise that practice-based settings should present such powerful opportunities for employing pluralistic cognition.

3. Social Practice Domains: Special Contexts and the Problem of Transferability

Before moving on to a deeper exploration of how student/novices might actually learn from their experience and what differentiates a better learning "experience" from one less good, I would first like to explore the specialized social-practice contexts called domains. In part, this is a belated exploration of the size and uniqueness of comprehensible contexts. It is also a preliminary investigation of the difficulty a novice might have in comprehending the complexities of a practice domain during a process of acculturation. Finally, it is an exploration of habituation to a contextual environment and the legacy of cognitive constrain that habituation might entail. Since lawyers function within a highly constrained professionalized domain, it is doubly appropriate to discuss specialized context and the related issue of transferability of expertise from one legal domain or sub-domain to another.

a. Social Practice Domains and Behavior Settings

Having established that human situatedness is largely social, contextualism also acknowledges that certain social contexts are more amorphous and more commonly shared by an entire culture-group whereas other social contexts are historically constituted, conventionalized, and frequently elevated and privileged as specialized *social practice domains.* As we get older and more socialized, we increasingly engage in socially meaningful roles and functions, either with regularity—an adulthood as an auto mechanic—or transitionally—a mosaic of part-time jobs and homemaking. Some of the roles and functional performances are fairly generalized throughout the population, e.g., parenting or driving an automobile, whereas others are much more specialized, e.g., being a concert pianist or a lawyer. More specialized, historically composed, and conventionalized practice contexts, where something other than a generalist acculturation is necessary, are called social practice domains.

Contextualism emphasizes the particularity and functional imperatives of each specialized context and ordinarily proposes situatedness within that practice domain as a necessary condition to understanding its "extraordinary

knowledge,"[122] undertaking its relevant performances, and appreciating the constraints and opportunities of its relevant *behavior settings*,[123] for example, courtrooms, judges' chambers, bar association meetings, legislative sessions, etc.

> Each discipline (like physics or history) and each domain (like chess or sculpture or marketing) exhibits its own particular practices and approaches which have developed over its lengthy if idiosyncratic history. One cannot begin to master a domain, or to understand it, unless one is willing to enter into its world and to accept the *disciplinary* and *epistemological* constraints that have come to be operative within it over the years.[124]

> occupational socialization, may adopt a "questioning and critically active stance to the organization setting and ... to the influencing pressures enacted within the working environment."

Goodnough & Wharton, *supra* note 41, at 164 (citation omitted).

122. In the recent past, there has been "deeper questioning of the professionals' claim to extraordinary knowledge in matters of human importance .... Some critics ... have engaged in a wholesale debunking of professional claims to special expertise." SCHON, *supra* note 5, at 5; *see* M. S. LARSON, THE AGE OF PROFESSIONALISM (1977); BURTON BLEDSTEIN, THE CULTURE OF PROFESSIONALISM (1976).

123. The concept of behavior settings is useful in understanding certain features of contextualism and of more regularized and conventionalized domains, although the concept carries some unfortunately rigid suggestions of behavioral determinism.

> Behavior settings are the basic units for analysis of the ecological environment; concrete, specific, particular environmental settings where certain kinds of molar behavior are regularly seen to occur. They are the immediate contexts with reference to which persons direct their purposive behavior—the drugstore fountain to get an ice-cream cone ....

Phil Schoggen, *Ecological Psychology: One Approach to Development in Context*, *in* CONTEXT AND DEVELOPMENT 281, 290 (Robert Cohen & Alexander W. Siegel eds., 1991). "[I]t is interesting that the behavioral differences among inhabitants of a behavior setting are fewer than the behavioral differences of a single person across behavior settings. In short, behavior settings ... facilitate and encourage or inhibit and divert, behaviors relatively independent of the particular inhabitants of the setting." Robert Cohen & Alexander Siegel, *A Context for Context: Toward an Analysis of Context and Development*, *in* CONTEXT AND DEVELOPMENT 3, 9 (Robert Cohen & Alexander W. Siegel eds., 1991). "Behavior settings have enormous influence on human behavior—if we had to put our money of the piece of the world that accounted for the single largest amount of variance in human behavior, we'd bet on the behavior settings to win." Siegel & Cohen, *supra* note 15, at 309.

Nonetheless, "[c]ontexts are more than just environments. They are even more than the specific, and heuristically fruitful, K–21 independent 'behavior settings' ... which are defined, in part, in terms of their scripts for human behavior (standing action patterns)." *Id.* at 308–09.

> Context is a melding of person and environment. *Context includes the consideration of persons* (conceptualized as active, constructive, information processors, replete with a past history and current sets of agenda, goals, expectations, etc.) *as embedded within sets of social relationships* (proximal and distal), *and within a physical setting* (offering behavioral opportunities and constraints), *all developing over time.*

Cohen & Siegel, *supra*, at 18.

124. GARDNER, *supra* note 16, at 8. Donald Schon also acknowledges the uniqueness of disciplinary contexts,

> A professional practice is the province of a community of practitioners who share, in John Dewey's terms, the traditions of a calling. They share conventions of action that include distinctive media, language, and tools. They operate within particular kinds of institutional settings .... Their practices are structured in terms of particular kinds of units of activity ... and they are socially and institutionally patterned so as to present repetitive occurrences of particular kinds of situations. A "practice" is made up of chunks of activity, divisible into more or less familiar types, each of which is seen as calling for the exercise of a certain kind of knowledge.

Although social practice domains have historical roots and constraints and although they have epistemological and discourse conventions as *interpretative communities*,[125] they are also subject to local conditions and varying degrees of centripetal and centrifugal force. Where barristers and judges continue to self-regulate that they wear long white wigs, as in England, we might surmise that stability and tradition are primary virtues. Where courts become ADR centers, and ex-judges hire themselves out as mediators, as in the States, we might infer that some change is underway.

In addition to balancing forces of tradition and transformation, many domains undergo a process of sub-specialization and regional differentiation. We have to question the similarity of the worlds experienced by a pediatric oncologist at a major teaching hospital and an emergency relief physician serving displaced persons at a refugee center. Likewise, we would wonder about the congruence between the worlds of in-house counsel at General Motors and a legal services attorney triaging clients with HIV. The greater the degree of transformation, sub-specialization, status distinction, and local option, the more destabilized a previously composed domain becomes. The particular balance of centripetal and centrifugal forces and the uniqueness of local conditions will clearly affect the coherence and comprehensibility of a social practice domain for a newly arrived member.

b. Degree of Transferability

One of the critical unresolved issues in cognitive science, especially given the destabilizations in certain domains, is the *degree of transferability* of expertise from one domain or sub-domain to another—the ability to apply information, understandings, and problem-solving skills acquired in one context

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SCHON, *supra* note 2, at 32–33. In the same vein, Kuhn, using the phrase scientific community, emphasizes a community's shared sources, the "fullness" of its internal communications, and the relative unanimity of its judgments. Kuhn, *supra* note 98, at 461. Williams identifies two central features which tend to differentiate one domain from another: "(1) what counts as the rules of good thinking differs from field to field, and (2) what different fields count as good evidence also differs from field to field." Williams, *supra* note 23, at 10. *See* Steven Lubet, *Advocacy Education: The Case for Structural Knowledge*, 66 NOTRE DAME L. REV. 721, 727 (1991). Experimental research confirms the thesis of domain uniqueness. "It appears that the actual reasoning process is schema–bound or context–bound so that different operations or inferential rules are available in different contexts." Nancy J. Cooke, *Modeling Human Expertise in Expert Systems*, *in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI 29, 48 (1992) (citation omitted).

125. Interpretative community theorists, like contextualist in general, also believe that words and other communicative acts—the meaning of social interaction—cannot be considered in isolation from the social context of the word's utterance or the act's occurrence. In this theory, interpretation, meaning, and understanding are highly dependent on the context—the historical, social and cultural context of the relevant actors and the immediate event. As a theoretical construct, *interpretative community theory* concludes that specific groups of writers and readers and social actors who play a particular social role, who share a culture and subculture, who have matriculated in a particular kind of training, who engage in a similar practice, and who thereby are situated in a remarkably similar experiential context, have developed highly determinate (conventional) meanings, conventional interpretative strategies, and conventional methods of practice (skills). Therefore, an interpretative community of lawyers will have a relatively constrained set of choices when engaging in the practice of law. Stanley Fish is perhaps the best known proponent of interpretative community contextualism. *See* STANLEY FISH, IS THERE A TEXT IN THIS CLASS? THE AUTHORITY OF INTERPRETATIVE COMMUNITIES (1980); STANLEY FISH, DOING WHAT COMES NATURALLY: CHANGE, RHETORIC, AND THE PRACTICE OF THEORY IN LITERARY AND LEGAL STUDIES (1989).

to another.[126] The scientific debate about transferability began in earnest in the early 20th century between scientists and educators who believed in the ubiquity of transfer from one domain to another, e.g., Latin to English, and those who believed that transfer is limited to domains containing nearly identical elements or shared common meanings.[127] Undoubtedly, humans learn from their past experience—the present is funded by the past.[128] Moreover, our shared communication and meaning-making systems, especially to the extent that they rely on the commonalities of language and the patterns of human dilemmas, ensure some comparability in discourse strategies and problem-framing strategies between domains.

Nonetheless, even though there are contextual clues and cues which ordinarily call forth well-established cognitive processes, these processes are not automatically invoked in novel settings solving unfamiliar problems. Most of the recent experimental research on transferability supports the conclusion that there is limited transfer, that expertise is inbred and home-bound more than hybrid and ready-to-roam. "It is not at all obvious that critical thinking can be learned as a generic skill. Rather it must be taught in a particular field, embedded in a particular community of knowledge."[129] Accordingly, expertise

126. It is important to focus on the degree of transferability rather than binary extremes because of the wealth of evidence that people both habituate their coherences and that they nonetheless change and respond flexibly to new dilemmas. If people had no ability to transfer understanding, if each experience remained isolated and unintegrated, you could only learn to drive one car on one street at a time, if you could drive at all. Abstraction would be impossible; two plus two apples equal four would not help you with two plus two oranges equal four. We would truly experience life as chaos, and consciousness, as we know it, would not exist. On the other hand, habituation happens; people are possessive about their coherences, understandings, and ideologies. People are capable of not seeing what they do not expect. Mental momentum, both on a large scale and a small scale, is readily apparent.

These obvious realities move us to the center of the scale. They help us focus on the more important questions of how easily and how distantly we can transfer our knowledge. (1) What are the degrees of flexibility of people deeply experienced in a practice domain in attending to the novel problematics of that domain? (2) What are the degrees of flexibility of people experienced in a domain in transferring their previously effective exemplars, understandings, and procedures to a new domain? (3) Can this flexibility of transfer be trained or enhanced? *See* THE GENERALIZABILITY OF CRITICAL THINKING: MULTIPLE PERSPECTIVES ON AN EDUCATIONAL IDEAL (S. Norris ed., 1992) [hereinafter THE GENERALIZABILITY OF CRITICAL THINKING].

127. *See* Stephen J. Ceci & Ana Ruiz, *The Role of General Ability in Cognitive Complexity: A Case Study of Expertise*, *in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI 218 (1992); BAER, *supra* note 48, at 1–4.

128. We bring to our experiencing "what Dewey calls 'funding' from [our] past experience. Meaning and significance from past experience and learning are carried over into interpretations and actions in present situations." GILLESPIE, *supra* note 16, at 55. The past is available to foreground the present even in the absence of "conscious" memory. "Memory sets the stage in a world of change, uncertainty, and action." *Id.* at 108. Memory, the flexible, transmogrifying traces from the past, "'suffuses, interpenetrates, colors what is now and here uppermost.'" *Id.* at 142 (citing DEWEY, ART AS EXPERIENCE, *supra* note 16, at 306).

129. Williams, *supra* note 23, at 11. The debate, however, is not quite as simple as Williams suggests. It seems clear that what is called "critical thinking" requires both a knowledge base in the relevant field (domain) and the ability to think critically in that field. Robert H. Ennis, *Critical Thinking and Subject Specificity: Clarification and Needed Research*, EDUC. RESEARCHER, Apr. 1989, at 4, 7. Nonetheless, there is additional evidence for "general" critical thinking skills which cross domain boundaries. John E. McPeck, *Critical Thinking and Subject Specificity: A Reply to Ennis*, EDUC. RESEARCHER, May 1990, at 10 (the two types of critical thinking skills, the general and the specific, most often function within a specific domain); David N. Perkins & Gabriel Salomon, *Are Cognitive Skills Context-Bound?*, EDUC. RESEARCHER, Jan.-Feb. 1989, at 16 (there is a "close partnership" between general and

is relatively domain specific;[130] there is no Renaissance expert (except, of course, law professors).

Even the theory of domain-specificity might be too broad a theory about the scope of expertise and the locus of its creative deployment. There is some recent suggestion that creativity is *task-specific* not domain-specific (let alone universal as proposed by divergent thinking theories of creativity).[131] Under this theory, what might be transferable within a domain or across domains is a task-specific form of creativity. To become truly adept within a domain therefore requires exposure and practice to the full array of its tasks and performances. Otherwise, one risks becoming a sub-specialist in one task and a novice in all others.

c. Individual Variation

Even though expertise is relatively domain specific, there are individual variations in the ability to transfer complex cognitive expertise.[132] One of the original postulates of this variation was that more "intelligent" people, people with a higher IQ or "generality factor," might have an increased ability to transfer knowledge, insights, and processes across domains. This postulate was, however, challenged and refuted in a series of studies on expert racetrack handicappers who had demonstrated unique ability to predict racing odds at post time. Expertise in this setting was not correlated to general IQ; instead it was related to the complexity and interactiveness of the expert's cognitive processes.[133] Moreover, IQ was not correlated to the transfer of the experts' seven-part, racetrack algorithm to a new controlled domain of predicting stock price increases. Despite a long series of trials in which to apply the previously acquired expert algorithm, two expert subjects with quite different IQs did not

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specialized knowledge); Robert H. Ennis, *The Extent to Which Critical Thinking is Subject-Specific: Further Clarification*, EDUC. RESEARCHER, May 1990, at 13 (some general critical thinking skills do cross domain boundaries); Robert Chafee, *Cognitive Psychology and Educational Practice*, 9 REV. RES. EDUC. 3, 11 (1981) (working in different settings increases ability to adapt performances to contextual variants); Peverly, *supra* note 87, at 83–84 (experts use (1) domain specific strategies; (2) domain general strategies, e.g., problem-decomposition, inferencing, hypothesis generation, and planning; and (3) metacognitive ability to reflect on and control strategies).

Debate on this issue, at least in the critical thinking movement, continues hot and heavy. *See* THE GENERALIZABILITY OF CRITICAL THINKING, *supra* note 126. One of the most interesting claims in this debate is that learners can be trained to increase their transfer if there are explicit efforts to explore or "bridge" the connections between one context and another. PERKINS, *supra* note 44, at 122–27.

To give a specific, law-related example of the relevance of the debate about transferability, consider whether persuasive argumentation is a generic or domain specific skill. Clearly, the Greeks, in their classic studies of rhetoric considered argumentation a central, transferable human skill. *See* THE RHETORIC OF ARISTOTLE (Lane Cooper trans., 1932). That view persists to the present where ancient and more modern theories of argumentation are offered as generic skills, if not for everyone, then at least for lawyers. *See, e.g.*, JAMES A. HERRICK, CRITICAL THINKING: THE ANALYSIS OF ARGUMENTS (1991); Linda Levine & Kurt M. Saunders, *Thinking like a Rhetor*, 43 J. LEGAL EDUC. 108 (1993) (focusing on lawyers). Are these authors right that the features of persuasive argumentation in most domains are learnable and transferable as abstract, instrumental skills?

130. *See* Williams, *supra* note 23, at 11; John E. McPeck, *Thoughts on Subject Specificity*, *in* THE GENERALIZABILITY OF CRITICAL THINKING, *supra* note 126, at 198, 202–04.

131. *See* BAER, *supra* note 48, at 7.

132. Ceci & Ruiz, *supra* note 127, at 219–20.

133. *Id.* at 221.

intuitively experiment with their old methodology in the new stock market domain, even though the market had been artificially structured to replicate the "rules" of their racetrack system. Thus Ceci and Ruiz concluded that IQ is neither a good predictor of cognitive complexity nor of transferability.[134]

d. Conditions of Transfer

Not only does expertise rarely travel far, it frequently decomposes at its borders; thus, when experts from one domain are confronted with a problem from a distant domain, they ordinarily employ novice skills rather than a generic set of expert skills. Not only do the "outside" experts lack the predicate knowledge of the domain, they cannot necessarily predict or employ the modes of thought and persuasion that are conventionally accepted. One of the most intriguing social science experiments on the limits of transferability asked a variety of experts and novices to solve a Soviet grain-shortage problem assuming that they were the Soviet Minister of Agriculture.[135] At the novice end of the spectrum were college students in a beginning course on the Soviet Union and graduate students in Soviet studies. Then there were three sets of experts at the other end of the spectrum: (1) political science experts specializing on the Soviet Union, (2) other political science experts specializing in different world regions, and (3) expert chemists.

In essence, three out of four expert chemists were no better than the rank novices, college students, in solving the problem, indicating that there is little or no transferability from the "hard-science" expert domain of chemistry to the distant "soft-science" expert domain of political science. In contrast to the novices and chemists, both the Soviet and non-Soviet political science experts generated a more abstract, frequently redefined problem. In addition, they proposed more abstract solutions using more skill in examining the implications of their proposals. In the process of problem-solving, they deconstructed the surface features of the problem into sub-problems and then used broad principles through long chains of reasoning to address each sub-problem, including its ramifications and constraints. Because of their greater depth of knowledge about the Soviet Union, the Soviet experts' analyses showed more understanding of the social, political, and historical context of the "infrastructure" problems and they were better able to propose a coherent, general solution. The non-Soviet experts used similar reasoning, but with less depth and with fewer grand solutions.

Clearly, there was some transferability of expertise within the expert domain of "political science" to the sub-domain Soviet Union; just as clearly, however, true expertise within a sub-domain required "local knowledge"[136] of that sub-domain. Thus, while leaving many questions about the degree of transferability of expertise, this research suggests that expert thinking is

134. *Id.* at 226. Instead, "it [IQ] appears to reflect academic–verbal performance that is highly related to the possession of a codified set of background knowledge (primarily verbal knowledge obtained through schooling ...." *Id.*

135. This experiment is reported in James F. Voss et al., *Problem-Solving Skill in the Social Sciences*, 17 PSYCHOL. LEARNING MOTIVATION 165 (1983); *see* Williams, *supra* note 23, at 12–13; Mitchell, *supra* note 23, at 279–80 (both discussing this same experiment).

136. "[T]he shape[] of knowledge [is] always ineluctably local, indivisible from [its] instruments and [its] encasements." CLIFFORD GEERTZ, LOCAL KNOWLEDGE: FURTHER ESSAYS IN INTERPRETIVE ANTHROPOLOGY 4 (1983).

transferable from one context to another over relatively short distances. Moreover, expertise travels only if there is imaginative leap, metaphorical recognition, or active memory of common facts, tasks, and methods in diffuse domains such as lawyering.[137] The connections between the two domains should be at least implicit, and preferably explicit. These findings reemphasize the complexity of facilitating deep contextual learning in one domain or sub-domain at the same time you try to maximize the potential of transfer to novel settings even within the larger domain.

B. Experientialism—Learning-by-Doing Valued Work

1. Updating Dewey's Experiential Learning Theory

The advocates of contextualism do not advocate that the learner sit as a fly on the wall and passively await the mantra of context. Instead, the collective refrain of those who espouse contextual learning theory is experiential learning-by-doing. Easy to say, but what does it mean? What "experiences" are "educational?" What type, variety, and vitality of experience is important? How does role affect experiential learning? Is there an experiential learning cycle? What does reflection mean; is it possible let alone necessary? Does reflection lead to theory? When should reflection occur? Can it be facilitated and how? In turning to these questions, I am not so much abandoning contextualism, the focus on environment and situation, as I am refocusing on phenomenology, on the "subjective" experience of experience, and its legacy, learning. This focus brackets context in a particular way to permit an investigation on how we make the most of our immediate experience, both as a present engagement and as an accessible resource for the future.

Experiential learning theory became prominent in the twentieth century through John Dewey who was among the first to champion the more formalized ideal of experiential learning.[138] Dewey, in explicating his theory of

137. Having established the plausibility of domain-specific expertise and having questioned the transferability of expertise from one domain to another, cognitive psychologists leave us with an intriguing question—does law any longer consist of a single expert domain or are there different sub-domains each with their own unique ecologies of understanding? Stated in more education-centric terms, are we educating law students for a single profession, or does the rise of specialization and boutique law firms suggest that training law students for a "generalist" profession is training them to practice in the wrong century?

There is no doubt that "[t]he practice of law has ... become increasingly specialized." Alex M. Johnson, Jr., *Think Like a Layer, Work Like a Machine: The Dissonance Between Law School and Law Practice*, 64 S. CAL. L. REV. 1231, 1236 (1991); *see The MacCrate Report*, *supra* note 6, at 40–46. "A 1991 survey of the State Bar of California found that three-quarters of the lawyers spent at least 50 percent of their time in one area of concentration, and more than half the lawyers limited their practice to three or fewer areas of law." *Id.* at 41. Even among solo practitioners, who now compose only 33.2% of the bar, *id.* at 33, 55% spend more than 50% of their time in one substantive area. *Id.* at 41. "Today, narrowly specialized lawyers are joining other lawyers with complementary specialties to create megafirms. Associates are trained upon entry into the firm in an area of specialization ... and receive little, if any, work outside the specialty." Johnson, *supra*, at 1243. Even those private practice lawyers who do not join big firms, frequently join or form boutique or specialized firms and concentrate their practices on extremely narrow specialties. *Id.* at 1255. Likewise, public interest and government lawyers frequently have their specializations, e.g., food stamps, low-income housing cooperatives, municipal contracting.

138. *See* DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16. The European philosophy of phenomenology, a philosophy of experience, was beginning at the same time. *See, e.g.*, EDMUND HUSSERL, IDEAS: GENERAL INTRODUCTION TO A PURE

experience-based education, noted "the organic connection between education and personal experience."[139] In part, he and other progressive educators were rebelling against the segregation and disconnection of knowledge from the rest of experience and from the circumstances of its applicability.[140] As an early contextualist champion of experience, however, Dewey recognized that everything is experience, and that without refinement the call to experience might be a meaningless platitude.

> The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative .... For some experiences are mis-educative. Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience,... [A] given experience may increase a person's automatic skill in a particular direction and yet tend to land him in a groove or rut .... An experience may be immediately enjoyable and yet promote the formation of a slack and careless attitude .... Again, experiences may be so disconnected from one another that, while each is agreeable or even exciting in itself, they are not linked cumulatively to one another.... They are then taken, either by way of enjoyment or of discontent and revolt, just as they come.[141]

a. Continuity and Interactiveness

In trying to discriminate between all experience and *educational experience*, Dewey proposed two standards, continuity and interactiveness (what he later called transactiveness). "[T]he principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after;"[142] in other words, continuity is continuing growth of an interpretative schematic network of prototype experiences and their distant associative cousins. This growth tends "both to knowledge of more facts and entertaining of more ideas and to a better, more orderly, arrangement of them."[143] Interactiveness, on the other hand, requires the intense engagement of the interior life of the learner and a rich environment of external realities,

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PHENOMENOLOGY (W. R. Boyce Gibson trans., 1931). For a brief discussion of impact of phenomenology on contemporary cognitivism, see VARELA ET AL., *supra* note 16, at 15–21.

139. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 25.

140. *Id.* at 48. However intellectually challenging the classroom may be, the impact of educational insight, in terms of real world consequence and change, is postponed. "Making things happen" in the classroom ordinarily means following the intellectual maneuvers of the teacher and occasionally "blasting" a new connection or distilling a new abstraction thereby creating more coherence in one's understanding. "Making things happen" in practice, on the other hand, means actually interacting with and changing the environment through knowing-in-*practice*, that special kind of knowing. *See* SCHON, *supra* note 2, at 33. This is the difference between thinking about a new dessert and making one for a dinner party—actually making the dessert results in contented smiles, requests for seconds, full bellies, a round of applause, and requests for the recipe (in our best fantasies).

141. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 25–26.

142. *Id.* at 35. Dewey's intuition on this feature of experience is fully supported by current bio-neurological theories of learning. *See* EDELMAN, *supra* note 16.

143. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 82. In more recent language, continuity refers to the elaboration of schemata of knowledge, or paradigms, or ontologies. It also refers to the principles of integration and differentiation, the ability to integrate information in broad arrays at the same time that one maintains a sense of cognizable distinctiveness. *See* MIHALY CSIKSZENTMIHALYI, FLOW: THE PSYCHOLOGY OF OPTIMAL EXPERIENCE 41 (1990) (linking the ideas of integration and differentiation to his concept of "flow"). In Edelman's terms, continuity is a property of neural group selection and reentrant systems. EDELMAN, *supra* note 16, at 81–98; *see supra* note 30.

giving rise to a heightened sense of "situation."[144] During the accretion of highly interactive experience, "[t]he environment, the world of experience, constantly grows larger and, so to speak, thicker" because of the engaging quality of experience.[145] The two principles of continuity and interaction are "the longitudinal and lateral aspects of experience."[146]

b. Staging—Difficulty of Experience

Recognizing practical experience, continuity, and interaction as the grist of ecological learning for adults[147] still does not clarify which particular type, difficulty, and sequence of experiences are maximally educational. Most educators envision that the disciplinary novice will perform a range of productive activities of that discipline, although these activities could differ from fetching for the master all the way to creatively experimenting with new disciplinary forms. For example, in the expert domain of Japanese woodworking, productive activities could range from menial tasks of sweeping up shavings or applying finish, to the intermediate task of cutting a joint or hand planing the wood, to the much more complicated tasks of selecting wood, sharpening tools, or executing a new design.[148] Similarly, in a law office context, productive activities could range from double-checking footnotes as a law clerk for a senior attorney, to writing jury instructions and a trial brief, to conducting a trial independently in a busy public defender's office.

Although the passage through an experiential apprenticeship could become ritualized and rigid in its developmental roles and tasks, a more fluid concept of "staging" is preferable in assigning roles and tasks appropriate to the learner's emerging abilities and understandings.[149] Learners should perform tasks within their "zone of proximal development," tasks within the reach of their present competence but slightly beyond their level of total comfort and mastery.[150] To experience "flow" and a sense of engagement, rather than

144. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 41–44.

145. *Id.* at 74. Dewey's concept of interactiveness of experience is analogous to Csikszentimahalyi's concept of "flow." "[T]he mystical heights of the Yu [flow] are not attained by some superhuman quantum jump, but simply by the gradual focusing of attention on the opportunities for action in one's environment, which results in a perfection of skills that with time becomes so thoroughly automatic as to seem spontaneous and otherworldly." CSIKSZENTMIHALYI, *supra* note 143, at 151.

146. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 44.

147. The ideal of experiential learning, applied by Dewey to primary education, received an additional boost from more recent exploration of adult learning theory. Frank Block, *The Andragogical Basis of Clinical Legal Education*, 35 VAND. L. REV. 321, 331–32 (1982). Block borrowed the term "andragogy" from the education theorist Malcolm Knowles to describe the favored and supposedly unique process by which adults learn including their preference to learn from active experience solving real legal problems. *Id.* at 332, 341, 343–44. "[T]he more active the learner's role in the process, the more he is probably learning." *Id.* at 331 (quoting MALCOLM S. KNOWLES, THE MODERN PRACTICE OF ADULT EDUCATION 45 (1970)). The net impact of Knowles' insight is that adults learning a disciplinary craft need practical experiences as the main grist of their education—their knowledge will be in their experiential action.

148. Interview with John Reed Fox, woodworker (Nov. 1, 1993). Mr. Fox is a highly accomplished woodworker who uses Japanese hand tools and who recently permitted an experienced mainstream woodworker to apprentice with him.

149. *See* GARDNER, *supra* note 16, at 122–24. The idea of staging should not be equated with utilizing decontextualized single tasks. Tasks should still be situated, multi-faceted, and complex so that the student can use her "multisource," subconscious processing abilities as well as her conscious, step-by-step processes. *See* Iran-Nejad, *supra* note 5.

150. *See* Rogoff, *supra* note 114, at 14–18 (discussing Vygotsky's concept, "zone of

numbing boredom or oppressive anxiety, the learner should perform within a system of clear, achievable goals, undertaking activities reasonably matched to present skill enablements.[151] Therefore, rather than there being a particular answer to the question "what experiences are educational," there is a range of answers depending on the student's present abilities and past experiences, the product required, the master's needs and preferences, and the master's ability to provide collaborative guidance through shared participation.[152]

c. Repetition and Variety

Equally important as the staging of experience is the variety of experience. Although there is no doubt that a novice needs "learning-by-doing in very large doses" in order to gain expertise, there are in fact two contradictory premises of continuity in experiential learning which must be balanced in some way: learning through *repetition* and learning through *variety*.[153] According to the first premise, "repetition is a critically important aspect of skill development;"[154] e.g., "there is more to learn by climbing the same mountain a hundred times than by climbing a hundred different mountains."[155] Repetition leads to automaticity and efficiency as well as to refinement of earlier approaches based on explicit and implicit lessons learned from the successes or failures of those approaches.[156]

On the other hand, repetition can lead to habituation, stagnation, and premature closure,[157] making variety an important counterbalancing feature. "'It is ... important for the student to perform the task in the variety of situations that he or she is likely to encounter so that he or she has experience in adapting the performance to contextual variations.'"[158] Variety permits comparing the new and the old for differences as well as similarities, developing emergent patterns, abstraction, or schemata, and experimenting in alternate ends-means approaches. Moreover, not only must there be small-scale variations on a single skill-theme, the novice must be exposed to a broad range of tasks so that she can begin to experience the breadth of performances within

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proximal development").

151. CSIKSZENTMIHALYI, *supra* note 143, at 118–67.

152. Barbara Rogoff emphasizes the concept of guided participation "to stress shared activity with communication that includes words as well as actions, and to encompass the routine, tacit activities and arrangements [in a social practice context] ...." ROGOFF, *supra* note 114, at 17.

153. *See* Farber, *supra* note 23, at 558; *see* discussion on task specificity, *supra* note 131, especially the argument that a novice needs to be exposed to a broad array of domain tasks in order to learn the complete contours of the practice domain.

154. Don Peters & Martha M. Peters, *Maybe That's What I Do: Psychological Type Theory, the Myers–Briggs Type Indicator, and Learning Legal Interviewing*, 35 N.Y.L. SCH. L. REV. 169, 173 n.15 (1990) (citing G. BOWER & E. HILGARD, THEORIES OF LEARNING 10, 77–78, 446 (5th ed. 1981)).

155. PATAGONIA CATALOGUE 76 (Fall/Winter 1993) (quoting anthropologist Richard Nelson). Edelman, in particular, emphasizes the value of repeated experience in "selecting" or reinforcing neural networks and their higher reentrant correlations. EDELMAN, *supra* note 16, at 84–85.

156. Thomas J. Shuell, *Phases of Meaningful Learning*, 60 REV. EDUC. RES. 531, 543 (1990).

157. Robert J. Sternberg & Peter A. French, *On Being an Expert: A Cost-Benefit Analysis*, *in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI, at 194 (Robert Hoffman ed., 1992).

158. Mudd, *supra* note 16, at 201 (citing Robert Calfee, *Cognitive Psychology and Educational Practice*, 9 REV. RES. EDUC., 3, 11 (1981)).

the social practice domain.[159] Accordingly, the contradiction between repetition and variety must be reconciled on some appropriate basis—doing the same task every day and doing a different task every day are both problematic.

d. Value, Vitality, and Importance

As crucial as the staging and variety of work experiences may be, there is another dimension of experience, the value, vitality, or importance of the work being done, which may or may not give the disciplinary novice the powerful motivation of engagement.[160] Well, what makes work valued, vital, or important? And isn't some work too important, too complicated, too anxiety-provoking for a novice to undertake?[161] Are some final performances of a profession, cloning a gene or arguing to the Supreme Court, too exalted and difficult for the novice? One way to distinguish important work may be to focus on work that is outcome determinative—work that makes a difference in the end.[162] Another way to distinguish important work may be to contrast it with unimportant or trivial work—work that is both insignificant and disconnected.[163] In the end, however, importance is an interpretative evaluation reflecting the individual's sense of her active self[164] and reflecting what product is valued within the work culture and, in particular, whose work is valued.[165] This question becomes all the more important as paid work and career become the central stage for self-actualizing one's life and commitments.[166] Thus, the

159. This imperative is especially acute to the degree expertise is relatively task specific. *See* BAER, *supra* note 48; discussion at *supra* note 131 and accompanying text.

160. This concept of vitality is related to Dewey's concept of interactiveness, but interactiveness is a little too abstract; it leaves us with the question "what quality of the experience engages the students' intentions?" *See* DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 39–44. Edelman emphasizes that biological "values" drive cognitive experience, but he also acknowledges that social value systems may be mapped over the biological substrate. EDELMAN, *supra* note 16, at 169–72.

161. Surely the quest for vitality does not mean that third year students should be assigned lead counsel role in capital murder cases.

162. Even this distinction proves ephemeral given that most outcome-determinative work, in the law anyway, is ninety-nine percent preparation and one percent performance. Is it more outcome determinative for a paralegal to have discovered the crucial witness during fact investigation or for the trial lawyer to have brilliantly examined that witness during the trial?

163. What makes work unimportant? For example, double-checking the footnotes in this article is relatively insignificant in the grand scheme of things, though not to the law review editor assigned to this task. Writing a memo to the file on wrongful discharge law in Arkansas can also seem unimportant to a law clerk if she has not met the client, if she does not know the procedural posture of the case, if she does not know what relief the client is looking for. Accordingly, one feature of importance is knowing the connection between what you a doing and the "big picture" of the total work product.

164. "[W]ork requiring great skills and that is done freely refines the complexity of the self ...." CSIKSZENTMIHALYI, *supra* note 143, at 143. Csikzentmihalyi has described workers in a wide range of professions from factory work to surgery who have managed to develop a personal sense of value in their work. *Id.* at 143–63.

165. Does the Marxist concept of alienation of labor help us understand "importance?" Doesn't the quality of importance eventually pose the question what arrangements of capital, labor, product, organizational structure, human relations, and personal autonomy/dignity promote a sense of efficacious connection between a worker, her co-workers, and a final work product, especially where that "work product" is often the result of many minds, many hands, and many machines, even in a law office? *See, e.g.*, Davydd J. Greenwood, *Collective Reflective Practice Through Participatory Action Research: A Case Study from the Fagor Cooperatives of Mondragon, in* THE REFLECTIVE TURN: CASE STUDIES IN AND ON EDUCATIONAL PRACTICE 84 (Donald Schon ed., 1991).

166. Karl E. Klare, *The Labor-Management Cooperation Debate: A Workplace*

requirement that work be vital or important, if it is to be engaging and educational, ultimately requires that the work must be valued and useful in the disciplinary setting. The experiential learner must feel that she is out to accomplish real, vital results through "an immersion in the real problems of real people ... where the student feels that her work 'matters'."[167] This sense of efficacy and self-realization through valuable work may be critically important, even during school, to cement one's commitment to education and career.

2. *Questioning The Imperative of Lead Role: A Multiplicity of Legal Worker Roles*

To Dewey's suggestion that experiential learning requires continuity and interactiveness, I have added features of difficulty, variety, and value. But what of role? Must the novice be in a prototypical, fully actualized, and independent expert role, or can she be an assistant or collaborator? According to one model, experiential learning consists of performing the actual work of a domain, in role,[168] preferably a lead role, as the grist of educational reflection.[169] For example, a critical premise of the dominant in-house clinical model is that the

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Democracy Perspective, 23 HARV. C.R.-C.L. L. REV. 39 (1988) [hereinafter, Klare, *A Workplace Democracy Perspective*]. My colleague Karl Klare distinguishes between the efficiency, distributional, and self-realization dimensions of the employment relation. He argues "[t]o the extent possible, work should be structured as a locus of opportunity for learning, self-discovery, growth, and expression—as well as a means to achieve economic benefits, respect, and immediate psychic satisfaction." *Id.* at 50. In a subsequent article, Professor Klare expands and further contextualizes the ideal of workplace democracy addressing features of collective bargaining, democratizing firms, and democratizing the market. Karl E. Klare, *Workplace Democracy & Market Reconstruction: An Agenda for Legal Reform*, 38 CATH. U. L. REV. 1, 40–67 (1988).

167. Mark Stickgold, *Exploring the Invisible Curriculum: Clinical Fieldwork in American Law Schools*, 19 N.M. L. REV. 287, 316 (1989); *see* Motley, *supra* note 21, at 222.

168. According to a contextualist theory of role enactment, "a person's behavior is explained by identifying the role that the person is enacting, and this role is, in turn, explained by the social situation where others are also enacting roles;" an additional concept is "emplotment" which is defined "as the construction and elaboration of dramatistic plots." Houts, *supra* note 75, at 37–38.

> In simple terms, a fully-socialized individual is one who is, does, and believes pretty much what society asks him or her to be, do and believe. The explanations focus on three key concepts: *role*—a socially generated set of expectations about one's specific situations; *reference group*—the audience (or audiences) to whom one looks for approval, support, acceptance, reward and sanction; and *ideology*—the constellation of beliefs, knowledge, and ideas which, in a given situation, serve to justify, legitimate and explain both role definitions and the allocation of reward and sanction power among reference groups. In the legal system (or any system of social relationships) role definitions, reference groups and ideology combine to produce a distinct legal subculture which powerfully influences the professionalization of young lawyers. Over time, professional roles become part (and sometimes a very large part) of one's identity.

GARY BELLOW & BEA MOULTON, THE LAWYERING PROCESS: MATERIALS FOR CLINICAL INSTRUCTION IN ADVOCACY 11–12 (1978).

169. Minna Kotkin, *Reconsidering Role Assumption in Clinical Legal Education*, 19 N.M. L. REV. 185, 186 (1989) (outlining the predominant assumption of lead role in clinical methodology). Gary Bellow has defined clinical legal education as a method focusing on: "(1) the student's assumption and performance of a recognized role within the legal system; (2) the teacher's reliance on this experience as the focal point for intellectual inquiry and speculation; and (3) a number of identifiable tensions which arise out of ordering the teaching-learning process in this way." Gary Bellow, *On Teaching the Teachers: Some Preliminary Reflections on Clinical Education as a Methodology, in* COUNCIL ON LEGAL EDUCATION FOR PROFESSIONAL RESPONSIBILITY, CLINICAL EDUCATION FOR THE LAW STUDENT 371, 379 (1973).

student must perform in a lawyering role,[170] rather than simply assist other legal actors, in order for experience to be a powerful and memorable catalyst to insight.[171] According to Bellow,

> The central feature of the [legal] clinical method is its conscious use, both conceptually and operationally, of the dynamics of role adjustment ....
>
> ....
>
> The dynamics of role adjustment create a reservoir of new meanings and associations .... Sensation perception, intuition, feeling, cognition, necessarily combine to produce "new knowledge" at different levels of awareness, complexity, particularity, and immediacy.[172]

To effectively experience the contradictions of role, "the individual attorney [or law student] must locate herself within a professional context, examine the expectations of her role and choose whether or not to conform to those expectations."[173]

Not all educators, however, agree with the assumption that the law student must play a lead role in order for a role experience to be an educational one. Minna Kotkin argues at length that some students will learn best in co-counsel or assistant role where primary decision-making responsibility and major professional performances are undertaken by more experienced practitioners.[174] Gary Laser describes and proposes fee-generating clinics where the clinicians have principal responsibility and students are always second chair.[175] Even within the ranks of live-client clinicians, there is a respectable minority, approximately thirty-two percent, who believe that a lead-counsel role for the

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170. Kotkin, *supra* note 169, at 186. "[R]ole assumption ... is the defining feature of clinical education." Hoffman, *Supervisory Process*, *supra* note 13, at 283. *See* Andrew S. Watson, *The Quest for Professional Competence: Psychological Aspects of Legal Education*, 39 CINN. L. REV. 93, 103 (1968) (an early advocate of the importance of role assumption); Laser, *supra* note 4, at 265–67; *Report of the Committee on the Future of the In-House Clinic*, 42 J. LEGAL EDUC. 508, 514–15 (1992) (defining the centrality of role assumption); Henry Rose, *Legal Externships: Can They be Valuable Clinical Experiences for Law Students?*, 12 NOVA L. REV. 95, 98, 99 (1987); Robert Condlin, *"Tastes Great, Less Filling": The Law School Clinic and Political Critique*, 36 J. LEGAL EDUC. 45, 67 (1986).

171. "[P]ersonal identification [with role] brings with it a heightened need to learn. Students no longer seek knowledge solely to please the teacher or for some other external goal. They want to learn because their entire self-image in the profession they have chosen requires learning [their lawyering role]." Marjorie Anne McDiarmid, *What's Going On Down There in the Basement: In-House Clinics Expand Their Beachhead*, 35 N.Y.L. SCH. L. REV. 239, 287 (1990); *see also* Angela J. Campbell, *Teaching Advanced Legal Writing in a Law School Clinic*, 24 SETON HALL L. REV. 653, 655 (1993) ("if the clinician intervenes, intervention may deprive the student of the learning associated with doing the work himself ...."); McDiarmid, *supra*, at 286–92 (championing role identification generally); Eric S. Janus, *Clinical and "Contextual Integration": Helping Law Students Put the Pieces Back Together Again*, 16 WM. MITCHELL L. REV. 463, 477 (1990) (arguing that the student must be fully responsible for the client to experience the motivational tensions that lead to "integration").

172. Bellow, *supra* note 169, at 380–82.

173. Carrie Menkel-Meadow, *The Legacy of Clinical Education: Theories about Lawyering*, 29 CLEV. ST. L. REV. 555, 559 (1980). Other clinicians are similarly aware of the problem that a simple form of role assumption might lead to uncritical acceptance of prevailing models of lawyering in face of the manifest necessity that such roles be challenged and transformed. *See, e.g.*, Anthony Alfieri, *Essay: The Power of Clinical Knowledge*, 35 N.Y.L. SCH. L. REV. 7, 24 (1990) ("The unreserved trumpeting of role identification, however, is troubling. Without limitation, role identification is antithetical to the promotion of pedagogical and epistemological integrity in clinical practice").

174. Kotkin, *supra* note 169.

175. Laser, *supra* note 4, at 286 n.165.

supervisor is preferable to a more autonomous, largely self-directive role for the clinical student.[176] Even those clinicians who ostensibly insist on lead role frequently assign cases to teams of students thereby diluting the role-ethic of solo responsibility.[177] Nonetheless, even though assumption of lead counsel role may not be necessary (and may not work for all students),[178]virtually all clinicians, myself included, agree that role assumption as a legal worker, in a lead or subsidiary role, serves important goals by locating experience in an authentic functional context where one enacts a new sense of Self.

3. Experience Alone is not Enough

Although expertise is developed by first experiencing "actual task performance under a variety of circumstances,"[179] it is equally true that sheer years of experience are not proportionately correlated with expertise.[180] There are sub-competent duffers with a lot of years under their belts in almost all specialized undertakings (though it is only fair to note that all of these duffers spent their full complement of hours in the academy as well). Why do some people learn from schooling and experience and gain expertise while others do not? Why are there old novices and young experts? What mix of personal endowment, experience, and training maximizes the development of expertise? Is the whole contextualist/experientialist theory of ecological learning in professional domains undermined by the inability of accumulated experience to guarantee expertise?

Ceci and Ruiz, following their study of expert racetrack handicappers, have speculated on what distinguishes people who become true experts from non-experts who have the same amount of experience and thus "raw" knowledge of the relevant domain. They concluded that "[r]esearch is converging on the view that the critical factor in the development of expertise is the manner in which facts are integrated and differentiated in one's knowledge base."[181] Even more interestingly, they tied the likelihood of integration/differentiation to the functional motivation of the learner to benefit from the experience or training, what I have previously called engagement.[182]

Unfortunately, an optimal sense of engagement is thwarted in some instances by our inherent cognitive willingness to accept sub-optimal performance and outcomes. As long as a way of experiencing and practicing is

176. Stark et al., *supra* note 13, at 55. "[S]tudents can learn as well in the role of co-counsel, with an experienced supervising attorney acting as lead counsel and ultimate decision-maker." *Id.* at 40–41.

177. *Id.* at 38.

178. Kotkin, *supra* note 169, at 194.

179. Gordon, *supra* note 48, at 112.

180. Cooke, *supra* note 124, at 33.

181. Ceci & Ruiz, *supra* note 127, at 227. This idea of learning through the connection and integration of ideas is, of course, closely related to the question of transferability of domain knowledge. "Transfer, like learning, is likely to vary as a function of how well *connected* the ideas are." Richard S. Prawat, *The Value of Ideas: The Immersion Approach to the Development of Thinking*, EDUC. RESEARCHER, Mar. 1991, at 3, 10. *See* discussion, *supra* notes 126–37 and accompanying text.

182. Ceci & Ruiz, *supra* note 127, at 227–28; *see* Suzanne Hidi, *Interest and Its Contribution as a Mental Resource for Learning*, 60 REV. EDUC. RES. (1990). The concepts of engagement and interest are closely related to the idea of flow, the peak performance frame of mind enjoyed by those who are totally absorbed in a particular task. *See* CSIKSZENTMIHALYI, *supra* note 141.

"viable," it will be cognitively sufficient for some practitioners.[183] Herbert Simon has previously developed a theory of routine and non-routine work. As a result of situational habituation, individuals develop a bounded rationality that permits them to tolerate "satisficing" decisions. By limiting the information to which we attend and by deploying rough rules of thumb that have sufficed in the past, we are able to solve common problems efficiently and acceptably, even though sub-optimally.[184] Because minimal viability within a professional practice is socially constructed and tolerated, sub-competent professionals can continue to experience cognitive viability only because professional arrangements permit them to do so. As a consequence, for some practitioners, minimal competence—or not getting caught—rather than optimal performance, will be the pragmatic standard by which he enacts his practice. One of the challenges of professional socialization, therefore, is to nurture self-conscious commitments to superior performance and to enforce professional standards that increase the level of cognitive viability.

Once again, heightened motivation, functional engagement, and deep enactment with the authentic, challenging dilemmas of an expert domain may be the only reliable path to the development of expertise. Even engagement, however, needs to be boosted somehow by a heightened internal or external standard of viability-plus. Thus, one of the principal operational questions in a theory of ecological learning becomes how to maximize a sense of engagement and how to nurture a commitment to professional artistry.

C. Beyond Learning Cycles: Cognitive Constraints and Post-Modernism in the Uses of Theory and Reflection

Under old-style learning theories, the experience of performing tasks in a role is ordinarily conceptualized as only one stage in a multi-stage, theory/practice learning cycle, though conceptions differ about which should come first, theory or practice. Both of the conventional learning cycle models, however, assume and require separable periods of theory-building and reflection preferably with an educator. By making these assumptions, both models tend to ignore four critical features of engaged cognition and experiential learning: (1) the improbability of a realistic, articulable theory-to-be-applied in advance of experience; (2) the improbability of cognitively accurate reflection on cognition and elusiveness of theory-actually-applied after experience; (3) the pragmatic preference of cognition for pattern, theme, and exemplar, rather than for grand Theory, during experience; and (4) the unavoidable persistence of highly active cognition during experience. Although

183. *See* VARELA ET AL., *supra* note 16, at 205. Varela and his colleagues discuss the suboptimal pragmatism of cognition. They conclude that minimal viability, not optimality, is the ordinary standard of cognitive performance. One example of the suboptimality of human cognition, a suboptimality that is both a strength and a weakness, is our remarkable degree of interpretative dissonance. *See* Goodnow & Wharton, *supra* note 41, at 169–72 (discussing parental views about allowances). Cognitive suboptimality and interpretative dissonance are comparable to new evolutionary theory, namely (1) that the survival of an individual, species or ecological system proceeds by "satisficing" enaction with an environment, not optimal enaction, and (2) that multiple species can viably coexist in an environmental nitch, there is more than survival of the fittest. *See* VARELA ET AL., *supra* note 16, at 185–214.

184. VICTORIA J. MARSICK & KAREN F. WATKINS, INFORMAL AND INCIDENTAL LEARNING IN THE WORKPLACE 21 (1990) (citing Herbert A. Simon, *Administrative Decision Making*, 25 PUB. ADMIN. REV. 31 (1965)).

a more radical critique suggests that theory and reflection are impossible, I find a modest, but important role for both, a primary role for cognition/reflection-in-action and a more limited one for reflection-after-the-fact.

1. *Learning Cycles Redux and Prevailing Assumptions on Theory and Reflection*

a. Learning Cycles

Learning cycle theories come in two flavors—experience first and theory first. The best known theory of learning cycles emphasizes experience first: (1) functional immersion in experience, (2) reflection, (3) theory building, and (4) testing theory in a new round of experience.[185] Experiential learning, under this model, starts with concrete experience that is described and reflected upon by the student afterwards with the goal of reaching stable, memorable generalizations which are tested in new experiences.[186] An alternative model of the experiential learning cycle emphasizes the importance of developing a provisional theory even before the experience is undertaken. Dewey initially proposed this theory-first science of experience: (1) a learner should consciously develop a hypothesis about the way things are; (2) a learner should test that hypothesis in the crucible of experience; (3) the learner should carefully observe the results of experience; and (4) finally the learner should reflect on the results and modify her hypothesis accordingly.[187] Central in this alternative map is the pre-experience "theory-of-action." By deliberately articulating their "espoused theory-of-action" before undertaking an activity, students are in a position to reflect thereafter on the "theory-in-use." Dissonance between planning and performance can then be explored and "the identification of inconsistencies among components of the theory should, under appropriate circumstances, provide motivation to modify one's 'theories of

185. Kotkin, *supra* note 169, at 194–95. According to Professor Kotkin, this simple theory of a "universal" four-stage experiential learning cycle has matured under the theoretical and experimental work of David Kolb, who has been especially influential emphasizing the skills required at each step in the learning cycle. *See id.* at 195–96 (citing D. Kolb & R. Fry, *Towards an Applied Theory of Experiential Learning*, *in* THEORIES OF GROUP PROCESSES 33–57 (G. Cooper ed., 1975) and other sources).

This experience first learning cycle theory has been further refined by Peter Jarvis. *See* PETER JARVIS, PARADOXES OF LEARNING: ON BECOMING AN INDIVIDUAL IN SOCIETY 65–85 (1992). Jarvis describes a much more elaborate, situational learning cycle which also privileges, at the higher end, contemplation, reflective practice, and experimental learning. Like the other experientialist learning cycles, however, Jarvis emphasizes "the connection between learning and experience" especially experience that calls for a response. *Id.* at 70.

186. "The cycle of learning begins, then, with particulars [gained from experience] and immediately moves toward abstraction. It comes to a temporary goal when the abstraction can then be used in grasping new particulars in the deeper way that abstraction permits." JEROME S. BRUNER, ON KNOWING: ESSAYS FOR THE LEFT HAND 123 (1979) (in general, urging a pedagogy of discovery rather than of instruction). Since this book, Bruner has deemphasized abstraction and reemphasized narrative coherence. *See* BRUNER, *supra* note 16.

187. DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 86–87. This is the basic model that has been adopted wholesale by clinicians with some important modifications. In lawyering, this learning cycle focuses on:

> how to develop theories of problem solving by utilizing established lawyering theory and by generalizing from experience; how to apply these theories in the actual performance of lawyering tasks; and how to analyze the results of performance in order to test the effectiveness of the action taken and thereby improve one's theory.

Kreiling, *supra* note 13, at 288.

action' and promote more effective professional behavior."[188]

b. Prevailing Assumptions on Theory and Reflection

For true experiential learning to occur within either a theory-first or practice-first learning cycle, however, both models emphasize that students must *Reflect* on their experience and generalize, or *build a Theory*, for later experimentation.[189] Under the theory-first model, there is reflection-before-the-fact and reflection-after-the-fact; under the practice-first model, the principal moment of reflection is after-the-fact.[190] In both models, Theory, the result of Reflection, is applied in subsequent experiences. This shared conception of a reflective learning cycle rests on four assumptions: (1) that the goal of Reflection is abstraction or Theory; (2) that Reflection should ordinarily be articulated out loud; (3) that Reflection is most effective when shared with an educator who can help that learner deepen and broaden her theoretical insights; and (4) Reflection is the method of learning-how-to-learn from experience.

The first assumption is that abstraction or Theory is the goal of Reflection. This assumption replicates and perpetuates the epistemological presumptions of disembodied, acontextual knowledge, grand Theory, and the application of that pre-established, abstract knowledge to new problems according to classical rules of rationalism. Under this assumption, what is important is not the experience itself as an exemplar for analogical application or metaphorical extension; rather, what is important is the complete, coherent, and singular generalization, the Theory, which is the only reliable source in future experiential applications. Naturally, in this view, one is able to call up one's Theory, even in advance of experience, because it is well-stored, as

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188. Kreiling, *supra* note 13, at 295. Donald Schon also makes important use of dissonance between theory-of-action and theory-in-use as a locus of learning. SCHON, *supra* note 2, at 255–56. Professor Goldfarb accepts this form of learning cycle theory as her own, preferring only to label it a "theory-practice spiral." Phyllis Goldfarb, *A Theory-Practice Spiral: The Ethics of Feminism and Clinical Education*, 75 MINN. L. REV. 1599, 1650 n.214 (1991).

189. "Only experience that is reflected upon seriously will yield its full measure of learning." Paul Bergman et al., *Learning from Experience: Nonlegally Specific Role Plays*, 37 J. LEGAL EDUC. 535, 537 (1987) (citation omitted). Many others in clinical legal education "see clinical education as an attempt to teach an on-going process: to encourage a habit of self-analysis and reflection that will, in the end, result in continuing professional development." Kotkin, *supra* note 169, at 188; *see* Goldfarb, *supra* note 188, at 1650; Harold A. McDougall, *Lawyering and Public Policy*, 38 J. LEGAL EDUC. 369, 371–72 (1988); Rose, *supra* note 170, at 100; Sacks, *Student Fieldwork as a Technique in Educating Law Students in Professional Responsibility*, 20 J. LEGAL EDUC. 291, 294 (1968); Nina W. Tarr, *The Skill of Evaluation as an Explicit Goal of Clinical Training*, 21 PAC. L.J. 967 (1990) (urging that the implicit goal of evaluation, of self and others, be made an explicit goal in clinical education); Amy L. Ziegler, *Developing a System of Evaluation of Evaluation in Clinical Legal Teaching*, 42 J. LEGAL EDUC. 575 (1992) (describing a pedagogy designed to facilitate acquisition of skills of self-evaluation and reflectiveness).

The call to a reflective pedagogy is not limited to clinicians; there is an enthusiastic audience among progressive adult educators as well. *See, e.g.*, Jarvis, *supra* note 185, at 76–78, 113–14; PHILIP C. CANDY, SELF-DIRECTION FOR LIFELONG LEARNING: A COMPREHENSIVE GUIDE TO THEORY AND PRACTICE (1991); JACK MEZIROW, TRANSFORMATIVE DIMENSIONS OF ADULT LEARNING (1991). This call is addressed more directly and critically in my second article.

190. As Dewey said, "To reflect is to look back over what has been done so as to extract the net meanings which are the capital stock for intelligent dealing with future experience." DEWEY, EXPERIENCE AND EDUCATION, *supra* note 16, at 87.

Theory, and exists prior to unfolding contextual events. In this view, Theory is not simply a rapidly deployed, provisional resource, one of many; it is a reified, necessary blue-print—it is the high road of rationality.

The second assumption is that it is *necessary* to Reflect self-consciously, preferably as an external saying-out-loud with another, but permissibly as a conscious, disciplined, internal dialogue with oneself—we must turn on the spotlight of consciousness and stand before the mirror to see what is truly there. The predominant vision, at least among in-house clinicians, appears to be that reflective words must be spoken. "There is no doubt that some learning occurs from any experience. But the ability to generalize from experience to improve performance on future occasions is not learned by most people unless they *articulate* why they are taking certain actions and reflect upon the effect of their actions."[191] Gardner, on the other hand, while emphasizing the centrality of reflectiveness, suggests that reflection can be internal as well as external. "I consider especially crucial the notion of building up the student's own sense of responsibility ... for making it *a natural habit of mind to reflect on her progress*."[192] "Such reflection brings into consciousness the often inchoate, pre-conscious theories and principles by which the student is operating. Only by bringing into consciousness and making explicit those theories that underlie action can students observe, evaluate, and improve them."[193] In either internal

191. Kreiling, *supra* note 13, at 286 n.8 (citing Bolman, *Learning and Lawyering: An Approach to Education for Legal Practice*, *in* ADVANCES IN EXPERIENTIAL SOCIAL PROCESSES 11, 113–14 (C. Cooper & C. Alderfer eds., 1978)) (emphasis added). Some research supports Kreiling's argument that learners should be encouraged to "think outloud" or to enter into a reflective dialogue with others, especially if they are exposed to alternative views which challenged the limits of their own thinking. *See* Richard S. Prawat, *Promoting Access to Knowledge, Strategy, and Disposition in Students: A Research Synthesis*, 59 REV. EDUC. RES. 1, 33 (1989).

> Verbalization appears to be the best means for achieving [reflective awareness of existing knowledge]. Thus, there is considerable support for the notion that discourse or dialogue plays a vital role in promoting student understanding and reflective awareness in a number of academic domains ....
> .... In the process of relaying thoughts to others, we also relay them to ourselves. It is the process of formulating thoughts into communicable representations that is most important in developing awareness of what one knows. Through verbalization, our thoughts become an object for reflection ....

Id. at 14.

More radical educators, such as Paulo Freire, also advocate that people, especially oppressed people, can reflect together about their immediate experiences and thereby liberate their consciousness. As a result of reevaluating their understandings, the "culture circles," as Freire calls them, plan action which they later reflect upon thereby continuing to deepen their understanding of oppression and their own liberation. PAULO FREIRE, PEDAGOGY OF THE OPPRESSED 57–66 (1970) [hereinafter FREIRE, PEDAGOGY OF THE OPPRESSED]; PAULO FREIRE, EDUCATION FOR A CRITICAL CONSCIOUSNESS (1973).

192. GARDNER, *supra* note 16, at 242 (emphasis added). To encourage this sense of responsibility and reflectiveness, Gardner strongly prefers the use of journals, process–folios, and other self–monitoring devices. In other words, the discipline of internal dialogue may not begin until it is nourished. Nonetheless, Gardner imagines that the confrontation between child-like understandings and more genuine expert understanding does not necessarily require frequent conversation with an expert, either the domain expert or an educational expert. In the same vein, according to Kuhn, reflecting on anomaly can slowly and irreversibly lead to paradigmatic revisions unaided by dialogue precisely because most disciplinary dialogue reinforces the paradigmatic or canonical. THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 52–65 (2d ed. 1970). Likewise, Steven Winter's concept of "situated self–consciousness" does not depend on talking outloud or reflective dialogue with others. *See* Winter, *Uses of Theory*, *supra* note 23, at 681–91.

193. Goldfarb, *A Theory-Practice Spiral*, *supra* note 188, at 1650 (citation omitted).

or external reflection, examining experience consciously to extract its lessons is considered to be a *necessary* condition for learning.

Building on the preference for externalized Reflection, the third assumption is that it is preferable to Reflect with an educator who facilitates the Reflection and raises it to the next higher level through some form of Socratic dialogue.[194] Under this assumption, the educator helps the learner explore her preexisting theory-of-action and the latent lessons of her experience, suggests alternative explanations, motivations, and interpretations, proposes Theories which may or may not apply, and teases the student into developing her own Theories of practice. This dialogic process both improves Theory and deepens the student's understanding of the processes of attaining depth and breadth in reflectiveness.

The fourth and last assumption is that Reflection "teaches" us how to learn from experience—the more we reflect the better able we are to learn in the future. Thus, the most common theme among clinical educators focuses on the end result of reflecting on one's experience whether out loud or not—namely, that the student is learning-to-learn for a lifetime of experiential learning.[195] This catechism suggests that learners can enhance their abilities to

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Anthony Amsterdam has suggested that students ask themselves a series of questions as part of their internal reflections:

> What were my objectives in that performance? How did I define them? Might I have defined them differently? Why did I define them as I did? What were the means available to me to achieve my objectives? Did I consider the full range of them? If not, why not? What modes of thinking would have broadened my options? How did I expect other people to behave? How did they behave? Might I have anticipated their behavior, their goals, their needs, their expectations, their reactions to me—more accurately than I did? What clues to these things did I overlook, and why did I overlook them? Through what kind of thinking analysis, planning, perceptivity, might I see them better next time?

Anthony Amsterdam, *Clinical Legal Education—A 21st Century Perspective*, 34 J. LEGAL EDUC. 612, 617 (1984).

194. *See, e.g.*, Richard Neumann, *A Preliminary Inquiry into the Art of Critique*, 40 HASTINGS L.J. 725 (1989) (urging a Socratic dialogue in writing conferences); Mary Kate Kearney & Mary Beth Beasley, *Teaching Students How to "Think Like Lawyers": Integrating Socratic Method with the Writing Process*, 64 TEMP. L. REV. 885 (1991) (same); Ziegler, *supra* note 189 (urging clinicians to make students articulate their plans, their self-evaluation, and their understanding of their cases).

The idea of a Socratic dialogue, with a questioning teacher and a learning answerer, is related to the claims of dialogic theorists who suggest that the process of a respectful, trusting dialogue results in better grounded emergent understandings and normative judgments. *See, e.g.*, Lucie E. White, *To Learn and Teach: Lessons from Driefontein on Lawyering and Power*, 1988 WIS. L. REV. 699, 727 n.117. The dialogists, however, imagine a less hierarchical relationship between the "expert" questioner and the naive "intuitive" learner. They envision a more equal conversational practice where both parties participate jointly in the goal of reaching a more coherent, shared understanding. Nonetheless, they also recognize that the person with more specialized knowledge might have a special opportunity and obligation to help shape and guide the conversation and to provide relevant information. *See* FREIRE, PEDAGOGY OF THE OPPRESSED, *supra* note 191 (speaking in radical terms of those who act in solidarity with the oppressed).

195. *See, e.g.*, *Report on the Future of the In-House Clinic*, *supra* note 170, at 513; Goldfarb, *supra* note 188, at 1651; Peter Gross, *California Western Law School's First-Year Course in Legal Skills*, 44 ALBANY L. REV. 369, 370 (1980); Kotkin, *supra* note 169, at 201; Krieling, *supra* note 13, at 284; Motley, *supra* note 21, at 220; Rose, *supra* note 170, at 100; Stickgold, *supra* note 167, at 325.

Adult educators also emphasize the theme of learning to learn. *See, e.g.*, P. Robert-Jan Simons, *Theories and Principle of Learning to Learn*, *in* LEARNING ACROSS THE LIFESPAN: THEORIES, RESEARCH, POLICIES 159 (Albert Tuijnman & Max Van Der Kamp eds., 1992);

engage the continuity and interactiveness of experience, that they can become more efficient, more expert, experiential learners.

2. Theory and Reflection in Experience

As previously outlined, there are at least four constraints on these assumptions about the primacy of Theory and Reflection: (1) we can rarely access and articulate applicable Theory in advance of experience; (2) our Reflection after experience is likely to be at least partially inaccurate and is unlikely to reach intuitive or tacit knowledge; (3) we have a cognitive preference for patterns, encapsulated theory/themes, and narrative/exemplars as resources rather than for grand Theory as such; and (4) the most focused moment of Reflection is cognition/reflection-in-action. After exploring these corrections in depth, we will be in a position to look at Reflection- and Theory-after-the-fact in a new light and to outline their important, but limited roles.

a. The Inaccessibility and Irrelevance of Acontextual Theory Before-the-Fact

Without doubt, skilled practitioners plan, and, in doing so, they call forth theories or coherences which guide their foresight and prediction. Just as plainly, however, successful practice is neither dependent on nor determined by abstract Theory as such. Too much of practice is situation-specific and subconscious to be dependent on Theory. Moreover, Theory, as a reconstructable resource, always faces the uncertainty of accessibility and the problem of under-determination. As such, Theory cannot be a blue-print for action, but merely one resource among many for structuring skillful performances.

For the most part, context proceeds theory. "Although we sometimes think before acting, it is also true that in much of the spontaneous behavior of skillful practice we reveal a kind of knowing which does not stem from a prior

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Robert M. Smith, *Implementing the Learning to Learn Concept, in* LEARNING ACROSS THE LIFESPAN: THEORIES, RESEARCH, POLICIES 173 (Albert Tuijnman & Max Van Der Kamp eds., 1992) "The effective learner is described as active and self-aware, in possession of a variety of learning strategies, knowledgeable about resources for learning, and capable of accurate self-monitoring and reflection on learning experience." *Id.* at 173. By and large, compared to adult educators, legal educators have been remarkably imprecise when touting the virtues of learning-to-learn. For an attempt to be exquisitely rigorous in describing the predicate skills of self-directiveness in learning see Candy, *supra* note 189, chapter 11. According to Candy, learning-to-learn capabilities include:

> (1) the ability to plan personal and group activities, which includes definition of objectives and time management; (2) the ability to identify and obtain, and the skill to use various sources of information (from verbal and written through audiovisual to computerized information); (3) the ability to read, watch, and listen with different objectives in mind (identifying relevant facts, identifying and critically assessing the main ideas, separating the crucial from the irrelevant, speed reading and skimming, decoding visual messages, comparing information); (4) skill at note taking, recording, paraphrasing, quoting, systematizing data, writing précis, and keeping records; (5) numerical literacy, including manipulating numbers and drawing and reading visual diagrams, tables, graphic presentations, visual messages, and so on; (6) command of a foreign language ... ; (7) the ability for self-evaluation in all stages of work and assessment of results; and (8) problem-solving ability as the combined outcome of the preceding skills and abilities.

Id. at 314.

intellectual operation."[196] Humans are poised to interpret situational dilemmas intuited through a gestalt awareness of a total but unique context. Both the particulars and the situational gestalt coherence prime and control cognitive functions prior to any recourse to Theory. Accordingly, Theory is constructed in response to a problem task *after* an intuitive recognition, unexplained in most accounts, of the salience of the Theory (or pattern or metaphor) to the *present* contextual dilemma.[197] Margolis in particular argues that all conscious learning and performance is based first on preconscious, interactive pattern recognition that depends on the *present* problem as the catalyst for constructing a temporary theory (or category) with which to decipher the dilemma.[198]

The fallacy of relevant Theory in advance of situational experience is not simply that the present dilemma calls forth the construction of a provisional model for solving the problem. The fallacy consists as well in assuming that Theory "learned" in advance of experience is accessible as such during the moment of cognitive engagement.[199] Any teacher who has watched a bright student "miss" exam issues the student "knew" should be in a position to understand that the inaccessibility of Theory is a critical flaw in Theory's claim to cognitive primacy. Our retention of Theory in abstract form is demonstrably poor, and poorer yet is our ability to routinely recall relevant Theory even in the throes of its most applicable circumstances.

Even if accessibility were not a problem, the final shortcoming with the image of readily deployable Theory is that "practice is always *underdetermined* by theory."[200] Time after time, I have observed students in my negotiation class flounder during a simulated negotiation even though they had theorized about the negotiation in advance. Their theory could not accurately predict the stream of dilemmas they actually faced. Although the process of thoughtful preparation may have created a *resource* upon which they *might* draw, the resource was one of confident familiarity rather than a theory-based blueprint of how to proceed.[201] This is not to say that skillful, even theory-based, preparation is not important. Instead, I am arguing that articulation of a formal Theory-of-action before action elevates Theory as such on the mistaken assumption that known, articulable Theory is reliably deployed on conscious command in pre-defined problem settings.

b. The Transparency of Cognition and the Inaccuracy of After-the-Fact Reconstruction

Many researchers have emphasized the transparency of active cognition and thus the inaccuracy of later reconstruction. Varela, Thompson, and Rosch argue that one of the principal insights of cognitive science is the predominance

196. SCHON, *supra* note 5, at 51.
197. *See* Margolis, *supra* note 34.
198. *Id.* at 112–40. See Barsalou, *supra* note 97, on the task-oriented construction of fluid categories.
199. *See* Prawat, *supra* note 191, at 4.
200. "[P]ractical judgments are always made in conditions of 'bounded rationality' where theoretical knowledge is often incomplete and practice situations never fully understood. To put it another way, practice is always *underdetermined* by theory." ROBIN USHER & IAN BRYANT, ADULT EDUCATION AS THEORY, PRACTICE AND RESEARCH: THE CAPTIVE TRIANGLE 74 (1989).
201. "The relationship between theory and practice is then not one where the former is 'applied' to the latter, but where representation and explanation can *assist* judgment, interpretation, and understanding." *Id.* at 93.

of subconscious, sub-propositional processing which can never be accurately recovered through introspection.[202] Margolis posits a seeing-that/reasoning-why distinction that cannot be decomposed; he argues that after-the-fact reconstruction, resting as it does on the now pre-existing outcome of cognition, can never accurately describe the original pattern recognition which leads to the outcome.[203] Lakoff draws on the concept of functional embodiment to describe tacit knowledge: "The idea that certain concepts are not merely *understood intellectually*; rather they are *used* automatically, unconsciously, and without noticeable effort as part of normal functioning. Concepts used in this way have a different, and more important, psychological status than those that are only thought about consciously."[204] Schon emphasizes the inherent inaccessibility of such tacit, subconscious knowledge. "When a practitioner displays artistry, his intuitive knowing is always richer in formation than any description of it. Further, the internal strategy of representation, embodied in the practitioner's *feel for* artistic performance, is frequently incongruent with the strategies used to construct external descriptions of it."[205]

Various cognitive researchers, especially in the Artificial Intelligence field, echo theorists' skepticism about the reach and accuracy of Reflection: "People cannot always give complete or accurate reports on their mental processes .... It can be especially hard ... to convey some types of knowledge, such as procedural knowledge .... '[S]elf-awareness is a complex, but carefully constructed illusion' and ... 'only in the exception, not the rule, can one really speak of what one knows.'"[206] "[A]s procedures become composed and automatized, the ability to verbalize knowledge of the skill decreases."[207] "[T]he more competent domain experts become, the less able they are to describe the knowledge they use to solve problems."[208] For these researchers, the entire field of knowledge acquisition in artificial intelligence and its plethora of indirect investigative techniques is ample evidence about the limits of self-

202. VARELA ET AL., *supra* note 16, at 59–81; *accord* Iran-Nejad, *supra* note 5. "[G]iven the existence of acts driven by the unconscious, conclusions reached by conscious introspection may be subject to grave error." EDELMAN, *supra* note 16, at 145–46. "A set of laws [or theories] is not a substitute for experience and it is certainly not equivalent to a set of events. Laws do not and cannot exhaust experience or replace history or the events that occur in the actual courses of individual lives. Events are denser than any possible scientific description." *Id.* at 162–63.

203. MARGOLIS, *supra* note 34, at 76–84.

204. LAKOFF, *supra* note 16, at 12–13. Schon too argues that much of the skilled knowledge of practitioners is tacit knowledge, implicit in action and shielded from consciousness, latent but unspoken, what Schon calls knowing-in-action and knowing-in-practice. SCHON, *supra* note 5, at 49–54; SCHON, *supra* note 2, at 22–26, 33. "What is striking about both kinds of competence [professional artistry and ordinary competence] is that they do not depend on our being able to describe what we know how to do or even to entertain in conscious thought the knowledge our actions reveal." *Id.* at 22.

205. SCHON, *supra* note 5, at 276; *see* discussion on implicit learning and tacit knowledge, *supra* notes 48–50; *cf.* SCHON, *supra* note 2, at 25, 32–36 (while acknowledging the difficulty of describing tacit knowledge, nonetheless urging reflection and attempts to describe it).

206. Cooke, *supra* note 124, at 30 (citation omitted).

207. Gordon, *supra* note 48, at 101. "[P]eople becoming competent in a given domain move away from the use of symbolic or declarative knowledge and toward a reliance on perceptual, nonverbalized, procedural knowledge." *Id.*

208. Kenneth M. Ford & Jack R. Adams-Webber, *Knowledge Acquisition and Constructivist Epistemology*, *in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI, at 121, 130 (Robert Hoffman ed., 1992) (emphasis deleted) (citing experimental results of D. A. WATERMAN, A GUIDE TO EXPERT SYSTEMS (1986)).

awareness and the improbability of accurate self-reflection.[209] According to these skeptics, why would we suppose that students, unlike experts in their fields, can accurately report the subtle contextual clues; the hastily constructed parade of prototypes, exemplars, and paradigms; and the multidimensional, subconscious processes of comparison, differentiation, imagination, and metaphorical extension? Doesn't the transparency of actual cognition doom Reflection and Theory to less privileged and more error-prone roles?

c. Our Cognitive Preference for Pattern Emergence and Thematization, Encapsulation of Theory, and Practice Exemplars

Contradicting the coronation of grand Theory, Donald Schon, George Lakoff, Mark Johnson, Jerome Bruner, and many others have described the cognitive preference for reasoning by pattern, theme, and exemplar, by analogy, metaphor, and narrative, rather than by Theory. As previously discussed, the accretion of experience ordinarily proceeds until a *pattern emerges*.[210] As such, patterns are the initial mental aggregation or clumping of previously separate perceptions and life events. Pattern recognition is experienced intuitively, as all-at-once seeing, as a feature of subconscious, subpropositional emergence.[211]

To say that a pattern emerges, however, does not end the discussion of what might be called Theory—it merely place this theory in its proper context as coherence[212] emerging from the bedrock of experience. Although the original subconscious clumping of pattern cannot be recaptured cognitively, the intuited theme or contextual gestalt coherence of the pattern[213] can be and is reflected upon. In other words, the *pattern may be consciously thematized* through reflection.[214] This thematization or theory-of-the-pattern always has a

209. *See generally*, THE PSYCHOLOGY OF EXPERTISE, *supra* note 48, especially articles by Stephen Regoczei, *The Psychology of Expertise and Knowledge Acquisition: Comments on the Chapters in this Volume*, at 297; Gordon *supra* note 48, at 110–14; Cooke, *supra* note 124, at 52–53.

210. For a full discussion of the impact of patterns, emergence, and subconscious self-regulation in human cognition, see Margolis, *supra* note 34; VARELA ET AL., *supra* note 16; Iran-Nejad, *supra* note 5. For a discussion of accessibility, see Prawat, *supra* note 191.

To argue that there is pattern emergence does not belie the thesis of cognitive pluralism—more than one pattern may emerge. The more basic explanation, however, is that consciousness still seeks to interpret the intuition or intuitions that spring forth. Moreover, patterns are not static but in constant flow because of the fluidity of experience. Thus, although "patterns" and intuitions thereof are an enormous aid to our cognition they are not the end of the story—there is still interpretation and flux.

211. For a discussion of the instantaneous, intuitive recognition of pattern, *see* Margolis, *supra* note 34, at 63–86. Zaner refers to the organization of the coherent core of a gestalt theme, or contexture, as "autochronous." ZANER, *supra* note 25, at 81. The thematic coherence emerges as a result of the gestalt demand for good continuation or closure. *Id.* at 247.

212. In general, I prefer the term coherence to theory because it suggests what is provisional rather than universal and what is experience-based rather than foundational.

213. Zaner's concept of contexture recognizes that a meaningful thematic gestalt arises from and cohesively unites the relevant field of experience. A meaningful, coherent *pattern of experiences* (rather than a single coherent experience) arises only in reference to a unifying theme. Likewise the theme of a pattern of experiences can only be found in its multiple exemplifications—theme and thematic field are inseparable. *See* ZANER, *supra* note 25, at 248.

214. "'The proper task of reflection ... [is] to consider ... [experience] and to explicate what can be found in it'" and thus reflection becomes the means of experiencing and thematizing experience itself. *Id.* at 139 (quoting EDMUND HUSSERL, CARTESIAN MEDITATIONS 34–35 (D. Carnes trans., 1860)). Related to the theory of thematization is Schon's idea of reflection-in-action. "Reflection-in-action in a unique case may be generalized to other cases, not by giving

"positional index" or a relevancy based on perspective, orientation, or purpose, meaning that the theory, with a small-t, can never be accurately or wholly decontextualized for future purposes.[215] Nonetheless, the intuited pattern may eventually be reconstructed and described through laborious, step-by-step conscious cognition into a grand Theory, including, for example, the grand Theory of lawyering skills emerging in the clinical literature. But, in each subsequent moment of actual experiential problem-solving, we must *access and simultaneously reconstruct* a thematized coherence that we judge (subconsciously) to be applicable.[216] In this instant of subconscious pattern recollection/reconstruction/thematization/application, there are instabilities and transformations required by the present dilemma, reducing grand Theory (even if remembered) to a mere resource in the far more comprehensive process of pattern-emergence/application.

Even though thematic coherence, or Theory, emerges primarily from situational experiences, it can also be learned laboriously as a result of instruction in Theory. For example, most of us now know something about the grammatical rules of our native tongue because the theories of grammar have been drilled into us. We might be tempted to say that this distillation of Theory from our own experiences or from the insight of others is our most powerful, free-standing resource for future engagements -that Theory is the most important, useful, and efficient form of cognition.

However, one of the most remarkable features of Theory is its tendency to merge back into experience, to thematize experience itself, which experience-thematized becomes the primary resource for our current dilemmas. Thus, the consequence of a particular experience, even experience thematized as part of a pattern, even experience with Reflection, is not ordinarily grand Theory (except for scholars using the painstaking technologies of academic literacy) but rather the *encapsulation of Theory* within experience. For example, one of the curiosities of experimental cognitive theory is the absence of grand Theory in deliberative practices of experts who are otherwise quite capable of reproducing the canonical understandings of their domain. What has happened to the grand Theory domain experts typically explored as students and which they adduce in their writing?

In their study of expert medical diagnosticians, Boshuizen and Schmidt observed that medical experts clearly have more biomedical knowledge than novices or intermediates but that experts' diagnoses of patient illness typically do not rely expressly on this biomedical knowledge.[217] In contrast to experts

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rise to general principles, but by contributing to the practitioner's repertoire of exemplary *themes* from which, in the subsequent cases of his practice, he may compose new variations." SCHON, *supra* note 5, at 140 (emphasis added). The past reflection–in–practice becomes the tacit knowledge-in-action used in the next related problem dilemma. Under this view, theory is improvisational jazz rather than the completely composed classical composition. *See* SCHON, *supra* note 2, at 30. The resulting, enrichened, exemplary experience then becomes a memorable resource on future occasions. Over time, we develop a more deeply appreciated repertoire of narrative practice exemplars and their reconstructable, provisional, and generative themes and explanations.

215. ZANER, *supra* note 25, at 75.

216. *See* Prawat, *supra* note 191.

217. Henry P. A. Boshuizen & Henk S. Schmidt, *On the Role of Biomedical Knowledge in Clinical Reasoning by Experts, Intermediates and Novices*, 16 COGNITIVE SCIENCE 153 (1992).

who tended not to use their abstract knowledge, novices and intermediates typically rely heavily and explicitly on their smaller fund of biomedical knowledge in attempting their less accurate clinical diagnoses. Boshuizen and Schmidt found that the expert's biomedical knowledge had become *encapsulated* within their larger fund of experiential knowledge. Rather than having to rely solely on abstract biomedical theories of disease processes, those theories had become composed in prototype memories of patient symptoms, i.e. clinical knowledge, in direct response to practical clinical experience.[218] As a consequence, the sophisticated clinical judgment of the experts relied on the "encapsulation of theory" via practical problem-solving experiences. Boshuizan and Schmidt therefore emphasize the importance of experience in metamorphosing Theory into its most useful form, back into experience itself.[219]

The enactiveness of experience, the emergence and thematization of pattern, and the encapsulation of theory all help explain why *practice exemplars* are such a dominant and powerful resource in problem-framing and problem-solving.[220] The idea of exemplars is particularly salient in discussing specialized knowledge within a social practice domain because exemplars are composed of the domain's basic-level events.

> Expertise is often packed in the form of incident accounts—context-rich accounts of nonroutine incidents. These accounts illustrate a variety of forms of expertise and link these forms to the contextual features of the situation. They capture interpersonal knowledge, specific details, goals, and precedents, and they illustrate types of cultural knowledge ....
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> [Exemplary] stories are records of lessons learned, analogues, and key decisions, stored in a form that is easy to call up when needed. They

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218. *Id.* at 177.

219. *See id.* at 167–69. The process of encapsulation, however, does not result in the loss of explicit biomedical knowledge; it remains dormant but available. Accordingly, when called upon to explain their diagnoses, the experts can do so in great detail and in close congruence with canonical medical explanations. *Id.* at 175. These findings fully support a conclusion that knowing-in-action is the most *functional* form of theory and that practical experience in the field building up a repertoire of practice exemplars is a necessary condition of reconfiguring theory into its most useful instantiations.

The argument for encapsulation of theory, though intriguing, is only one interpretation of Boshuizan and Schmidt's findings. They are equally consistent with the interpretation that expert medical diagnostician replace the weak heuristics of biomedical knowledge with the stronger heuristics of clinical experiential knowledge as soon as they get the chance. In this analysis, theory does not become encapsulated; it is replaced though it still remains accessible for social justification. Accordingly, the explication of biomedical knowledge after-the-fact to justify the experience-based diagnosis is no more that the articulation of the explanation required by the community of medical practitioners.

Despite the facial plausibility of this counter-analysis, I believe that theory does retain some generative power through encapsulation, that its efficacy is not entirely illusory. Just because it cannot fulfill its foundational claims, Theory does help guide us in our affairs, both by composing affairs and being reciprocally restructured and encapsulated in the processes.

220. To argue the predominance of exemplars is not to suggest that the evolving grand Theory of a domain is not a resource in practical reasoning. It is simply to argue that "domain experts acquire their expertise not only from explicit knowledge of the sort found in textbooks (i.e. widely shared consensual beliefs) but also from a fund of personal experience essentially consisting of functional but fallible anticipations held with high confidence and uncertain validity ...." Ford & Adams–Webber, *supra* note 208, at 133.

"Practical knowledge cannot therefore be derived purely from theoretical knowledge and practice is not something which can be merely 'read off' from theory. The learning of theory cannot tell anyone how to practice; in a very real sense *practice is learnt in practice*." Usher & Bryant, *supra* note 200, at 76.

function like the voice of experience ....[221]

These exemplars are employed spontaneously in the processes of reasoning by analogy, metaphor, and narrative.[222] "The familiar [past] situation functions as a precedent, or a metaphor, or ... an exemplar for the unfamiliar one."[223]

For example, in thinking how I might go about writing this law review article, I drew on the patterns and themes of my past writing projects and, in particular, on my past exemplars of writing appellate briefs and conference papers. I did not search the library for the grand Theory of how to write law review articles. Like other practitioners in a field, my first inclination was to search my own field of experience both subconsciously and consciously. Through "pattern emergence," my past experiences had eventually coalesced around a process view of writing rather than a product view. That thematic coherence was reinforced in my experience as a legal writing instructor and in my study of legal writing texts—I had come to richer appreciation of the recursive process of writing, thinking, reading, rewriting, rethinking, rereading, etc. But, in addition to knowing the basic themes and even Theory of writing projects, I primarily drew on my writing practice exemplars and their encapsulated themes which I employed in constructing the unique theory of my present dilemma.[224] In doing so, I believe I have replicated the paradigmatic reasoning methods of situated practitioners where grand Theory takes a distant back seat to the cognitive preference for emergence and thematization of patterns, encapsulation of theory, and application of exemplars.

d. Cognition/Reflection-in-Action

As to the fallacy of placing Reflection everywhere but within experience itself, I propose cognition/reflection-in-action,[225] consisting of subconscious

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221. Gary A. Klein, *Using Knowledge Engineering to Preserve Corporate Memory, in* THE PSYCHOLOGY OF EXPERTISE: COGNITIVE RESEARCH AND EMPIRICAL AI, at 170, 180–81 (Robert Hoffman ed., 1992). Klein emphasizes organizational memory and the vicarious experiences of others as resources for the problem-solver, not just his or her own personal repertoire of practice exemplars.

222. Practice exemplars from past experience in a domain, when applied to seemingly disparate, atypical problems, act as generative metaphors. "When the two things seen as similar are initially very different from one another, falling into what are usually considered different domains of experience, then *seeing–as* takes a form that I call 'generative metaphor.'" SCHON, *supra* note 5, at 183–84. *See* LAKOFF, *supra* note 16, at 537–39; JOHNSON, *supra* note 16, at 15; Brooks, *supra* note 98; Kuhn, *supra* note 98.

When composed of longer sequential accounts, practice exemplars act as generative narratives. "The typical form of framing experience (and our memory of it) is in the narrative form ...." BRUNER, *supra* note 16, at 56. Bruner's thesis is confirmed by courtroom studies about the deliberative processes of jurors who construct their understanding of a trial around narrative structures rather than around the abstract theory proposed by jury instructions. *See, e.g.*, Nancy Pennington & Reid Hastie, *The Story Model for Juror Decision Making, in* INSIDE THE JUROR: THE PSYCHOLOGY OF JUROR DECISION MAKING 192 (Reid Hastie ed., 1993).

Like pattern emergence, intuition of similarity of present problem to past exemplar is always psychologically prior to any abstract theoretical criteria of similarity. *See* Kuhn, *supra* note 98, at 472–77 (discussing a child learning to distinguish swans, ducks, and geese); MARGOLIS, *supra* note 34, at 37–39 (describing the patterned recognition of Lincoln's face in a blurred grid of blocks).

223. SCHON, *supra* note 5, at 138.

224. *See id.* at 68.

225. I prefer the metaphor of cognition/reflection-in-action over Schon's reflection-in-action because it suggests both unconscious cognition and conscious reflection in our present

processes and conscious "reflective conversation with the situation,"[226] rather than any *required* post-mortem dialogue with an educator. Varela, Thompson, and Rosch argue for mindfulness-of-the-present as the metaphor of cognitive enaction. Although they urge that some of that mindfulness be directed towards the surface flow of ideas, their formulation also emphasizes *awareness* and *open-ended reflection in experience* itself.[227]

Not much can be said about present, subconscious processes except to emphasize their predominance and to acknowledge their role in pattern emergence, similarity judgments, and metaphor. However, the second aspect of artful practice is the adept's willingness to frame and reframe the problem and to reflect on the consequences of that reframing "through a web of moves, discovered consequences, implications, appreciations, and further moves."[228] During this conscious investigation, the situation "talks back."[229] In this "reflective dialogue" with the situated problem, the practitioner is searching for coherence and congruence, for a sense of efficacy in her own interpretative order, and for a sense of keeping the inquiry going and avoiding premature closure.[230] In this view of cognition/reflection, it is not that Theory and Reflection have no place—they can and do sensibly take place before-the-fact to reframe one's role[231] or to unlearn and improve one's tacit understandings.[232] And, as discussed above and even more extensively below, they may be used after-the-fact to extract themes and lessons for future engagements. But the most important location of cognition/reflection, in fact the unavoidable locus of reflexivity,[233] is in-action, as engaged cognition, using memorable exemplars and reconstructable, provisional coherences as interpretative resources for the present dilemma.

Research supports the thesis that conscious reflection-in-action can, in certain circumstances, inhibit and *countermand* some of the undesirable momentum of *subconscious processes*.[234] The problem of subconscious processes is not simply that they are performed without awareness. The

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engagements. Little that is instructive can be said about the processes of subconscious cognition except that they predominate.

226. SCHON, *supra* note 5, at 268; *see* SCHON, *supra* note 2, at 26–31.

227. VARELA ET AL., *supra* note 16, at 27.

228. SCHON, *supra* note 5, at 131.

229. *Id.* at 132. "It is this ensemble of problem framing, on-the-spot experiment, detection of consequences and implications, back talk and response to back talk, that constitutes a reflective conversations with the materials of a situation—the designlike artistry of professional practice." SCHON, *supra* note 2, at 158.

230. *See* SCHON, *supra* note 5, at 135–36.

> [T]he inquirer is willing to step into the problematic situation, to impose a frame on it, to follow the implications of the discipline thus established, and yet to remain open to the situation's back-talk. Reflecting on the surprising consequences of his efforts to shape the situation in conformity with his initially chosen frame, the inquirer frames new questions and new ends in view.

Id. at 269.

231. *Id.* at 274.

232. "A practitioner's reflection can serve as a corrective to overlearning." *Id.* at 61.

233. "Reflexivity" is "our capacity to turn around on the past and alter the present in its light, or to alter the past in light of the present." BRUNER, *supra* note 16, at 109. Not only is this reflexivity a natural feature of human cognition, it is one of its two universals. *Id.*

234. "[A]n important function of conscious control is to oppose unconscious influences." Larry L. Jacoby et al., *Lectures for a Layperson: Methods for Revealing Unconscious Processes*, *in* PERCEPTION WITHOUT AWARENESS: COGNITIVE, CLINICAL, AND SOCIAL PERSPECTIVES 81, 84 (Robert F. Bornstein & Thane S. Pittman eds., 1992).

problem is that we may not be aware of their influence and thus be unable to assess their pernicious impact on current decisions and move to consciously counteract them when appropriate.[235] A perfect and compelling example of the need to consciously monitor the subconscious is found our pervasive learned cultural biases such as racism, sexism, and homophobia. Not only are these prejudices frequently "primed" by an elaborate array of nearly invisible, immediate cultural messages, they have also been constantly constructed and reconstructed; they have become "chronically accessible social constructs."[236] We subconsciously "call on" these recent primings and chronic constructs when interpreting otherwise ambiguous social situations. For example in one set of experiments, "an ambiguously aggressive act was seen as more hostile when performed by an African-American than when a white was the perpetrator—and this was true of both African-American as well as white perceivers."[237] Fortunately, additional research shows that people can counteract the social judgment effects of their prejudices *if* they are aware of the potential effects of those prejudices and *if* their values or commitments so dictate.[238] Although the case for conscious opposition to the subconscious is most obvious in the case of such stigmatizing social biases, it is also apparent in other circumstances where evolving understandings (or even theories with a small-t) are improvements over subconscious intuitions and heuristics.

3. Reflection-and-Theory-After-the-Fact

Having repositioned Theory as a malleable, constructable, and exemplified resource and having centered most of cognition/reflection as a conscious and unconscious dialogue with a *present* dilemma, it is time to return to Reflection-after-the-fact, the conventionally privileged place of Reflection, and to Theory-after-the-fact, the alleged product of such reflection.[239] Some radical skeptics doubt that Theory and Reflection play any meaningful role in cognition.[240] In my view, however, there is little doubt that conscious

235. "Subliminality of stimulus presentation, therefore, is important not because of the subliminality per se but because one cannot be aware of the influence of a subliminally presented stimulus." Bargh, *supra* note 50, at 237.

236. In addition to primed, temporary, subliminal constructs, "People can and do develop *chronically accessible* social constructs from frequently and consistently applying them to understand their own and others' behavior." *Id.* at 242.

237. *Id.* at 243–44.

238. *Id.* at 244–45. Unfortunately, monitoring for racism is not always effective in reaching the second and third level of biased judgment. For example, in another experiment, Bargh found that subjects showed "stereotypic ratings and impression of the target not as a function of the target's sex *but as a function of the sex-type of the target's behavior.*" *Id.* at 246. Likewise, careful "monitors" will have trouble figuring out how much to calibrate their judgments. Since the judgment effects of bias are largely unconscious, efforts as correction does not know "how far to go" to undo the effects of bias. *Id.* at 250.

239. All conscious reflection is at least slightly after the fact as the spotlight of awareness turns on the products of the subconscious. In this subsection, I am not talking about this nearly simultaneous cognitive engagement with one's nearly present thoughts and deeds, but rather the measured, delayed reflection-after-the-fact touted by educators as the way to draw lessons after the heat of the battle.

240. Certain theorists are radically skeptical about the accuracy and reach of self-reflectiveness even on the modest terms. For example, Stanley Fish doubts both the possibility and utility of critical self–consciousness because of our inability to attain any meaningful reflective distance outside of the historical situation and heuristics of our captivating interpretative communities. *See, e.g.*, Stanley Fish, *Critical Self-Consciousness, or Can We Know What We Are Doing?*, *in* DOING WHAT COMES NATURALLY: CHANGE, RHETORIC, AND

reflection-after-the-fact plays a significant part in our digestion of experience; it clearly comprises much of our conscious rumination after functional performances—how did I do, what did I do right, what did I do wrong? Equally, there is little doubt that we have a need for and preference for coherence, or theory, which thereafter retains some role in our future engagements. As ubiquitous features of our cognitive life, reflection-and-theory-after-the-fact need further exploration to see what parts they may reliably play in ecological learning.

a. Narrative Coherence

One of the dangers in under-emphasizing reflection-after-the-fact is that it risks minimizing the pervasive degree to which people try to reach *narrative coherence* in their world through both internal and external dialogue. One of the most fascinating studies of the development of meaning-making is the observation of Emily whose private soliloquies were recorded between the age of 1 and 1/2 and 3 years.[241] As Emily talked to herself and her stuffed animals "[s]he was not simply reporting; she was trying to make sense of her everyday life. She seemed to be in search of an integral structure that could encompass what she had *done* with what she *felt* with what she *believed*."[242] Bruner proposes that Emily's primary search, both linguistically and cognitively, was for narrative coherence: she wanted to get the sequence of events correct; she wanted to distinguish between what was conventionally canonical in her world and what was exceptional; and she wanted to establish her own sense of perspective, elaborating her feelings and beliefs.[243] Once she got the story

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THE PRACTICE OF THEORY IN LITERARY AND LEGAL STUDIES 436 (1989). Fish describes the unabated pursuit of critical reflectiveness, even by leftists and post-modernists, as "anti-foundationalist theory hope." *Id.* at 466. Fish does not so much propose that reflection does not occur—it clearly does—but he does argue that it is always situationally bound as one of the practice/discourse/interpretative forms within the domain itself. This permits him to argue that even anti-professionalism, an allegedly critical stance, is in fact a required, justificatory rationalization within a professional domain. Stanley Fish, *Anti-Professionalism*, *in* DOING WHAT COMES NATURALLY: CHANGE, RHETORIC, AND THE PRACTICE OF THEORY IN LITERARY AND LEGAL STUDIES 215 (1989).

Fish's anti-self-consciousness/anti-theory thesis has been subjected to a scathing, if respectful, critique by Steven Winter. Winter, *Uses of Theory*, *supra* note 23. Winter challenges three strands of Fish's analysis: that theory cannot influence practice; that theory cannot inform change, and that reflectiveness is illusory and pointless. Although Winter approves of Fish's most fundamental premise, that human cognition is always historically grounded and culturally situated, *id.* at 645, he rejects the objectivist container metaphors used by Fish which totalize theory and practice into mutually exclusive categories thereby negating the possibility and utility of critical reflection. Instead, Winter posits a less bounded world, "[t]he rational world is characterized by probabilities, continua, fluidities, and indistinct shades. Choices abound, and definitional certainties are hard to come by." *Id.* at 653. In such a world, Winter finds a modest role for theory with a small-t—namely, to explore " the magic chasm" of "nuances and contingencies." *Id.* at 657. In such a rational world, imagination and "situated self-consciousness" challenge and transform prevailing cognitive paradigms enabling change in social relations and social arrangements. *Id.* at 664–691.

Reflection and theory need not take the world only as it is—they can "possibilize" the world as well. ZANER, *supra* note 25, at 165–80. "[T]he core form of human freedom is being able to free-oneself-from the actual and thus being able to free-oneself-for the possibly otherwise." *Id.* at 176.

241. *See* BRUNER, *supra* note 16, at 87–94 (discussing RUTH WEIR, NARRATIVES FROM THE CRIB (1962)).

242. *Id.* at 89.

243. *Id.* at 90–93.

"right," Emily proceeded to explore breaches in her narrative events as problems to be solved retrospectively through a search for explanations. Having searched for explanation, Emily proceeded to imagine the possibilities of doing something differently next time.[244] Thus, in the ruminations of children, we find the foundations for adult reflexivity. Although the scope and specificity of situational problems might change, the basic urge to make events coherent and to resolve their breaches through reflectiveness does not.[245]

b. Reflection as the Ground for Reverberating Explanation

A second reason not to forego reflection-after-the-fact, including reflective dialogue with others, concerns the centrality of speech in social interactions as part of the speech/act/context triad. As social beings, we try both to convey meaning to others and to interpret their reciprocal efforts. In doing so, we do not rely on the mute power of the situational action as the only means of communication. We use conscious reflection and language to help *explain* our actions and our intentions with respect to those actions.[246] Because of our shared symbolic systems and interpretative strategies, we can "agree" about what is canonical or conventional in our actions and negotiate that which is out of the ordinary.[247] Thus, open dialogue serves to focus one's attention on the story of one's deeds in an attempt to make sense of these deeds through explanation.

The explanations (or themes or theories) that one advances take on a *life of their own* and reverberate in the future. Although it is unlikely that we can provide real, i.e. cognitively accurate, narratives or explanations of our choices or decisions (given cognition without awareness), we do persist in constructing such explanations on our own or when asked to do so. These explanations reanimate our thinking, creating a "longer-term effect of becoming the *real* reasons for subsequent decisions."[248] The correspondence from after-the-fact-reflection to future truth is not one-to-one, but the well-told stories and practical theories derived from experience do become core resources in our

244. *Id.* at 93–94.

245. The nighttime ruminations of children gradually become internalized as the running, reflective dialogue we have with ourselves. Although this dialogue is not all that we call consciousness, it is much of what we call reflectiveness and it continues its original function of helping us to make sense of our world. *See* LEV VYGOTSKY, THOUGHT AND LANGUAGE 32–33 (Alex Kozulin ed., MIT Press 1986) (1934).

246. Carl Bereiter, *Implications of Connectionism for Thinking About Rules*, EDUC. RESEARCHER, Apr. 1991, at 10, 14 (we justify ourselves internally and externally). We risk the mistake of letting experience "speak for itself" if we ignore the fact that people use "speech/acts," a combination of action and language in most of their social interactions, as a way to try to make their interactions meaningful to others in a certain way. *See* BRUNER, *supra* note 16, at 81.

247. "[T]here are agreed-upon canonical relationships between the meaning of what we say and what we do in given circumstances, and such relationships govern how we conduct our lives with one another. There are procedures of negotiation, moreover, for getting back on track when these canonical relations are violated." BRUNER, *supra* note 16, at 19.

248. Pittman, *supra* note 48, at 290. Because these explanations take on a life of their own, because they may well impact future choices, it becomes terribly important to take them quite seriously. This responsibility to take seriously the narrative or explanation itself is analogous to the new psychotherapy which deals much less with the archival retrieval of authentic life history and much more with constructing a satisfactory story of one's life, a life with "coherence, livability, and adequacy." *See* BRUNER, *supra* note 16, at 112 (citation omitted).

future engagements.[249]

c. Reflection on Acculturation

A third reason not to give up on after-the-fact reflectiveness, especially with respect to the process of professional socialization, is that reflectiveness is unavoidable when confronting what is novel and non-canonical in one's experience, including the *process of acculturation* itself. Just like infants, we concentrate our attention on the offbeat and problematic while leaving the expected and the usual unmarked. The terrain of unfamiliarity is particularly steep when the novice is first entering a social practice domain. Like Emily who was navigating the social world for the first time, the novice will benefit from striving for coherence through the medium of dialogue, either internal or external.[250] Although the compelling need for reflectiveness may decrease as the novice maps the canonical within her world of expertise, if she hopes to challenge, change, or transcend what is conventional in her new world, she will have to reflect. She will have to be thoughtful about the degree of her commitment to the "way of life" within her profession and to its conventional practices and ideologies. Although truly "radical reflection" will be difficult,[251] that does not mean that reflection is any the less crucial especially where the present distributions of power, material benefit, and cultural prestige are so unequal in our society and in our profession.

III. CONCLUSION

A. Law School Support for a Theory of Ecological Learning: Neo-Pragmatism, Feminism, and Clinical Method

Although the sources I have discussed have been largely ignored within the legal academy, there is some support for a theory of ecological learning from three diverse law school groups: neo-pragmatists, feminists, and clinicians. Each of these have championed the call to context and the experiential lessons it imparts providing additional support for a theory that law students might learn well through immersion in the performance dilemmas of authentic practice settings.

Although legal *neo-pragmatism* does not yet focus its theory on education *per se*, it does suggest that we abandon the sterility of abstract categories and the lock-step of linear deductive reasoning for the more contextual and concrete reasoning of situated practitioners.[252] Rather than drawing on a single,

249. The correspondence is not one-to-one, because the story or explanation is always reconstructed in light of current needs as well as past legacies.

250. One of the special values of dialogue with others at this point is to open up the interpretative possibilities for the novice and for the novice to hear from the adept what is conventional within the domain and what is not.

251. BRUNER, *supra* note 16, at 29 (citing CHARLES TAYLOR, SOURCES OF SELF: THE MAKING OF MODERN IDENTITY (1989)).

252. *See, e.g.*, Farber & Sherry, *supra* note 23; Daniel A. Farber, *The Inevitability of Practical Reason: Statutes, Formalism, and the Rule of Law*, 45 VAND. L. REV. 533 (1992); Margaret Jane Radin, *Diagnosing the Takings Problem, in* COMPENSATORY JUSTICE: NOMOS XXXIII, at 248 (John W. Chapman ed., 1991) [hereinafter Radin, *Diagnosing the Takings Problems*]; Steven D. Smith, *The Pursuit of Pragmatism*, 100 YALE L.J. 409 (1990) (arguing that pragmatism is innocuously platitudinous but refreshingly exhortational); *Symposium on the Renaissance of Pragmatism in American Legal Thought*, 63 S. CAL. L. REV. 1569 (1990);

powerful referent (Theory with a capital T) as the source of meaning and justification, pragmatism, like contextualism, draws on a multifaceted web of contextual meaning[253] and a historically-based, consensual way of life.[254] Margaret Jane Radin is one of the principal and most eloquent proponents of legal neo-pragmatism. She compares pragmatism to feminism, finding that both contain "a commitment against abstract idealism, transcendence, foundationalism, and atemporal universality; and in favor of immanence, historicity, concreteness, situatedness, contextuality, embeddedness, [and] narrativity of meaning."[255] She emphasizes that pragmatism is a "practice of situated judgment in light of both partial principles and the unique particularities of each case."[256] Pragmatism relies on the powerful, evocative power of concrete detail in a functional context to motivate and inform human judgment.[257]

Margaret Jane Radin, *The Pragmatist and the Feminist*, 63 S. CAL. L. REV. 1699 (1990) [hereinafter Radin, *The Pragmatist and the Feminist*]; Steven J. Burton, *Law as Practical Reason*, 62 S. CAL. L. REV. 747 (1989); Margaret Jane Radin, *Reconsidering the Rule of Law*, 69 B.U. L. REV. 781 (1989); Thomas C. Grey, *Holmes and Legal Pragmatism*, 41 STAN. L. REV. 787 (1989); Margaret Jane Radin, *The Liberal Conception of Property: Cross Currents in the Jurisprudence of Takings*, 88 COLUM. L. REV. 1667 (1988) [hereinafter Radin, *The Liberal Conceptions of Property*]; Frank I. Michelman, *The Supreme Court 1985 Term—Foreword: Traces of Self-Government*, 100 HARV. L. REV. 4 (1986) (referring to republicanism as well as pragmatism).

253. "[T]o use an image common in discussion of practical reasoning, justification is thought to be more of a web than a tower, drawing on the coherence of many sources, rather than building on a single unified foundation." Farber & Sherry, *supra* note 23, at 820. "The quality of one's insights about the arrangements that promote substantive justice depends on studying law, including doctrine, in the colorful, textured, and tangled web in which it lives." Goldfarb, *supra* note 83, at 741.

254. The recent turn to pragmatism is, of course, a re-return. We have had advocates of practical reasoning at least since Aristotle, and early 20th century jurisprudence had its full share of legal pragmatists as well. For a fuller history of early legal pragmatism and its roots, *see* Grey, *supra* note 252. Karl Llewellyn articulated a state-of-the-art understanding of "situation sense" in much of his writing. *See, e.g.*, KARL N. LLEWELLYN, THE COMMON LAW TRADITION: DECIDING APPEALS 268–85 (1960); KARL N. LLEWELLYN, THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY 2 (1960) ("We have learned that the concrete instance, the heaping of concrete instances, the present vital memory of a multitude of concrete instances, is necessary in order to make any proposition, be it rule of law or any other, *mean* anything at all." (emphasis in original)); BENJAMIN N. CARDOZO, THE NATURE OF THE JUDICIAL PROCESS (1921). Oliver Wendell Holmes, as well, is presently portrayed as a founding legal pragmatist. Grey, *supra*. Likewise, neo-pragmatism has its non-legal champions as well. *See, e.g.*, HILARY PUTNAM, REALISM WITH A HUMAN FACE (1990); RICHARD RORTY, CONSEQUENCES OF PRAGMATISM (1982).

255. Radin, *The Pragmatist and the Feminist*, *supra* note 252, at 1707. To Radin "[T]heory is immanent and evolving; its development is interdependent with practice." Margaret Jane Radin, *Lacking a Transformative Social Theory: A Response*, 45 STAN. L. REV. 409, 413 (1993). Professor Radin is by no means the only feminist who might be considered a pragmatist. *See, e.g.*, Elizabeth Schneider, *Particularity and Generality: Challenges of Feminist Theory and Practice in Work on Woman Abuse*, 67 N.Y.U. L. REV. 520, 527 (1992) ("[F]eminist theoretical work must simultaneously be more richly 'particular' in documenting women's experiences, as well as more 'general,' linking violence against women to women's subordination within society and to more general social problems of abuse of power and control."); Katharine T. Bartlett, *Feminist Legal Methods*, 103 HARV. L. REV. 829 (1990); Martha Minow & Elizabeth Spelman, *In Context*, 63 S. CAL. L. REV. 1597 (1990); Goldfarb, *supra* note 188.

256. Radin, *Diagnosing the Takings Problem*, *supra* note 252, at 270.

257. Cognitive research confirms the power of the concrete to energize human cognition.

> [C]oncrete, emotionally interesting information has greater power [than abstract information] to generate inferences because of the likelihood of such information's calling up "scripts" or schemas involving similar information. The inference then proceeds along the well-worn lines of the previously existing

"Pragmatism is essentially particularist, essentially context-bound and holistic; each decision is an all-things-considered intuitive weighing."[258] Thus, pragmatism is a reflective process consisting of a resonance between multiple plausible abstractions—between theory[ies]—and multi-faceted, detailed, particularity—the specific case. As a consequence of this resonance, the particular reconstructs and animates the abstract at the same time that the abstract formulates and transforms the concrete.[259]

In harking to context and situatedness, neo-pragmatism draws attention not only to multi-dimensional interpretation but to the social practices which constitute, inform, and ultimately illuminate a social context and a particular legal problem.[260] The consensual social practices which construct the social context also help construct the imperfect but somewhat determinate solution. How things are done—the social conventions, interpretative conventions, and professional conventions of a particular social context—provide the decisional template for the "novel" legal problem. Because social practices, like interpretative practices, display tension, uncertainty, and contradiction, solutions are particular, idiosyncratic, and only provisionally determinate.[261]

Emphasizing context and validating everyday experience is not limited to neo-pragmatism;[262] it is also a central component of *feminist theory* as well.

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script. Abstract information is probably less rich in potential connections to the associative network by which scripts can be reached.

Moore, *supra* note 23, at 290 (citing Nisbett et al., *Popular Induction: Information is not Necessarily Informative*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 112 (Daniel Kahneman et al. eds., 1982); RICHARD E. NISBETT & LEE ROSS, HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT 43–62 (1980)).

258. Radin, *The Liberal Conception of Property*, *supra* note 252, at 1680.

259. Faber & Sherry, *supra* note 23, at 820. This analysis focuses on only one of the two principal arguments of neo-pragmatism, the principle of situated reasoning. The second principle concerns the standard to be applied in judging the *outcome* of reasoning. Instead of insisting on optimality against some pre-set, foundational standard, neo-pragmatism suggests that a theory (with a small-t) is good enough if its effects are useful—if it moves the ball forward. *See* Grey, *supra* note 252, at 798. This meaning of pragmatism is consistent with enactive contextualism where the "histories of coupling [between cognition and environment] are not optimal; they are, rather, simply viable." VARELA ET AL., *supra* note 16, at 205. Varela, Thompson, and Rosch argue that the fact that cognition is satisfied with the "good-enough" is fruitfully compared with the change in evolutionary theory from "survival of the fittest" to "natural drift" and "*satisficing*"(taking a suboptimal solution that is satisfactory). *Id.* at 185–205; *see supra* notes 183–84 and accompanying text.

260. It is important to emphasize that true pragmatism is a *practice* not an idealized understanding or merely a hermeneutic theory. Schlag, *supra* note 83, at 1223 n.110. "[T]he pragmatists' first thesis [is] that knowledge is essentially contextual, situated in habit and practice ...." Grey, *supra* note 252, at 799.

261. Radin, *Lacking a Transformative Social Theory*, *supra* note 255, at 422 n.42. Pragmatism in general and Radin in particular have been criticized for seeking the middle ground between indeterminacy and formalism, and in the process both ignoring and exalting power and deemphasizing resistance, struggle, and change. *See* Stephen J. Schnably, *Property and Pragmatism: A Critique of Radin's Theory of Property and Personhood*, 45 STAN. L. REV. 347 (1993). According to Schnably, consensus is often the opaque surface appearance of raw power; underneath that surface, differing interests, individual resistance, and transformative group struggle occur. *Id.* at 361–62. From the formalist's direction, pragmatists have been criticized for being nihilistic, subjectivist, and overly indeterminate. David E. Van Zandt, *An Alternative Theory of Practical Reason in Judicial Decisions*, 65 TUL. L. REV. 775 (1991); Nancy Levit, *Practically Unreasonable: A Critique of Practical Reason* (book review), 85 NW. U. L. REV. 494 (1991).

262. Two additional models of legal education besides feminism and the clinical method strongly suggest the centrality of contextual practice-based experience for law students. The first

> The hallmark of feminist practical reasoning is its emphasis on context: on understanding the intricate details of the complex human situations which give rise to legal or other conflicts and, with the aid of prior wisdom and experience, reasoning from those specific conflicts to resolutions tailored to respond to the particularities of the situation.[263]

There is a powerful congruence between the contextual, experiential, relational, and reflective features of contextualist/experiential learning and the same features in the feminist perspective.[264] Like pragmatism, feminist theory "emphasizes the value of direct and personal experience as the place that theory should begin .... For feminists, theory is not 'out there,' but rather is based on concrete, daily, and 'trivial' experience of individuals, and so emerges from ... shared experience ...."[265] The shared experience focus of feminism emphasizes the centrality of connection and dialogue, two features emphasized more in feminism than in neo-pragmatism.

In their common emphasis on context, situatedness, community practice, personal experience, and multi-variant reasoning, both neo-pragmatism and feminism support an educational theory that urges immersion in a contextual ecology. The learner cannot feel the pulls and pushes of context unless she is in context. She cannot do practical reasoning unless she is situated and attending to the details of the concrete. She cannot observe, appreciate, and emulate the practices and procedures of an expert community unless she is exposed to that community. By implication anyway, a theory of ecological learning already receives a great deal of support within the neo-pragmatist and feminist wings of the legal academy.

What is implicit support among neo-pragmatists and feminists is explicit for *clinicians* who have structured most of their pedagogy around the altar of contextual experience. Gary Bellow, one of the founders of clinical legal education, was also one of the first to see the virtues of clinical methodologies primarily in terms of contextualism.[266] Bob Dinerstein, recent chairperson of the Clinical Section of the AALS, has gone so far as to observe "Clinical educators are all contextualist now, or so it seems."[267]

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model is what Dean Mudd calls "performance-referenced education." Mudd, *supra* note 23, at 197. The second model is what Professors Tomain and Solimine call "a lawyering process" model which "makes students aware that becoming a lawyer means that legal doctrine is applied through the use of lawyering skills in various legal contexts." Joseph Tomain & Michael Solimine, *Skills Skepticism in the Postclinic World*, 40 J. LEGAL EDUC. 307, 308 (1990).

263. Bartlett, *supra* note 255, at 849 (reasoning from context allows a greater respect for difference); *see* Cynthia R. Farina, *Getting from Here to There*, 1991 DUKE L.J. 689, 707 ("Feminist theory typically understands knowledge as contextual—that is, as embedded in situation and experience ....").

264. Goldfarb, *A Theory-Practice Spiral*, *supra* note 188, at 1637–41, 1667–74.

265. Elizabeth Schneider, *The Dialectics of Rights and Politics: Perspectives from the Women's Movement*, 61 N.Y.U. L. REV. 589, 601–03 (1986); *see* Anne C. Dailey, *Feminism's Return to Liberalism*, 102 YALE L.J. 1265, 1274 (1993) (book review) ("[F]eminist theory strives to remain anchored in the lived experiences of women.").

266. *See, e.g.*, Bellow, *On Teaching the Teachers*, *supra* note 169, at 387–88 ("Lawyer's decisions in a variety of roles and contexts are the central sources of meaning").

267. Dinerstein, *supra* note 120, at 719. Dinerstein focuses in particular on the impact of race, gender, sexual orientation, and class as critically important features of context. *Id.* at 721–22. For a sample of articles confirming Dinerstein's claim, see McDiarmid, *supra* note 171, at 287 ("We cannot be said truly to understand anything until we understand it in context and in complexity."); Alfieri, *supra* note 173, at 9 ("the thickness of the lawyering process demands contextual grounding"); Goldfarb, *supra* note 83, at 742 (urging "'experiential deconstruction'—

Proponents of externships, where contextual realities are maximized, are even more insistent about contextual authenticity. These clinicians assert that legal externships and other practice-based legal work are superior in contextual realism to any other form of legal education by exposing students to: (1) a wide spectrum of legal practice settings, including highly specialized areas of practice,[268] (2) a wide variety of legal tasks,[269] and (3) the myriad economic,[270]interpersonal, intrapsychic,[271] and ethical constraints[272] that impact the legal practitioner. According to these proponents of a richer reality, even in-house clinics can not duplicate the pressures, constraints, and opportunities that most lawyers experience in real practice settings[273]—demands relating to making a living, maintaining client relations, vying with colleagues, advancing professionally, selecting sub-optimal levels of preparation and more.[274] As expected then, the most adamant law school support for the contextualist/experientist features of ecological learning comes from those who facilitate learning in the most authentic practice contexts.

B. Summarizing Initial Steps in a Theory of Ecological Learning

At this point, I have tried to take three giant steps in constructing a theory of ecological learning, drawing support from outside and inside the legal academy.[275] First, I have argued at greatest length that cognition is enactive and

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the exploration of an historically specific context centered on how a person experiences society and the legal system and feels their impact in his or her daily life"); Janus, *supra* note 171, at 470–74 (using the idea of contextual integration as a jurisprudence of lawyering).

268. Rose, *supra* note 170, at 103; Motley *supra* note 21, at 222; Laser, *supra* note 4, at 264 n.104.

269. "The caseload and client population are usually more diverse, presenting a wider choice of analytical problems and personality profiles." Condlin, *supra* note 170, at 71.

270. "[L]imitations on resources are powerful constraints on lawyer learning ... and are boundaries within which students must learn to operate." *Id.*; *see* Laser, *supra* note 4 (urging use of fee generating clinics).

271. "Students must ... learn how to handle the personal and interpersonal pressures that only a practice setting can provide." Michael Meltsner, *Healing the Breach: Harmonizing Legal Practice and Education*, 11 VT. L. REV. 377, 379 (1986).

272. "[R]eality based learning *in the field* ... introduces [students] to ... ethical concerns that cannot be addressed in-house, except in the abstract." Stickgold, *supra* note 167, at 315; *cf.* Donald Zillman & Vickie Gregory, *Law Student Employment and Legal Education*, 36 J. LEGAL EDUC. 390, 402 (1986).

273. Compared with in-house clinics, externship programs offer unparalleled and undiluted reality. "Placement [in externships] can avoid the artificial practice environment that is often created when students in in-house programs work on only a few cases each semester." Maher, *supra* note 21, at 544. Juggling limited case loads, students "may not learn the skills needed to balance the competing demands of practice or even that such balancing is necessary." *Id.* at 588.

Not only is the in-clinic case load frequently unrealistic, but the extent of hand-holding in supervision can also be unrealistic, and, some would argue, counterproductive. *See id.* at 545. Although there is always the risk of self-interest in the statements of externship advocates about the benefits of student-centered, practice-based learning, there is little doubt that "[t]oo much direct supervision by a faculty member during a clinical experience may be destructive to the objective of developing student autonomy." *Id.* at 566.

274. *See id.* at 547 n.29 (citing Elson, *Talking on the Pros and Cons of Externships at the Midwestern Clinical Teacher's Conference April 11, 1987*, AALS SEC. ON CLINICAL LEGAL EDUC. NEWSL., Sept. 1987, at 10; Motley, *supra* note 21, at 223; Laser, *supra* note 4, at 286.

275. Important steps remain for my next article, mainly to people the world of context and experience with an autonomous Self, with an interpersonal ecology of legal workers, and with the novice/expert dyad. Brook K. Baker, *Autonomy, Connection, and Expertise in the Workplace: Finalizing a Theory of Ecological Learning* (1994) (on file with the author). This

contextual and therefore that context makes all the difference especially when one is seeking to join an expert domain such as lawyering. Second, I have analyzed our experience of experience, or more to the point, how it is that we learn from experience. Although competence is not the automatic product of such experience, the likelihood of true experiential learning is enhanced when the sense of valued and functional engagement with authentic dilemmas is maximized. Third, I have reconstructed some of the prevailing assumptions about the place and value of Reflection and Theory. In the process of dethroning Theory and Reflection, I have not removed them from the scene, but rather relegated them to a more modest, but still important role away from the preface and postscript of experience and into the heart of experience itself. The proper role of Theory and Reflection is catalyzed and realized primarily in the moment of contextualized, real experiences in a social practice domain although both may also help us reach some degree of coherence before- and after-the-fact. All of these steps have as their goal to explode the school- and educator-centered container and conduit metaphors which have led legal educators and legal regulators, via *The MacCrate Report*, to thoroughly devalue the contextualized learning experiences of our students.

Assuming the validity of these first steps in a theory of ecological learning, with its emphasis on situated context and experiential performance, then law students must be exposed to the multi-faceted real world context of practicing lawyers in order to learn anything about the pragmatic interpretation, uncertain predictions, strategic planning, and actual performances of lawyers. The context of the law school cannot be the context of the law office[276]—the law school is marked by absences, absences which are critical

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peopling will again cause me to question the timing, place, and form of interaction between expert/supervisor and the student that might facilitate her process of acculturation and maximize the likelihood of her development of genuine understandings. I conclude, like Gardner, that an important setting for ecological learning is in apprenticeship-like settings under the tutelage of capable, though not necessarily education-focused, practitioners.

After finishing my construction of a theory of ecological learning in my second article, I also explore historic and current challenges to a theory of ecological learning. The challenge which may present the greatest difficulty is the imperative to enhance students' ability to be critical about the law and its institutions, an imperative which may be hard to ensure in unsupervised work settings. Stated bluntly, do the pressures of acculturation overwhelm the necessity of critique? Though this danger is real, it is not much different from the same problem which plagues legal education within the Academy.

As you can undoubtedly anticipate, I ultimately conclude that *The MacCrate Report* is wrong and that the ubiquitous experience of law students in seeking practice experience during law school must be validated and even encouraged. That conclusion will not resolve all of the questions about a newly emerging theory of ecological learning, but it should serve to encourage a paradigmatic shift in our understanding about how our students learn and therefore how we should teach.

A third article, co-authored with others, will undertake an empirical investigation of students' co-operative legal education experiences at Northeastern. Daniel Givelber et al., *Ecological Learning or Educational Inoculation: A Historical and Empirical Study of Internship Experience* (1994) (on file with the author). That study will both validate many of the predictions of a theory of ecological learning and differentiate those features of a practical work experience which might describe a better or less good learning experience.

276. I do not want to suggest that schools lack "context" or that they don't produce "experience." Law school, case book readings, study groups, note-taking, and classroom discussions interweave to structure a law school context and a law school culture. The problem is not that law school is theoretical and that lawyering is concrete or that the intuitions of lawyers differs from the abstractions of law professors. The problem is whether the legal novice, in school or at work, is engaged in a meaningful activity and whether she is motivated to solve

to the non-ideal but practical judgments of lawyers: economic self-interest, specialization and expertise, clients and adversaries, indeterminate facts, hostile and friendly witnesses, judges and juries, local precedent and local custom, organizational memory, professional stereotypes, technological change, and on and on. The context of practice gives rise to its own gestalt coherence and calls forth its own pluralistic set of interpretations, choices, and actions. These contextual emanations cannot be completely replicated away from the authentic settings of practice nor out of the pages of a casebook.

If traditional law school can be summarized as the laboratory for focusing on doctrinal formalism and grand Theory, then practice-based settings can be seen as the laboratories for practical experience and practical reasoning, for the application of uncertain law to less certain fact, and for the performances of lawyering. Drawing on his or her growing accumulation of experiences, war stories, lawyering theory/themes, and local craft lore, the fledgling lawyer diagnoses the concrete problem seeking a flexible, dynamic, contextual, and pragmatic solution. She repeats old tasks and ventures new ones as the means for solidifying and expanding her appreciation of the contours of her domain. Despite this focus on pragmatic, situational reasoning and gets-your-hands-dirty-experience, the concrete setting of practice, vivid and detailed, is a place to engage in *both* kinds of legal thinking, the "paradigmatic" or top-down thinking which is most rewarded in law school and the "narrative" or bottom-up mode which takes "account of the context in which behavior occurs rather than focusing only on general tendencies."[277] Since pragmatic or narrative meaning is used to interpret and understand stories about human intentions, human roles, and human events in the context in which they occur,[278] law students can learn about the situated roles, judgments, and actions of lawyers, judges, jurors, and witnesses *only* if they *experience* these human actors and human events from the inside of legal culture rather than at its fringes.

In addition to confronting the hegemony of educator-centeredness and urging the validity of contextualized experiential learning, I hope that I have also succeeded in questioning some basic assumptions in the legal academy and in clinical methodology concerning uses of Theory and Reflectiveness. Although devaluing context and experience clearly impoverishes our understanding of how people learn, equally fatal misapprehensions flaw existing understandings with respect to learning cycles and uses of Theory and Reflection. The vast bulk of cognitive research supports the view that Theory, at best, is a malleable, reconstructible resource, one that competes with others, in our present engagements. This same research supports the view that the vibrant theory of practitioners is largely encapsulated within the memorable exemplars of past practice and that analogy and metaphor predominate over rule-driven rationalism—thematic patterns and encapsulated theory direct our intuitions in deciphering a present dilemma much more than Theory as such. The net effect of these insights is that the most effective location of cognition and reflection is in-action rather than segregated to distant, less relevant locations before- or after-the-fact. Drawing on both conscious and unconscious

authentic problems of a social practice domain. *See* Lave, *supra* note 5, at 74 (a study of the ubiquity and purposelessness of world problems in the standard math curriculum).

277. Moore, *supra* note 23, at 291 (citing JEROME BRUNER, ACTUAL MINDS, POSSIBLE WORLDS 89–90 (1986)).

278. *Id.* at 292 (citing BRUNER, *supra* note 16, chs. 1–3).

processes, cognition/reflection-in-action encompasses the process by which patterns in experience and thematized pattern are used intuitively in diagnosing and solving a present dilemma. Cognition/reflection-in-action is the process by which theory becomes encapsulated within experience as practice exemplars. Cognition/reflection-in-action emphasizes cognitive engagement and dialogue with the situational dilemma, as a mechanism of cognitive pluralism and as thematic scaffolding for further cognitive development. Finally, reflection-in-action reminds us that the spot-light of concurrent reflection can countermand subconscious cultural commands and illuminate new worlds of resistance and transformation.

Despite arguing for the primacy of cognition/reflection/theory-in-action, theory-and-reflection-after-the-fact is also a ubiquitous feature of cognition, but different in kind and in function. In recognizing the ubiquity of reflexivity,[279] I am inclined to trust our students' pragmatic use of ad hoc reflectiveness and theory on the modest terms outlined above. The fact that the conscious search-light of reflectiveness can probe only so far and only a few things at a time is no reason to deny it any role whatsoever. Taking place after experience, reflection-after-the-fact emphasizes our largely conscious effort to reach internal coherence, to establish interpersonal understanding, and to resist uncritical acculturation. The thematic coherences and theory which emerge from our reflection-after-the-fact may become resources for our future engagements and correctives for our biases and ineffective heuristics. In any event, our reflections-after-the-fact take on a life of their own, meaning that we must take them seriously as students and as educators.

Nonetheless, I remain concerned that the virtues of Theory and Reflectiveness, especially educator-articulated Theory and educator-facilitated Reflectiveness, may be overstated and used to justify the continuing hegemony of legal educators. Self-consciousness is not the constant overseer of cognition but only of its surface play of images and ideas. Illusion about our ability to monitor our cognition and explain our thinking and actions, either as teachers or as students, can lead us to de-emphasize context, experience, and the more subtle, less self-conscious forms of cognition in favor of the slower, linear processes of self-conscious analysis.

Fortunately, a theory of ecological learning does not have to prescribe a single alternative of before-, during-, or after-the-fact reflection. Nor does it mandate solipsistic rumination, reflective dialogue with an educator, or subconscious, massively parallel processes only. Nor yet does it propose grand Theory or no theory at all. There are undoubtedly many moments for each form of cognitive engagement. Yet, it is important to remember that the ultimate goal of cognitive transformation and acculturation within a new social practice domain is an internal one of confronting and revising immature understandings and ineffectual, conventional understandings as well; at the same time, the acculturating professional should remain critical and active about defects in her calling. The theory of ecological learning I have explored so far reassures me that contextualized learning-from-experience is the norm—we can hardly avoid it—though we can continue to explore how to maximize the probabilities of

279. *See* BRUNER, *supra* note 16, at 109; ZANER, *supra* note 25, at 144–64. Admitting the universality of reflexivity does not mean that we all engage in it equally either in quantity or in depth.

functional experiential engagement, generative cognitive rumination, and critical social consciousness.