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Peirce and education: contemporary reflections in the spirit of a contrite fallibilist

Peirce y la educación: reflexiones contemporáneas en el espíritu de un falibilista penitente

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ABSTRACT: The author of this essay draws out some of the most important implications of Peirce's thought for the philosophy of education. In particular, he focuses on the deliberate cultivation of phenomenological attention, methodological (or heuristic) imagination, experiential realism, contrite fallibilism, and wide erudition as implications of Peirce's texts. Especially in conjunction with phenomenological attention, he develops a notion of world, but a distinctively pragmatic conception of this highly ambiguous word. Then, in connection with this understanding of world, the author makes a case for the pragmatist reconstruction (or reconceptualization) of human experience. While the received view takes experience to be inherently and invincibly subjective, the reconstructed (or pragmatist) one takes experience to be a direct, yet mediated encounter with reality. Peirce's thought drives in the direction of recognizing, in reference to education, the need for a recovery of the world and the reconstruction of experience. But it also prompts us to see just how important are a resolute fallibilism, heuristic imagination, and wide learning.

Key words: Charles S. Peirce; pragmatism; United States; education; attention; erudition; fallibilism; modernity; realism (experiential and otherwise).

RESUMEN: El autor del artículo señala algunas de las implicaciones más importantes del pensamiento de Peirce para la filosofía de la educación. Concretamente, se centra en el cultivo deliberado de la atención fenomenológica, la imaginación metodológica (o heurística), el realismo experiencial, el falibilismo penitente, y la amplia erudición como implicaciones que se siguen de los textos escritos por Peirce. De modo especial, y en relación con la atención fenomenológica, desarrolla la noción de mundo, pero desde una perspectiva distintivamente pragmática en un mundo que resulta profundamente ambiguo. A continuación, y siguiendo con esta comprensión del mundo, el autor defiende la reconstrucción (o reconceptualización) pragmatista de la experiencia humana. Mientras la perspectiva que suele asumirse entiende que la experiencia es inherente e inevitablemente subjetiva, la perspectiva reconstruida (o la pragmatista) entiende que la experiencia consiste en un encuentro directo, aunque mediado, con la realidad. El pensamiento de Peirce avanza en la dirección de reconocer, en lo tocante a la educación, la necesidad de reactivar el mundo y de reconstruir la experiencia. Pero nos lleva también ver la importancia de un falibilismo resuelto, una imaginación heurística, y un aprendizaje de amplias miras.

Palabras clave: Charles S. Peirce; pragmatismo; Estados Unidos; educación; atención; erudición; falibilismo; modernidad; realismo (experiencial y de otro tipo).

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Introduction

Of the classical American pragmatists, including G. H. Mead, C. S. Peirce was the one who, apparently, devoted the least attention to the philosophy of education. A fact about his life is likely relevant here¹. Unlike these other pragmatists, he spent only a short time as a professor at a University and that time was at the newly founded Johns Hopkins University, an institution devoted to advancing research and training researches. This fact is hardly insignificant. For all of his antipathy to so much of modern philosophy, especially Cartesian doubt as a methodological principle² and Humean nominalism as a metaphysical commitment, Peirce's own life was in outward respects more like those of Descartes, Spinoza, Locke, and Hume than those of Albertus Magnus, Thomas Aquinas, John Duns Scotus, the medieval *schoolmen* whom Peirce so deeply admired³. Even so, his philosophical writings provide a rich resource for addressing not only questions regarding discovery, knowledge, and experience but also questions concerning learning, schooling, and education. The principal aim of this brief essay is to grant (at least) a provisional plausibility to this large claim⁴. The

¹ In my judgment, the social and indeed material circumstances of a thinker's life are far from irrelevant to the interpretation or evaluation of that individual's contribution. Human thought takes shape at distinct periods of human history and, more intimately, in the actual circumstances of an individual life (cf. Ortega; also Dewey). In particular, Peirce's contribution to our understanding of education needs to be seen in the context of his life, one in which he was both inside and outside the university. His ultimate status in this regard might be characterized as «an inside outsider». Such a status often carries, as it did in Peirce's case, personal disadvantages; but it can also grant epistemic advantages. It might even be the case that Peirce was in a rather ideal position to understand and assess the strengths and weakness of higher education in the United States in the second half of the nineteenth century and the opening decades of the twentieth.

² «We cannot begin with complete doubt. We must begin with all the prejudices which we actually have when we enter upon the study of philosophy. These prejudices are not to be dispelled by a maxim, for they are things which it does not occur to us *can* be questioned. Hence this initial [and universal] skepticism will be a mere self-deception, and not real doubt; and no one who follows the Cartesian method will ever be satisfied until he has formally recovered all those beliefs which in form he has given up. ... A person may ... in the course of his studies find reason to doubt what he began believing; but in that case he doubts because he has a positive reason for it, not on account of the Cartesian maxim. Let us not pretend to doubt in philosophy what we do not doubt in our hearts» (CP 5.264).

³ Peirce goes so far as to assert «above all things it is the searching thoroughness of the [medieval] schoolmen which affiliates them with men of science and separates them, world-wide, from modern so-called philosophers» (CP 1.33). The *spirit* in which inquiry is undertaken is, according to Peirce, «the most essential thing»; it is most evident in «the craving to know how things really [are]» (CP 1.34). He is disposed in this context to note: «how different this spirit is from that of the major part, though not all, of modern philosophers» (ibid.).

⁴ In this endeavor I am contributing to what is beginning to emerge as an important development in Peirce scholarship, with Bianca Thoilliez's dissertation (Autonomous University of Madrid, 2013) being the most recent contribution to this with which I am familiar. Douglas Anderson, Mats Bergman, Torjus Midtgarden, and Toril Strand are among the most notable contributors to this noteworthy development. With Midtgarden and Strand, I edited a volume of *Studies in Philosophy and Education* (volume 24, 3-4 [2005]) devoted to Peirce and education. I am deeply grateful to Bianca Thoilliez for inviting me to return to this important and still insufficiently explored area of Peirce scholarship.

essay is at once an attempt to highlight distinctively Peircean themes (e.g., contrite fallibilism, experiential realism, and heuristic or methodological imagination), to trace the implications of these themes for the philosophy of education, and finally to reflection upon aspects of education in the spirit of Peirce's fallibilism. Indeed, some of the points made here (e.g., my emphasis on attending to the world) are Peircean primarily in the sense that his thought has inspired them, but I would argue that they are in deep accord with Peirce's actual commitments⁵.

Especially with Immanuel Kant, however, Western philosophy once again became a scholastic affair. The rupture with medieval scholasticism, so prominent in early modern thought, should not hide from us the resuscitation of a scholastic ethos, so manifest in later modernity. Fichte, Schelling, and Hegel were as familiar with the intricate details and overarching goals of Kant's critical project as Thomas, Scotus, and William of Okcham were of their immediate predecessors (including Moses Maimonides, Avicenna or ibn 'Abd Allāh ibn Sīnā, and Averroës or ibn Rušd). In due course, the ethos of *lectio* and *disputatio*⁶ became as central to German philosophy in the nineteenth century as it was to medieval education in the thirteenth⁷. The painstaking, detailed «reading» or interpretation of pivotal texts, conjoined to an equally careful, minute critique of those texts, partly defined the task of the teacher, at least in a discipline such as philosophy. But the substantive and methodological questions around which these pivotal texts themselves turned were taken by teachers and students alike to be the ones of primary importance (hermeneutic disagreements being only of secondary concern). That is, professors were entitled to profess, to elaborate their own systems (to attempt to state how they judge the truth of things to stand) but this task was inseparable from the two just mentioned. Indeed, their systematic contributions arose as more or less immanent critiques of extant systems (cf. Peirce *CP* 6.7; Dewey *MW* 10).

But the eventual emergence of *modern* scholasticism in the second half of the eighteenth century (Who could be more paradigmatically a professor, a thinker shaped by the demands of teaching, than Kant?) must be seen in historical context. The dramatic rupture with *medieval* scholastic is a defining feature of the early modern philosophers, however much Descartes and others failed to

⁵ The importance that Peirce accords to phenomenology can properly be taken to imply what I am calling here the task of attending to the world, if indeed it is anything other than (in reference to education) a restatement of his emphasis.

⁶ The ethos of *disputatio* need not be that of uncharitable polemics; in fact, the principle of charitable interpretation was, for the medieval schoolmen, a crucial feature of *disputatio*, properly conceived and undertaken. It is, as Josef Peiper and other commentators on medieval thought have pointed out, closer to a dialogue than a polemic.

⁷ It should be noted, if only in passing, that in this context *lectio* or interpretation was always (at least) implicitly critical, whereas *disputatio* or critique was deeply intertwined with hermeneutic questions.

appreciate the extent to which they were perpetuating aspects of the traditions against which they were rebelling. In any event, with Descartes and Locke the dominant current of Western thought moved outside of educational settings⁸. An early modern philosopher (at least the most memorable ones) was more likely than not to be a mercenary soldier or a lens grinder or a private physician and personal secretary to an aristocratic figure⁹ than a university professor. In this respect, Peirce, who was employed primarily as a scientist, was more like Descartes than either their medieval predecessors or later modern thinkers such as Kant, Schelling, and Hegel. More than anything else, his «books» or «texts» were the invaluable phenomena¹⁰ of the world itself¹¹, not treasured artifacts to be found on the shelves of libraries or in folios wherever they might be safeguarded¹².

⁸ It may be the case that we are entering a time when education is once again moving out of the schools, to a far greater degree than has been the case in recent centuries. Schools are unlikely ever to become irrelevant to education, but other institutions might assume a greater share of pedagogical tasks than formal schooling at this historical moment assumes.

⁹ This allusion is to Descartes, Spinoza, and Locke, respectively.

¹⁰ Peirce considers «the relative values of experiences familiar and recondite». What he suggests about these values is worth recalling here. «Respectability will remark that worth of anything is equivalent of trouble requisite to supply it, familiar experiences, like air and water, commanding no price ... Science will hold scientific [or comparatively recondite] experiences more capable of systematic marshaling to great ends than civilian [or familiar] facts. Young America will familiar phenomena squeezed lemons, whatever they had to teach already learned, things to be left behind in pressing on to new things; and it will recall dazzling inventions spun from recondite experiences, gunpowder, mariner's compass, steam engine, electric telegraph, India rubber, anæsthetics, sewing machine, telephone, electric light» (CP 6.564). But, for all that, familiar experiences have far greater heuristic or intellectual value than these mutually supportive tendencies would dispose us to imagine. Indeed, philosophical inquiry is, according to Peirce, a painstaking exploration of the most familiar facts to which human experience attests. They are inexhaustible sources of philosophical insight, if we can only marshal the ingenuity and imagination to probe them as deeply as they allow.

¹¹ In his *Discourse on Method*, Descartes reveals: «... as soon as my age permitted me to pass from under the control of my instructors, I entirely abandoned the study of letters, and resolved no longer to seek any other science than the knowledge of myself, or of the great book of the world. I spent the remainder of my youth in travelling, in visiting courts and armies, in holding intercourse with men of different dispositions and ranks, in collecting varied experience, in proving myself in the different situations into which fortune threw me, and, above all, in making such reflection on the matter of my experience as to secure my improvement. For it occurred to me that I should find much more truth in the reasonings of each individual with reference to the affairs in which he is personally interested, and the issue of which must presently punish him if he has judged amiss, than in those conducted by a man of letters in his study, regarding speculative matters that are of no practical moment, and followed by no consequences to himself, farther, perhaps, than that they foster his vanity the better the more remote they are from common sense».

¹² At times, Peirce certainly sounds Cartesian in this respect. For instance, he stresses, «modern students of science have been successful because they have spent their lives for the most part in their laboratories and in the field; and while in their laboratories and in the field they have not been gazing on nature with a vacant stare, that is, in passive perception unassisted by thought, but have been observing – that is, perceiving by the aid of analysis – and testing the suggestions [or implications] of theories» (CP 1.34). But he amassed an impressive personal library; moreover, he devoted himself to the painstaking study of various texts, ranging from ancient writings to the most recent articles in scientific journals. In other words, his attitude toward erudition was in fact quite different than that displayed by Descartes. Here, as in so many other respects, he was closer to Thomas Reid than any other modern philosophy. Whether he

Though his father Benjamin Peirce was a professor and, at the outset of *his* career, Charles himself seemed to be destined to occupy a chair at a university, Charles Peirce was for most of his life as much a denizen of the world (rather than a creature of the university) as were Descartes, Spinoza, and Locke. Even a recluse¹³ can be such a denizen, at least when he takes nothing less than the world itself as his setting and indeed the object of his concern¹⁴.

Recovery of the world, the reconstruction of experience, and engagement with others

The discovery of language need not entail the loss of the world (cf. Rorty 1972). The linguistic turn, as it actually unfolded, however, did involve such a radical loss or, at least, has been felt by so many in recent years to involve such a loss (cf. Farrell 1994)¹⁵. The world as simply there, complete in itself, is indeed a world well lost. But this is not the only one sense of this richly ambiguous word. As Peirce used the word, it points toward the world as that which so immeasurably transcends our understanding, so intimately penetrates our innermost being, so massively supports our existence, but nonetheless so forcefully rebukes our errors and so harshly punishes our ignorance. The enveloping, evolving order in which human life unfolds can be ignored or overlooked, pre-

would go as far as Reid and claim «the greatest and most important part of our knowledge [is acquired] by the information of others» is perhaps uncertain (though I am inclined to think that Peirce would endorse this claim), Peirce was deeply appreciative of the indispensable role played by testimony in the acquisition of knowledge. The current development in contemporary epistemology signaled by A. C. J. Coady's *Testimony: A Philosophical Study* (1995) and subsequent writings on this topic are, in effect, a return to Reid but also to Peirce. The disparagement of tradition and testimony so characteristic of early modern philosophers such as Descartes and Locke are absent in Reid and Peirce; in fact, both this Scottish commonsensist and this critical commonsensist, respectively, are defenders of tradition and testimony.

¹³ The extent to which Peirce lived until his later years a social life also needs to be taken into account. He was in early manhood and even for the early years after his move to Arisbe in Milford, PA, hardly a recluse. Regarding this, see Brent 1998; also Fisch 1986.

¹⁴ For Peirce, the world was above all else «a cosmos, so admirable, that to penetrate to its ways seems ... the only thing that makes life worth living» (CP 1.43). The «circumambient All» (CP 6.429) is to some extent an intelligible order even though it is an incessantly evolving order. Intelligibility is, in Peirce's hands, severed from fixity and conjoined to process and evolution. So, for him, the intelligibility of the universe is partly a function of evolution, process, and growth. We only understand things by discovering how they emerged and evolved, how they came into being and sustain themselves over some indefinite stretch of real time. Interconnected processes replace immutable forms as the key to understanding reality. In Peirce's mind, this is connected to the principle of continuity: «Once you have embraced the principle of continuity no kind of explanation of things will satisfy you except that they *grew*» (CP 1.175). As it turns out, then, his synechism (or commitment to continuity) and evolutionism are inseparable: continuity is most manifest in process involving things growing ever more intimately together, while evolution is itself a dramatic instance of continuous growth, despite the undeniable role of chance events and radical alterations.

¹⁵ This needs to be qualified. Even so, the apparently anti-realistic implications of the thought of the later Wittgenstein have tended to be the ones drawn, rather than the possibly realistic ones. See, however, Cora Diamond's *The Realistic Spirit: Wittgenstein, Philosophy, and the Mind* (1995).

cisely because it is ubiquitous. But the greatest minds have deliberately turned their critical attention from the narrow concerns of their own private lives and toward the encompassing world, focusing on various salient features for the sake of understanding more deeply the elusive character of that enveloping whole. In one sense at least, the world *is* well lost, but in other ones, its recovery is imperative. In some of these other senses, then, Peirce advocates the recovery of the world¹⁶. Truth does not primarily dwell in the inner recesses of the human psyche; indeed, the psyche itself dwells in a world of an incomprehensible complexity and scale. Truth principally dwells in the enveloping world of our shared experience¹⁷.

For Peirce at least, experimentation is a dialogue with nature¹⁸. As important as exchanges with other experimentalists are for ascertaining what promise to be the most fruitful paths of experimental inquiry, these are ultimately subordinate to experimentation itself. The direct encounter with the actual world, both in the haphazard form of our adventitious experience and the contrived form of deliberate experimentation, must be the basis of our philosophy. Either philosophy is rooted in experience or it is balderdash (Perry, II, 418)¹⁹. The world, as we experience it, is indeed always already interpreted; it is overlaid with inherited preconceptions and traditional categories, so much so that we often miss or distort what we actually encounter in experience (cf. Dewey *LW* 1). But, in Peirce's judgment at least, we are not imprisoned within the confines of such interpretations and categories: the interminable task of hermeneutic revision and categorical renovation can either limit itself to conceptual elaboration or open itself to experimental modification. That is, it can be either a purely conceptual

¹⁶ In most attempts to draw out the implications of Peirce's writings for the philosophy of education, the focus has been on logic in general and methodic in particular (i.e., the third branch of logic, conceived as semeiotic, the one devoted to heuristic questions). This is in accord with both the letter and spirit of those writings. But, on this occasion, I want to direct attention to a more fundamental level of philosophical inquiry – that of phenomenology. The attention being highlighted in my essay concerns, above all else, a phenomenological attentiveness to the world in its myriad guises. We can begin our reflections at an unwittingly abstract level, taking for granted much that needs to be not so much questioned as approached from novel angles, in order to be seen in unfamiliar ways. Such, at least, is my hope in directing our attention to the phenomenological recovery of the invincibly elusive world in which all processes of learning take place.

¹⁷ Peirce goes so far as to suggest, «individualism and falsity are one and the same». He immediately adds: «we know that man is not whole as long as he is single, that he is essentially a member of society. Especially, one man's experience is nothing [or negligible], if it stands alone. If he sees what others [in principle] cannot, we call it hallucination. It is not 'my' experience, but 'our' experience that has to be thought of; and this 'us' has indefinite possibilities» (*CP* 5.402.n2).

¹⁸ «Successful research ... is conversation with nature; the macroscopic reason, the equally occult microscopic law, must act together or alternately, till the [human] mind is in tune with nature» (*CP* 6.568; cf. *CP* 5.168), i.e., more finely and fully attuned to the world from which this mind evolved.

¹⁹ In a letter to James, Peirce actually wrote: Philosophy either is a science or is balderdash. I am modifying this for my purpose.

affair or a truly experimental one. Logically drawing out the implications of our concepts is one thing, experimentally testing our theories in light of these implications is quite another. For Peirce, conceptual revision and categoreal renovation are prematurely arrested if they do not extend to experimental testing and, indeed, the modifications inevitably required by such testing.

This does not imply any naïve positivism, least of all one regarding our ability to draw an absolutely sharp distinction between observation and theory (see, e.g., Peirce *CP* 1.35). Long before Russell Norwood Hanson, Peirce realized (though the expression is Hanson's not Peirce's own) observation *is* theory-laden, but the theories giving form and focus to our observations can themselves be transformed in light of the pressures and promptings of our experience (cf. Short 1980). Our encounters with the world are always conceptually (hence, categoreally) mediated, but such mediation does not preclude an encounter with what is other than what we happen to think. In other words, our experience is mediated, yet direct²⁰. It is, at once, a direct confrontation with what is irreducibly other than our conceptions *and* the ingenious deployment of a vast arsenal of more or less integrated concepts (a deployment aiming at rendering intelligible whatever we happen to encounter in our experience). Peirce rejected intuitionism (the theory that we have intuitive or immediate knowledge of the external world or, for that matter, any other world, including the «internal» world of our individual consciousness). That is, all knowledge is inferential. But, in rejecting immediate knowledge (in insisting upon all human knowledge being inferential), he did not thereby reject a direct encounter with irreducible otherness. Peirce insists «we have *direct experience of things in themselves*. Nothing can be more completely false than that we experience only our own ideas. That is indeed without exaggeration the very epitome of *all falsity*» (*CP* 6.96). But what he immediately goes on to say is a crucial as this emphatic assertion about our direct experience of external reality: «Our knowledge of things in themselves is entirely *relative*, it is true; but all experience and all knowledge is knowledge of that which is, independently of being represented» (*ibid.*), hence independently of being known.

²⁰ I am of course aware that these two terms (direct and immediate) are ordinarily used in this context as synonyms. But John E. Smith, Richard J. Bernstein, and others have wisely proposed to draw a distinction here. For those familiar with Peirce's categories, it is perhaps helpful to note that characterizing experience as a direct encounter highlights the secondness of experience, whereas stressing that experience is nonetheless a mediated affair underscores its thirdness. Nothing precludes, at least from a Peircean perspective, a phenomenon (especially one such as experience) exhibiting *both* secondness and thirdness. Indeed, everything pushes us in the direction of seeing them conjoined in such a phenomenon as experience. For the sake of simplicity, I have left out firstness. But, in my discussion, it has been noted, albeit implicitly. The felt qualities or qualitative immediacies noted in this discuss are attempts to identify the firstness inherent in experience. For a penetrating yet accessible exposition of these subtle points, see Chapter 6 («Experience After the Linguistic Turn») of Bernstein 2010.

As this implies, human experience is itself an irreducibly complex affair. In addition to qualitative immediacy, brute otherness and indelible intelligibility are defining features of human experience²¹. Qualities are felt and otherness is experienced – and the significance of objects and events is inferred from the complex interplay of these felt qualities and experienced otherness. For instance, the foraging bear smells rotting wood and, on the basis presumably of an instinctual disposition, infers from this aromatic quality the proximity of grubs²². The aroma thrusts itself upon the attention of the bear and, in doing so, functions as an index (a sign pointing to something other than itself, because the object of the sign, that which the sign signifies or, somewhat misleadingly, represents, causes the sign to come into being). The perceived quality fulfills an indexical function, this aroma being taken by the bear to be an indicator of the proximity of nourishment. The bear follows the scent to the wood and, having discovered the source of this smell, uses its claws and other organs to search for grubs. What this example makes plain is that, even in the case of animals other than humans, experiential encounters are complex affairs, ones involving qualitative immediacy, brute otherness, and interpretive (or inferential) processes, however instinctual or automatic are these processes. Features of objects and events solicit and, occasionally, even demand attention: they characteristically insist upon themselves, assert themselves, in an emphatic manner, such that effort is required to disregard the forceful claims of indexical signs emanating from these experienced (or encountered) features.

For a pragmatist such as Peirce, then, nothing less than the world itself is the stage on which we strut and fret. The experiential world is not only the matrix out of which human actors emerge but also the arena in which they pursue their purposes as well as seek to avoid mishaps and exploit opportunities. Human beings are, above all else, social actors and, for them, the world is an arena of action (though one of the most important forms of human endeavor is *theoretical* inquiry).

One of the names for our inhabitation of the world is experience. We are, for the pragmatists no less than for Heidegger, beings-in-the-world and our being in the world might be identified as the process of experience. The ineluctable entanglement of the human animal with a hazardous yet supportive world is, for

²¹ Experience is, at least according to Peirce, a phenomenon or range of phenomena in which secondness (or otherness) is preeminent. It is nonetheless one in which firstness and thirdness are also present. Here I have tried to take note of the firstness, secondness, and thirdness inherent in experience by means of three expressions: qualitative immediacy (the aspect of firstness), brute or irreducible otherness or alterity (the aspect of secondness), and indelible intelligibility (that of thirdness). We cannot do justice to experience if we fail to accord these three facets their due: felt qualities, encountered resistances, pressures, oppositions, and other forces brutally acting on a sentient being, and innumerable intimations of an open-ended intelligibility.

²² I have borrow this wonderful example from T. L. Short's book (2007).

Peirce at least, the ultimate basis of philosophical reflection. Experience attests to a world beyond itself, one to a remarkable degree other than our preconceptions and prejudices. In turn, the world discloses itself in and through our experience, but in doing so also conceals itself in subtle and ordinarily unnoticed ways. (Here, also, the parallels between a pragmatist such as Peirce and a phenomenologist such as Heidegger are striking.) However much our experience generates illusions and supports misinterpretations, that experience is a medium of disclosure. It does not invincibly cut us off from the world; rather it *is* itself an intimate involvement with primarily the immediate foreground of an incomprehensibly vast cosmos. But the hints regarding the character and vastness of that cosmos are sufficient to frame, however fallibly, some conception of the world in which our lives are fated to be lived.

So, just as Descartes explicitly pointed to the world as the book to which he devoted his attention²³, Peirce in effect also turned to the world as the principal focus of his philosophical concern. But neither the rationalist methodology championed by Descartes or, for that matter, the nominalistic empiricism celebrated by Hume were reliable approaches to a disciplined investigation of the experiential world. The world as it is actually encountered in experience must be given its due; and it must be given its due at the very outset of inquiry. This implies the primacy of phenomenology (or what Peirce sometimes called *phaneroscopy*), the attempt to offer a painstaking description of the *experienced* world. But, then, the world as ingeniously interpreted by countless generations of human inquirers is far from negligible. This implies the abiding need for wide erudition, with deep learning in those fields to which any investigator hopes to make a significant contribution. In turning toward the world itself, then, Peirce did not so decisively or completely turn away from the world of learning, as this world was embodied in the books of his predecessors and contemporaries. Nothing is indeed more valuable for the experimental inquirer than *direct* experience. But, apart from the suggestions and hypotheses to be found in the writings of others, such an experience would be, for the most part (if not entirely), a tale full of sound and fury, signifying nothing. The world as interpreted by any one of us is, to a degree we cannot even measure, the world as it *has been* interpreted by our ancestors. Accordingly, a detailed knowledge of the intellectual traditions on which our thinking is borne aloft and by which it is, to a vast degree, carried along is indispensable to the experimental inquirer. Since our experience is mediated as well as direct, and since this mediation traces its roots to traditions and inheritances striking deeply into our cultural and, indeed, biological past, a knowledge of the details of the concepts mediating our encounters with the world is truly invaluable.

²³ When a visitor expressed surprise that the abode of Descartes housed so few books, Descartes informed his guest that the world itself was his book. Such, at least, is what a famous anecdote alleges.

Several important implications: experiential realism, phenomenological attentiveness, contrite fallibilism, and heuristic ingenuity

For the sake of understanding some of the more important implications of Peirce's thought for topics such as learning and schooling, it is essential to appreciate his experiential realism but also his unabashed interest in virtually every field of human learning. While experiential realism points to work to be undertaken in the laboratory or field, the erudition required of the experimentalist (at least if that inquirer's efforts are to be more than blind or random groping) points rather to the library or study (see, e.g., Peirce *CP* 1.34). The driving impulse of his experiential realism was to engage directly with the world, principally by means of personal engagement in deliberate experimentation and ceaseless attention to the reports of other experimental inquirers. Experience is a direct encounter with the world and, as such, it affords us opportunities for the world to disclose *itself* to us, often in surprising or startling ways. At the same time, experience is a *mediated* encounter with the world and, as such, it requires us to attend to how our attempts to make sense out of the world are dependent upon the endeavors of our ancestors. Experiential realism takes reality to be most properly defined (or clarified) in reference to the disclosures and disruptions of experience: reality is what has the power or force to compel us to revise our interpretation or understanding of things. But reality exerts this power in and through our experience (hence, the expression *experiential realism*). Our sense of our own fallibility is manifestly a lesson taught by our experience; it is the more or less enforced acknowledgment of the insurmountable limits within which human thinking unfolds. Such fallibilism is, however, not skepticism. There is, as Peirce stresses, «a world of difference between fallible knowledge and no knowledge».

The animating impulse of the responsible scholar is itself related to a contrite sense²⁴ of human fallibility. While it is imperative to think *for* oneself, the task of doing so ought not to be confused with that of thinking *by* oneself.²⁵

²⁴ Contrite fallibilism is based on an abiding willingness to acknowledge one does not know or one is in error (that is, a resolute commitment to *confessing* one's ignorance or mistakes). In one of his most deeply revelatory assertions, Peirce in effect confesses: «out of contrite fallibilism, combined with a high faith in the reality of knowledge, and intense desire to find things out, all my philosophy has always seemed to me to grow» (*CP* 1.14). What James wrote in a very different contexts seems, to me at least, to be a defining trait of the contrite fallibilist: «Our errors are surely not such awfully solemn things. In a world where we are so certain to incur them in spite of all our caution, a certain lightness of heart seems healthier than this excessive nervousness on their behalf. At any rate, it seems the fittest thing for the empiricist philosopher» – or contrite fallibilist (*WJ* 6: 25).

²⁵ Albert Einstein stresses: «Somebody who reads only newspapers and at best books of contemporary authors looks to me like an extremely nearsighted person who scorns eyeglasses. He is completely dependent on the fashions of his times, since he never gets to see anything else. And what a person thinks on his own without being stimulated by the thoughts and experiences of other people is even in the best case rather paltry and monotonous» (1994, 70).

Without a painstaking engagement with other thinkers, including ones from different cultures and distant epochs, it is impossible to obtain the perspective, depth, and nuance that we so desperately need to make wider and deeper sense out of the world of our own experience.

The world matters. Our experience of the world matters. And the interpretations offered by such thinkers as Plato, Aristotle, Thomas, Scotus, Kant and Hegel, interpretations of both the world and our experiences of the world, matter. Consequently, let us never lose sight of the vast, enveloping cosmos; but let us also not lose sight of the varied, yet often overlapping angles of vision bound up with any experience of the world. Finally, let us not lose sight of the ways that others have borne testimony to their experience of the world, also have in some instances accredited the power of reason to discover facets or dimensions of the world, but then again how still others have discredited reason and disparaged experience. In the name of experience, we have often been misled into casting the world as a domain utterly beyond our comprehension or discover (all we *can* ever know is, so the story goes, our own experience and an unbridgeable chasm stretches between this experience and the world). But, then, in the name of reason, we have not infrequently been misled into denigrating the power of experience: for the rationalist, experience, especially sensory experience, is a source of illusion and error, not a resource for self-correction and self-control. Also in the name of the world itself, however, our experience has been likewise discredited.

What Peirce advocates is the recovery of the world itself. This entails, in the first instance, a deliberate cultivation of phenomenological attentiveness. To repeat, the world matters. Most immediately, the Earth and the forms of life it supports matter. Whatever we are able to discover about the cosmos enveloping the Earth, we are only able to discover by means provided by our natural endowments and a sustaining environment. But the rediscovery of the world is, in this sense, misunderstood if it is taken to imply the disparagement of experience. Indeed, the rediscovery of the world entails for Peirce and the other pragmatists the reconstruction of experience. Nominalistic or atomistic conceptions of experience need to be jettisoned and, in their place, a realistic (at least, a truly empirical) reconstruction of experience needs to be undertaken. Experience is shot through with intelligence, because it is indicative of intelligibility and, in turn, these indications provide animal cunning with more or less secure footholds to ascend ever higher in its cognitive endeavors. To some extent (perhaps to a far greater degree than we are willing or disposed to acknowledge), the world solicits and sustains our efforts to understand it. All of this requires an unwavering commitment to *experiential realism* and, as a defining feature of what is at bottom a moral stance toward the empirical world, *contrite fallibilism*. But it requires more than this. For it demands methodological imagination or *heuristic*

ingenuity. However much the world solicits and sustains our investigations, we have ingeniously to devise and institute methods of inquiry. The task of the educator turns out to be identical to that of the inquirer, for both are principally preoccupied with *discovering* (if only in some cases discovering anew) the most effective way of exploring some specific field. As a result of historical learning, direct experience, and resilient hope, one ought to learn not simply how to conduct a number of different kinds of investigation but also how to devise new methods, to institute novel procedures. For Peirce no less than Einstein, imagination is, for the inquirer, more important than knowledge. And heuristic imagination, methodological ingenuity, is of most vital importance²⁶.

First of all, the *world* as that which for the most part transcends our understanding, second, our *experience* in its myriad forms, and, third, the most arresting or influential *accounts* of both our world and experience define the innermost curriculum of Peirce education. Criteria can be derived from these foci. How do learners orient themselves to the world? How do they accredit – or devalue – their own experience of the world? How seriously do they engage with accounts proffered by individuals representative of different cultures or distant epochs? These criteria and others akin to them are, no doubt, vague, but this vagueness might be a virtue even more than a shortcoming or flaw. How variable, wide, and deep are the ways learners are caught up in the world? How ingenious are they in their use of traditional methods of inquiry and in their crafting of novel methods? Quite simply, how *attentive* are learners to what is going on around them, not just how they are personally registering the processes in which they are caught up? «Attention is», as Simone Weil noted, «the rarest and purest form of generosity». Do they give the details of the flux of either nature or experience even a moment's notice, that is, a child's attention?

The recovery of the world (including the discovery of what we do not yet know about the world), the reconstruction of experience, and the critical engagement with one's intellectual inheritance define, as I have already noted, a curriculum. That is, they define the main foci of educational concern, precisely because they constitute the principal objects of human inquiry. There is a legitimate and restorative self-forgetfulness that results from attending to the world in a humble and generous manner. But there is a crucial and potentially elevating self-consciousness that flows from attending to how even the seemingly most rudimentary and innocent processes (e.g., a random observation in everyday circumstances or acknowledging the presence of a friend), all the more so how

²⁶ «When a man desires ardently to know the truth, his first effort will be to imagine what that truth can be. He cannot prosecute his pursuit long without finding that imagination unbridled is sure to carry him off his track. Yet nevertheless, it remains true that there is, after all, nothing but imagination that can ever supply him with an inkling of truth. He can stare stupidly at phenomena [cf. *CP* 1.34]; but in the absence of imagination they will not connect themselves in any rational way» (*CP* 1.46; cf. *CP* 1.383).

the most sophisticated and hence inherently corruptible activities, are in effect historical practices carried out by deliberative agents. In brief, these processes and activities are things that we *do*. They are things we do even when the signs of our agency are far from evident or legible. Absorption in the object of our attention entails a forgetfulness of our selves, while the reflexive consciousness characteristic of deliberative agents when they are striving to exert control over their conduct tends to thrust the self into such prominence as to eclipse the very world in which their endeavors are taking place. Excessive reflexivity or introspection can be eviscerating, just as our unacknowledged agency can be an instance of evasion. The world of learning can however provide a corrective to both such evisceration and evasion. But, then, the world itself can help us to forget ourselves, by completely absorbing our attention; just as the conscientious exercise of deliberative agency can call our selves to themselves, reminding us as agents of our role and thereby our responsibility in a spectrum of activities, ranging from the most rudimentary to the most refined ones. Teachers or educators need themselves to be attentive to just this dialectic of self-forgetfulness and self-accountability. Only when the world, our experience of it, and the demands of erudition are each given their due is this dialectic a fluid, transformative process (only then is it truly a dialectic). When this dialectic is arrested (when, for example, preoccupation with self precludes effective involvement with the actual world), one or more of these has been slighted.

But let us return, for a moment, to a point made near the beginning of this paper. Like Descartes, Peirce (that most anti-Cartesian of philosophers) worked outside of the university²⁷. One might quickly (indeed, all too quickly) conclude that this fact about Peirce's professional life defined in great measure the scope of his intellectual concerns. Of education, one might quip that what we have in Peirce's case is this: out of school, out of mind. This however would be misleading, for questions at least touching on learning and even schooling fell squarely within the scope of his preoccupations. Peirce's concern for these questions invites a paradoxical statement. These questions were, at once, the most marginal and the most central of those to which he paid attention. For Peirce was preoccupied, first and foremost, with the *growth* of knowledge. He was not principally animated by a desire to overthrow skepticism, once and for all, but by a passion to advance knowledge, by facilitating discovery. In other words, he was motivated by the aspiration to establish practically the truth of fallibilism, not to demonstrate abstractly the mere possibility of knowledge. This is one of the most important respects in which he broke with the Cartesian tradition in modern philosophy²⁸.

²⁷ There were of course the years spent teachings at Johns Hopkins University.

²⁸ In this respect, Kant was a Cartesian. Hence, Richard Rorty's characterization in «Pragmatism, Relativism, and Irrationalism» is inaccurate. Allegedly in contrast to James and Dewey, «Peirce himself

Conclusion

From a Peircean perspective, then, the principal task of the teacher is to facilitate, perhaps by initially recovering, on the part of the learner an attentive engagement with the world. But this task is inseparably bound to those of attending responsibly to the distinctive angle of vision, the specific mode of engagement, *and* likewise attending to what a host of others have suggested about the world and our experience of it. Direct engagement with the environmental world is a *personal* involvement or entanglement. But this engagement or encounter is not one between a ready-made world and a ready-made self. Indeed, neither the world nor the self is antecedently fixed. The world no less than the self is *in the making*.

From this same perspective, the cardinal virtue of the teacher is, hence, wonder or a passion to discover what is not yet known. The classroom must be transformed into the site where a community of inquirers comes into being and sustains itself. For the members of such a community, far-flung erudition and first-hand experience are crucial. But they are ultimately critical insofar as they enliven, direct, and intensify our attention to the world itself. There can never be a perfect balance among these three crucial factors (the world, our experience of the world, and the accounts of both offered by others). But the educator must be attentive to how the dialectic of attention is unfolding in the case of each of the learners with whom that individual is entrusted.

The romance of learning must, in the end, evolve into a committed relationship to the often hard work of disciplined inquiry. The cutting edge of experience, the critical implications of our engagements with the world, need to be allowed to cut through nonsense and irrelevance. The withdrawn self must be drawn back into the world, just as the completely absorbed self (the one so captivated by the world as to be self-forgetful) must be invited to attend, from time to time, about the inevitable limitations and biases built into any specific mode of engagement with the experiential world.

We lose the world, time and again. For good and ill, we also lose our selves and we do so in various ways. One of the most important implications of Peircean pragmatism for a critical pedagogy is the abiding need to recover the experiential world. It makes of education a series of invitations to look and see, listen and hear, touch and feel (to mention simply some of the more obvious

remained the most Kantian of thinkers – the most convinced that philosophy gave us an all-embracing ahistoric context in which every species of discourse could be assigned its proper place and rank. It was just this Kantian assumption which James and Dewey rejected». But, in truth, Peirce was hardly the most Kantian of thinkers. He was far more historicist than formalist, hence, far closer to Hegel than to Kant. See, e.g., *Portrait of a Historicist*. He was primarily a methodologist, not an epistemologist: his concern was to assist in the *growth* of knowledge, not to slay the dragon of skepticism.

modes of direct engagement with the experiential world). Such an implication might seem to some to be so obvious as not to be worth mentioning, much less discuss in such detail as I have. But I am once again prompted to invoke here the authority of Einstein, precisely in his acknowledgment of *not* being an expert in education²⁹. In an essay entitled «On Education», he suggests:

with the affairs of active human beings it is different [than with strictly or narrowly scientific matters]. Here knowledge of truth alone does not suffice; on the contrary this knowledge must continually be renewed by ceaseless effort, if it is not to be lost. It resembles a statue of marble which stands in the desert and is continually threatened with burial by the shifting sand. The hands of service must ever be at work, in order that the marble continues lastingly to shine in the sun. To these serving hands mine shall also belong.

Peirce was such an avowed sentimentalist (see, e.g., *CP* 1.661-662) and equally such a resolute traditionalist that he would have deeply appreciated these words of a kindred spirit. The shifting sand of any historical moment might cover over important truths, frequently truths as obvious as they are important. The task of recovering such truths might itself be bound up with the task of recovering the world itself. The world matters and it matters in more profound and subtle ways than we are likely to imagine. Cultivating detailed, variable, penetrating attention (or phenomenological *attentiveness*) to the world, conceived as a cosmos, is a telltale sign of a properly educated mind. Whatever blunts or undermines such attention is educative; whatever fosters it is truly educative. The pragmatic clarification of an *educated* intelligence must focus, first and foremost, on dispositions of attention, engagement, and alteration. For one cannot be truly attentive and engaged without being open to altering the way one attends to, and engages with, the world. As Weil notes and as we recalled earlier, attention is the purest form of generosity. But is it also the rarest. It should thus be no surprise that education is one of the most difficult and uncertain of human endeavors, in no small measure because responding generously to what individuals feel to have been ungenerous toward them demands transformation³⁰.

²⁹ Near the beginning of the essay from which I am about to quote, one entitled simply «On Education», Einstein asks: «From what source shall I, as a partial layman in the realm of pedagogy, derive courage to expound opinions with no foundations except personal experience and personal conviction? If it were really a scientific matter, one would probably be tempted to silence by such considerations». He draws a sharp, most likely an all too sharp, distinction between scientific matters and human affairs. But there is nonetheless wisdom in his impulse to do so, for the layperson, speaking from personal experience and personal conviction, should be granted a voice in any conversation about education. This does not entail rejecting the possibility of technical expertise or even scientific knowledge regarding pedagogical matters. It does imply or at least suggest that such expertise is by its very nature sensitive and attentive to the suggestions and criticisms of laypersons.

³⁰ In a book review entitled «If These Walls Could Talk», Daphne Merkin remarks regarding therapy: «Everything, it seems, hangs on the two people who sit behind a closed door, engaging in a corrective version of intimacy». Regarding education, we might say that everything hangs on a variable number of human

The pedagogical task is frequently up with therapeutic ones: providing corrective forms of inquiry often require providing corrective forms of intimacy (Merkin, 2000). The authority of a given teacher to undertake a therapeutic task and, at an even more fundamental level, simply the propriety of this individual to do so are culturally contested matters. For our purpose, however, such thorny issues can, for now, be pushed aside. The point most deserving emphasis is that, from Peirce's perspective at least, the cultivation of experimental intelligence and the rectification of moral character are of a piece. This might make his views regarding education anathema to those who desire or even demand the dissociation of intelligence in its pedagogically relevant senses³¹ and character in its distinctively moral sense. But, then, it might make these views especially welcome to those who are suspicious of abstract conceptions of human intelligence (conceptions obtained by abstracting a set of capacities or abilities from the concrete social, incarnate, and emotional contexts in which they are acquired, refined, and transformed). That is, it might make them especially congenial to those who envision experimental intelligence *pragmatically* in reference to its most concrete embodiment, «the flesh-and-blood experimenter» (CP 5.424). The innermost identity of such an experimenter exhibits itself in what are at bottom moral dispositions, such as veracity, the courage to subject one's beliefs to scrutiny, and the humility deeply to consider what others, especially informed, diligent others, have to say (cf. Rorty on the Socratic virtues)³².

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beings, conjoined in some fashion (if only enclosed in the same space), engaging in corrective versions of inquiry. But this might only be possible if in some instances corrective versions of intimacy and interaction with others are themselves enacted.

³¹ Not all of these senses might be quantifiable. The increasing tyranny of quantifiable measurement is, in my judgment, one of the most unfortunate tendencies in contemporary education. To oppose such tyranny – simply to call attention to it and, indeed, to name it as such – does not license indifference or, worse, hostility to those aspects of processes and outcomes that properly lend themselves to measurement.

³² Rorty is right when he suggests in «Pragmatism, Relativism, Irrationalism», for the pragmatists, «the Socratic virtues – willingness to talk, to listen to other people, to weigh the consequences of our actions upon other people – are simply moral virtues. They cannot be inculcated nor fortified by theoretical research into essence». They can however be refined and extended by cultivating the appropriate forms of human solidarity.

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