"Cutting Nature's Leading Strings": A Cautionary Tale About Constructivism

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Abstract

This paper explores some of the historical and political ancestries of constructivism. In it, I suggest that there are dark and potentially ecologically disastrous themes hidden in the happy use of constructivism in contemporary education.

Résumé

Cet article explore quelque-uns des ancêtres historiques et politiques du constructivisme. Dans ce texte, je donne à penser qu'il y a des thèmes sombres et potentiellement, écologiquement désastreux, cachés dans l'utilisation joyeuse du constructivisme en éducation contemporaine.

Our Strength is Also Our Weakness: A Cautionary Tale About Constructivism

> Accordingly, the spontaneity of understanding becomes the formative principle of receptive matter, and in one stroke we have the old mythology of an intellect which glues and rigs together the world's matter with its own forms. (Heidegger, 1985, p. 70)

> No sooner have you grabbed hold of it than myth opens out into a fan of a thousand segments. Here the variant is the origin. In each of these diverging stories all the others are reflected, all brush by us like folds of the same cloth. If, out of some perversity of tradition, only one version of some mythical event has come down to us, it is like a body without a shadow, and we must do our best to trace out that invisible shadow. (Calasso, 1993, p. 133)

Immanuel Kant's *Critique of Pure Reason* (originally published in 1787) is precisely such a mythical event, containing precisely such invisible shadows in the ways that it has come down to us. It has become silently epoch-making in our ability to imagine the nature and limits of knowledge, especially in the realm of educational theory and practice, and most pointedly in regard to issues of environmental education and ecological awareness and experience. The particular educational import of Kant's work is manifest, via the work of Jean Piaget, in the now-popular educational idea of "constructivism" and its educational consort, "development."

This paper is intended as a cautionary tale to those in education who, like me, have been quite charmed by constructivism and the sense of interrelatedness and interdependence and epistemological intimacy that it seems to portend. I am not going to review the myriad folds and forms that constructivism has taken in contemporary thought. Rather, as a cautionary tale, this tale is populated by ancestors, by ghosts, by powerful images and ideas that, I suggest, have been occluded by constructivism's myriad contemporary appearances, but that still have power and potency behind the scenes of our experiences and intentionalities and hopes for the breakthroughs wrought by this still-fresh way of thinking.

Constructivism has become potent and powerful in our educational imagination but, as with so many cautionary tales, we find that our strength is also our weakness, our freedom is very often also our limit.

A Light Broke Upon the Students of Nature

> The brighter the light, the darker the shadow. (Bly, 1988, p. 1)

> A light broke upon the students of nature. They learned that reason has insight only into that which it produces after a plan of its own, and that it must not allow itself to be kept, as it were, in nature's leading-strings, but must itself show the way with principles of judgement based on fixed laws, constraining nature to give answer to questions of reason's own determining. Reason … must approach nature in order to be taught by it. It must not, however, do so in the character of a pupil who listens to everything the teacher chooses to say, but of an appointed judge who compels the witnesses to answer questions which he had himself formulated. While reason must seek in nature, not fictitiously ascribe to it, whatever has to be learnt, if learnt at all, only from nature, it must adopt as its guide, in so seeking, that which it has itself put into nature. (Kant, 1964, p. 20)

Immanuel Kant's *Critique of Pure Reason* was, as its title suggests, intended as a critique, that is, as a setting of the limits of human reason, finding its borders or boundaries, its liminal edges. Kant was profoundly concerned about the potentiality for human reason to overstep its boundaries, to overreach its capabilities, and about the terrible dangers that follow from such overstepping. It is precisely this potentiality for overstepping that has fallen into shadow in much of the contemporary love affair with constructivism.

The roots of this potentiality can be simply stated, but its consequences are immeasurable. In knowing objects, we cast them into relationship with our ways of knowing. Therefore, we can never know things themselves (what Kant names the *Ding-an-sich*, the thing "in itself" or "in its indigenous nature independently of its admixture with us") because the act of knowing is the act of knowing-the-thing-only-in-relation-to-our-ways-of-knowing. In knowing things in the world, we inevitably, and to some mysterious extent, see our own face reflected there (in passing, consider the

echoes Genesis, and God's face reflected in the as-yet unformed waters that are then formed by His utterance, as well as the tale of Narcissus and his enrapture with his own reflection—both analogies to the charms and shadows of constructivism).

Briefly glimpsed here is Kant's admonishment: things-in-themselves escape the potential tyrannies of being cast into a relation with human reason. Independently of human reason, things themselves, Kant (1964) allows, "conform to laws of their own" (p. 178). But this skips too far ahead in the tale. Why would Kant consider that being cast into a relation with human reason might be potentially tyrannical?

The above-cited passage from Kant's *Critique* gives us two clues to follow, two folds of "the same cloth" (*textus*, the same weave, the same text) to explicate that are of especial interest to educators:

- Human understanding is a demand that is properly wielded free from nature's leading-strings and earthly constraints.
- The path to this freedom of human understanding is the road to maturity.

From these themes emerges a new figure in this cautionary tale, one much closer to the hearts and minds of educators: Jean Piaget.

Theme One: Human Reason as a Demand

The first telling theme for educators in Immanuel Kant's epoch-making *Critique of Pure Reason* is the conceiving of knowledge as an active, constructive, orderly and ordering, demand made upon things. "To know," henceforth, is no longer understood as merely and simply and passively receiving information from an object (think of all those old "filling an empty vessel" images of education, or ones of "writing on a blank tablet," a *tabula rasa*). Knowledge is not a matter of resting in the presence of things and learning their ways through tough experience that must be suffered or undergone (see Gadamer's [1989] work on *Erfahrung*—a term which translates as "experience" but which contains the roots both of a journey [*Fahren*] and of ancestry [*Vorfahren*]). Rather, "to know" is to demand that the world suffer our acts of knowing: to know is "to impose structure," "to (give) order(s)," "to demand," "to determine," "to make," "to produce," "to create"—in popular contemporary educational parlance, "to construct."

To know is to act (in definable, determinable ways) and such action is not simply one that is taken or exercised "upon," say, this orderly pine-tree outside of my window. Rather, such action is productive of order. Differently put, once things are cast into a relationship with human reason, the order of those things is produced by reason's demand:

> The order and regularity in [what] we call nature, we ourselves introduce. We could never find [such orderliness and regularity] ... had not we ourselves, or the nature of our mind, originally set them there. (Kant, 1964, p. 147)

In the popular parlance of constructivism, we "construct" an understanding of things through acts and ideas that are formative of what we understand things to be. The patterns "of" that pine-tree (I now parenthesize "of" since the precise nature of this ascription to the tree is now in limbo) are, somehow or other, "human constructs." In knowing the pine tree, we don't know the pine tree and its patterns, but only the outcomes of what we make of it. The tree as known and experienced becomes our product—an epoch-making and ecologically traumatic "marriage of knowledge and production" (Grant, 1998, p. 1) in which things as known become commodities in what then becomes, in our time, a "knowledge economy." We become like little gods, the world (as far as we know) becomes our creation and we become its order-wielding centre.

Here is where our ecological consciousness begins to stir in the shadow of Kantianism and its constructivist offspring. As conceived by and inherited from Immanuel Kant, human reason is a synthesizing faculty which, in the act of knowing something in the world, actively constructs orderliness out of the chaos of experience in accordance with human reason's own structures, reason's own forms, reason's own categories (over a century later, Jean Piaget [1971, p. xii] would call this "imposing cosmos on the chaos of experience"). To be an object in the world, according to Kant, means to have been constructed as an object according to human reason's criteria of "objectivity." In short, "we make all the patterns" (Berry, 1987, p. 5).

The origin of this idea in Kant's work is very simple. He began by examining the type of knowledge that is at work in logic, mathematics, and Euclidean geometry and determined that such knowledge cannot be derived from empirical experience. Any knowledge thus derived can only lead to empirical generalizations whose status is always and necessarily probable. However, Kant noted that in logic, mathematics, and Euclidean geometry there is a type of knowledge at work that is not probable but rather universal and necessary—the grammar of logical deduction, the rules of geometrical calculation, the structures of mathematical reasoning (in short, "the categories and concepts of established science" [Inhelder, 1969, p. 23]—those very concepts and categories which, not especially incidentally, define the work of "environmental science"). He therefore deduced (in the section of the *Critique of Pure Reason* called the "Transcendental Deduction") that, by its very nature, human thinking has universal and necessary forms, necessary and unavoidable categories or structures or, if you will (and following Jean Piaget), schematic ways of operating. And, since thinking has such universal and necessary structures independently of and not derived from any contact with things in the world (a priori), thinking about something in the world (say,

that pine tree outside of the window) necessarily becomes an act wherein the thing that is thought about must submit to the a priori forms of thought that think about it. These a priori forms are not borne out of an intimacy with earthly things, but are essential conditions that human reason sets down ahead of time. These forms are, in this sense, right in line with the Enlightenment ideas of autonomy, freedom, and independence.

Ergo, in its infancy, one of the occluded origins of constructivism.

What occurs in Kant's (1964) work at this juncture is that a great divide opens up, a divide in the nature of nature itself:

> That nature should direct itself [in] conformity to law[s imposed by human reason], sounds very strange and absurd. But consider that this nature is not a thing in itself but is merely an aggregate of appearances, so many representations of the mind. (p. 140)

A divide opens up between nature "itself" (whatever this might now mean. Something unspoilt by our demands? Edenic perhaps, lost through the acquisition of knowledge as Genesis suggests?), and the appearance of nature in human experience and knowledge, insofar as that appearance meets the conditions set out in advance and demanded by human agency:

> The question arises how it can be conceivable that nature should have to proceed in accordance with [a priori] categories which ... are not derived from it and do not mold themselves on its pattern? The solution of this seeming enigma is as follows. Things in themselves would necessarily, apart from any understanding that knows them, conform to laws of their own. But appearances are only representations of things that are unknown as regards what they may be in themselves. As mere representations, they are subject to no law of connection save that which the connecting faculty [the categorical, structural, constructive demands of human reason are synthetic in character, that is, they are ways that things are brought together in thinking, synthesized, connected, melded from chaos into cosmos] prescribes. (p. 178)

In short, and only in regard to things as humanly experienced and known, not things in themselves, human reason is that faculty which makes all the connections, all the patterns, all essential forms and shapes of knowable things. And, insofar as human reason sets the conditions under which any thing might be experienced and known, it makes sense, now, to say that "the a priori conditions of a possible experience in general are at the same time conditions of the possibility of objects of experience." (p. 138). Nature as experienced and known becomes a closed system with humanity at its centre, holding, in advance and universally and necessarily, the conditions under which this nature can appear. And, more troublesome, we become effectively cut off from Nature "itself," as witnessed in the chilling words of Arthur Schopenhauer (1963) in this *The World as Will and Representation*, originally published in the mid-19th century:

> "The world is my representation": This is a truth valid with reference to every living and knowing being, although man alone can bring it into reflective, abstract consciousness. If he really does so, philosophical discernment has dawned on him. It then becomes clear and certain to him that he does not know a sun and an earth, but only an eye that sees a sun, a hand that feels an earth; that the world around him is there only as representation, in other words, only in reference to another thing, namely, that which represents, and this is himself. (p. 63)

Or, in the much more innocent and light-hearted parlance of constructivism (a parlance that has, in most quarters, given up the Kantian idea of universal and necessary categories or constructs and has, shall we say, psychologized, or perhaps democratized the idea of construction) I somehow "bring" to my experiences my own background and perspectives and constructs and can therefore only speak of things in the world—like that pine-tree outside the window—"from my own perspective."

It was Kant's great and honourable intention to pronounce this light that had broken upon the students of nature regarding human reason as precisely a humiliation of its scope and power. Human reason is shown in his work to be incapable of thinking beyond its own constructions and therefore incapable of finding the measure of those things that come to meet us in our experience except through its own petulant demands.

Unfortunately, however, Immanuel Kant's imagining of human reason as a demand has a great and terrible consonance with the spirit of the times in which this imagining emerged, right at the height of colonialism. Kant's work (and thus one of the great ancestors of constructivism) resonates with the colonial spirit. Issuing from Europe at this time was the unshakeable belief that "we" (a great and contentious identifier) have in hand the conditions of reasonableness, of civility and culture and morality and so on, and it is our duty, in traversing the so-called New World, to demand that that world live up to these conditions that we have deployed a priori (see Smith, 2003).

Let's be clear-eyed, here. Kant's epoch-making imagining of human reason as a universal and necessary (a priori) demand made upon the world is perfectly in line with the spirt of colonialism. To the extent that we believe that we have come upon the essential character of reasonableness, civility, culture, morality and so on, we demand these things of the world(s) we encounter in order to draw that heretofore uncivilized, disorderly, primitive, savage, world up into its truth, the truth that we have already secured a priori. We demand that the world submit to European invasion and colonization—can we bear this?—for its own good (see Miller, 1989).

And so, the shadow. We (who cleave to the essence of human civility, freedom and reasonableness) are the best in the world and the world is spread out in an array of proximity to and distance from such a centre of moralizing, demanding, issuance, a centre whose deafness regarding what is said to it is a sign of its strength. We can begin to grasp, here, the ancestry of George Bush Jr.'s recent, but by no means novel, hallucination of a "crescent

of democracy stretching from Morocco to Bahrain" created by the export of an array of American a prioris: freedom, democracy, individuality, the free market, liberty, and so on.

This is a glimpse of a constructivism that has lost its limit, lost its measure, and which finds its measure only in itself. As Jean Piaget (1965) put it a century and a half after Immanuel Kant, it is a measure which is "self-sufficient and alone guarantee[s] [its] own reflection" (p. 225).

Of course, none of this was Kant's intent, but this simply indicates that admissions of good intentions are rather inadequate to understanding our current crises. Kant meant to show that Reason's self-containedness in a world of its own making marked out its helplessness and weakness and its need to be supplemented with a deeply moral and earthly sense of the appropriateness of its application. For us, here, charmed by constructivism, we don't quite know how to deal with the fact that the orderliness and ways of the pine tree outside of my window have disappeared into appearances of my own ordering.

Theme Two: Immaturity, Maturity, and the Deveopmental Step-child of Constructivism

We need to begin unfolding this second theme by recalling the passage from Immanuel Kant's *Critique of Pure Reason*, wherein a light broke upon the students of nature. Certainly, as this passage indicates, we can learn things from the world and must not fictitiously ascribe things to it. However, the things that can and must be learned from the world are necessarily accidental features of the world, not essential features. Why? Because the essence of things (as known and experienced) is an issuance of Reason itself, "put into" nature by Reason's synthesizing, patterning, constructing agency. The universal and necessary forms that things can take is known a priori. Or, as the saying goes with constructivism, I can only talk about the object under consideration in light of my own constructs in terms of which I experience or filter or form or fashion or determine or make-up or shape or determine or schematize or … and so on.

But there is another theme here that is much more immediately in the minds of educators. In *The Critique*, and also from a later essay entitled "What is Enlightenment?" (1983, originally published in 1794), Kant consistently links up the refusal to use your own Reason (and its ordering demands) with immaturity. We catch sight of this in the above-cited passage when Kant asks us to sever our dependence on "Nature's leading-strings" (our infantile, dependent, immature "apron-strings," if you will) and cleave only to those demands produced by Reason itself. Acting in accord with the a priori demands of us maturity and Kant's (1983) clarion call to pursue Enlightenment is full of implied images of adult and child:

> Enlightenment is man's emergence from his self-imposed immaturity. Immaturity is the inability to use one's understanding without guidance from another. This immaturity is self-imposed when its cause lies not in a lack of understanding, but in a lack of resolve and courage to use it without guidance from another. Sapere Aude!: "Have courage to use your own understanding!"—that is the motto of the Enlightenment. (p. 41)

The Enlightenment image of reason, then, is pictured as the way in which humanity has overcome its immaturity, its primitiveness, its animality and wildness ("leading-strings" names a cord used to lead and train animals) its dependence ("leading-strings" were use to teach children to stand and walk).

Jean Piaget and the "Spirit of Kantianism"

> One can feel very close to the spirit of Kantianism (and I believe I am close to it). [However] the necessity characteristic of the syntheses [Kant's a priori categories of Reason are the universal and necessary ways that experience is "knit together" by Reason. They are "synthesizing." They are "syntheses."] becomes [in Jean Piaget's work] a *terminus ad quem* and ceases to be [as in Immanuel Kant's work] a *terminus ad quo*. (Piaget, 1965, p. 57)

Jean Piaget's work shares this characteristic with the work of Immanuel Kant: Jean Piaget believes that human reason is an active, organizing, structuring, demand made upon the world. However, typical adult human reasoning as manifest in the Kantian a priori categories, and its handmaiden disciplines, logic and mathematics, are only a late-arriving set of structures and ordering demands in the course of both the development of the species (phylogeny) and the recapitulatory development of the individual (ontogeny; see Jardine [in press] for an elaboration of these ideas).

In Piaget's work, the Kantian categories are not the point from which knowledge emerges (*terminus ad quo*), but the point to which knowledge develops (*terminus ad quem*). The Kantian categories emerge as humans mature. In Piaget's work, responding to the Enlightenment call that we "grow up" is not a matter of courage and resolve but is, rather, a matter of the natural course of human development. For Piaget, humans naturally tend towards the maturity of the demands of reason. Piaget thus tethers together the light that broke upon the students of nature with the burgeoning theme of progress that was rampant in the late 19th and early 20th century (see Jardine [in press] for more on this theme).

Now if the Kantian categories emerge as humans mature, how can they be understood as a universal and necessary demand made upon things? In Piaget's work, it seems that "the concepts and categories of established science" (Inhelder, 1969, p. 23) are simply a demand made by adults (and, as many critiques have offered, European, especially male, adults at that). It is here that the brilliant insight of Jean Piaget emerges and that the life-blood of contemporary constructivism takes further shape and consequence.

According to Piaget (1952), the demanding, structuring, constructing, organizing, ordering character of human life is totalized. All of human life—from the frail actions of a newborn infant, to a child bursting bubbles and laughing, to the pristine and abstract intricacies of a mathematician's scrawls—has the character of such a demand:

> *Every relation* between the living being and its environment [not just those in logic and mathematics and the logic of objectivity characteristic of the concepts and categories and methods of established science] has this particular characteristic: the former, instead of submitting passively to the latter, modifies it by imposing on it a certain structure of its own. (p. 118, my emphasis)

And, in a breathtaking ecological insight, the same is true for all beings—the chickadees swooping out of the branches of that pine tree outside the window, the nuthatches upside down on its trunk, that tree itself, all living things have the character of active, living, formative, demanding, ordering, organizing engagement in the world. Or, as Piaget puts it, there is a "self-organizing principle *inherent in life itself*" (p. 19, my emphasis), and this inherent principle defines the living being as an active agent who "imposes structure" on the things with which it interacts. This way of operating on the world is, according to Piaget (1967), "the fundamental reality about living things" (p. 347) and not simply a characteristic of the Kantian categories.

So what is it, then, that makes the realms of logic, mathematics and Euclidean geometry (the great realms of Kant's a priori in his *Critique of Pure Reason*) seem universal and necessary when, in fact, they only emerge slowly over the course of human development? Here is the great turn in this cautionary tale. In Jean Piaget's work, it is not a particular set of constructs that are a priori. Rather, it is the "self-organizing principle inherent in life itself" that is a priori. What is a priori is not this or that set of constructs, but the inevitability, in all living beings, of the functioning of constructing (captured in Piaget's terms assimilation, accommodation, and equilibration).

Therefore, according to Piaget (1952), this a priori functioning (not the structures or categories or forms peculiar to this or that living being at this or that stage of development or maturing) becomes that in relation to which the development or maturity of humanity occurs. The functioning of "life itself":

> orients the whole of the successive structures which the mind will then work out in contact with reality [culminating in the structures peculiar to the mature adult]. It will thus play the role that [Immanuel Kant] assigned to the a priori: that is to say, [this functional a priori] will impose on the structures [characteristics of each stage of development under consideration] a certain necessary and irreducible conditions. Only the mistake has sometimes been made [for example, in the work of Immanuel Kant] of regarding the a priori as consisting in structures existing ready-made from the beginning of development, whereas if the functional invariant of thought is at work in the most primitive stages, it is only little

> by little that it impresses itself on consciousness due to the elaboration of structures which are increasingly adapted to the function itself. (p. 3)

Structures or constructs or categories or forms or orders must now be thought of, not as fixed and finished demands, but rather as:

> a particular form of equilibrium, more or less stable within its restricted field and losing its stability on reaching the limits of the field. But these structures, forming different levels, are to be regarded as succeeding one another according to the law of development, such that each one brings about a more inclusive and stable equilibrium for the processes that emerge from the preceding level. (Piaget, 1973, p. 7)

Development, now understood as a succession of structures oriented towards steadily increasing stability and inclusiveness, "tends towards an all-embracing equilibrium by aiming at the assimilation of the whole of reality" (p. 9). Life, according to Piaget (and in light of age-old mythopoetic narratives [see Jardine in press]), is teleologically oriented towards a particular end: an all embracing equilibrium.

It will be of no surprise that it is precisely a version of the Kantian categories that constitutes this "all-embracing equilibrium." Formal logic and mathematics, which underwrite the methods of operation in established science (and, by the way, the so-called environmental sciences as well), are understood by Jean Piaget to embody the functional a priori inherent in "life itself." The functional a priori is embodied in the functioning of objective, science, its methods. As long as we cleave to the methods of objective science and its products, we cleave to the inherent ordering character of life itself.

Therefore, development is not a process of slowly adapting, to use the Kantian terminology, to things themselves, but is, rather, a process of becoming better and better adapted to the inevitable a priori functioning of adaptation itself. Development (the maturity alluded to in Kant's work) is oriented, therefore, towards better and better adaptation to the inevitable "organizing activity inherent in life itself" (Piaget, 1952, p. 19). The peculiarity of the Kantian categories is that they constitute "an extension and perfection of all adaptive processes" (Piaget, 1973, p. 7) insofar as they are perfectly adapted to this organizing activity. In this way, the Kantian categories take on the appearance of universality and necessity (take on the appearance of being a priori) at the end of development because they are perfect expressions of that which is universal and necessary. "The progress of reason doubtless consists in an increasingly advanced awareness of the organizing activity inherent in life itself" (Piaget, 1952, p. 19). At its developmental end, such an awareness is an "all-embracing assimilatory schemata tending to encompassing the whole of reality" since it is an awareness of that very organizing activity (which, in maturing, becomes "that very method") in terms of which reality itself is constituted. At the highest level of development we have the

methods of logico-mathematical knowledge that underwrite objective science, which is, in essence, a knowledge of the constructive and organizational operations of knowledge itself, knowledge, that is, of the functioning that has been going on all along. When we reach the level of formal logic and theoretical mathematics, however, perfect equilibrium is attained because, in these sciences (which are crystallized in the methods of established science) we "proceed by the application of perfectly explicit rules, these rules being, of course, the very ones that define the structure under consideration" (Piaget, 1970, p. 15). That is to say, at the level of logic and mathematics, the rules for doing the operations of logic and mathematics are precisely the rules upon which one operates. Logic and mathematics are thus perfectly equilibrated (i.e., perfectly adapted to the inevitable process of adaptation itself), for there is no longer any difference between the operator (the subject who does logic and mathematics operates only in accord with the rules requisite of logic and mathematics—what Piaget calls an anonymous epistemic subject who operates identically to any subject who does logic and mathematics, in accord only with the general and abstract "processes common to all subjects" [Piaget, 1965, 108]), the operations we perform (logical and mathematical) and that upon which we are operating (things insofar as they have been constructed into possible objects of objective science, things, therefore, insofar as they follow the rules of logic and mathematics).

In sum, it is human reason as manifest in the methods of objective science that operates in line with the organizing functioning inherent in life itself, and this defines the autonomy, independence and mature hinted at in Immanuel Kant's Enlightenment clarion. Therefore, anything known under the auspices of this way of knowing is known for what it essentially is, because the questions posed to that thing are posed in line with what we know its essence to already be: the organizing functioning inherent in life itself (which is now embodied in the concepts and categories of established science). The circle is now closed and objective science finds its measure only in itself.

"The Savage Childhood of the Human Race"

This surely isn't the place to even attempt to lay out all of the threads tangled here. For now, I'll offer only a sketch, another monster in this cautionary tale.

We have all witnessed how the language of "development" has come to be used in our understanding of the diversity of cultures and peoples in the world. We know how well the language of development follows from the logic of colonialism, just as Jean Piaget's developmental theory follows the "spirit of Kantianism."

We know full well of this history. For example, we know how, under the British Empire, the diversity of the Commonwealth was spread before the Crown as a wonderful, rich array of comparatively uncivilized, underdeveloped,

less reasonable, less cultured, less "mature" places. We know, from, for example, the work of Nandy (1987), how those subjected to colonial rule were systematically and deliberately characterized as "children."

Once again, this cautionary tale demands both exaggeration and bluntness. Developmental sequences are set out only by those who consider themselves to be "developed." You don't map out a sequence in order to find that you are "[the] third [world]," only to show what you already believed, that you are "number one."

It is thus that developmentalism and the images of maturity that it portends adds a profound new element to the old colonialism. With colonialism, we were able to believe that we stood in the midst of the world as the best, the freest, the most reasonable, the most civilized. With developmentalism, we get a new twist on the modernist spirit of universality and necessity (recall, Kant's criteria for the a priori): we are not just "the best" amongst others in the world. We are that towards which the world is heading in its progress towards maturity. We are its natural end, and the failures of the world to continue to (naturally) develop into what we already are must be dealt with pre-emptively.

Just in case this seems to have gotten a bit out of hand, consider the following except from an interview with David Frum, a Canadian who was the author of George Bush's recent "axis of evil" speech. David Frum was speaking with Evan Solomon, one of the hosts of the Canadian Broadcasting Company's (CBC) television program *Sunday Morning*. Frum was attempting to lay out his vision of the place of recent and future American pre-emptive actions in the Middle East, and images of childhood, adolescence, and adulthood—images of development—appear:

> *Evan Solomon*: Is this a prescription for American imperialism? Is this the new empire? I know that you think it is a beneficent empire. . .
>
> *David Frum*: No, no, Absolutely not. This is the adolescence of the human race. This is the moment when human beings are making the transition from a world governed by violence to a world governed by law. Just as the North Atlantic is governed by law, we hope that some day the whole world will look like that. But the instrument whereby humanity is going to make that transition from the savage childhood of the human race to law-abiding adulthood is through the instrument of American power. It is America who is going to. . .maybe someday it will be somebody else's. . .maybe someday it will be India's job, a while ago it was Britain's, but today it is America's power that is going to spread the realm of law and civilization and democracy. (Frum & Solomon, 2004)

Our self-understanding is thus not simply that we are the most developed, but that we (and, again, I leave this contentious signifier undefined) are the destiny of the world. Our interventions in the world are thus aimed at bringing out in others what we already know their inevitable destiny to be.

And though they may petulantly and peevishly resist, it is their salvation we offer, or, otherwise, their sacrifice (see Smith [in press] for a brilliantly terrifying exploration of this theme).

Endbit

> In his 1772 lectures on philosophical anthropology at the University of Konigsberg, Kant proclaimed that the American Indians "are incapable of civilization." He described them as having "no motive force, for they are without affection and passion. They are not drawn to one another by love, and are thus unfruitful. They hardly speak at all, never caress one another, care about nothing, and are lazy." In a note in his lecture he foreshadowed two long centuries of racist thought in Germany when we wrote that the Indians "are incapable of governing themselves" and are "destined for extermination." (Weatherford, 1988, p. 127)

And this from a man who never in his life left Konigsberg.

I'm not going to try to find my way out of this cautionary tale in this context, partially because, of course, the tale it tells is in some sense true. We all do find our way in the world in according with our ways in the world. And still, somehow, I want to note the familiar springtime change in the call of those Mountain Chickadees in a way that at least attempts to rest in the integrity of their ways and not just in the outcomes of my own construction.

Part of the gift of constructivism is a deep and troublesome recognition of our complicity in our knowing, in our experiencing. This gift portends a deep humiliation and a clearer understanding of the necessity of patience and forgiveness and love.

I'm going to leave this tale now only with the most meagre of morals. My strength, my power, my potency, is also my weakness, and only in recognition of this lacuna comes the possibility of the cultivation of humility, of real humanity. That I construct the world only in light of my own experiences names my terrible loneliness and frailty and vulnerability and dependence. It names how my own life is not adequate to my living in this world.

For now, I simply concede how inadequate is this moral to the tale it concludes.

Notes on Contributor

David Jardine is a professor of education at the University of Calgary. His main work is teaching elementary school curriculum and supervising student teachers in elementary school settings. His forthcoming book, *Jean Piaget: A Primer*, is to be published by Peter Lang, and it expands on many of the themes in this paper.

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