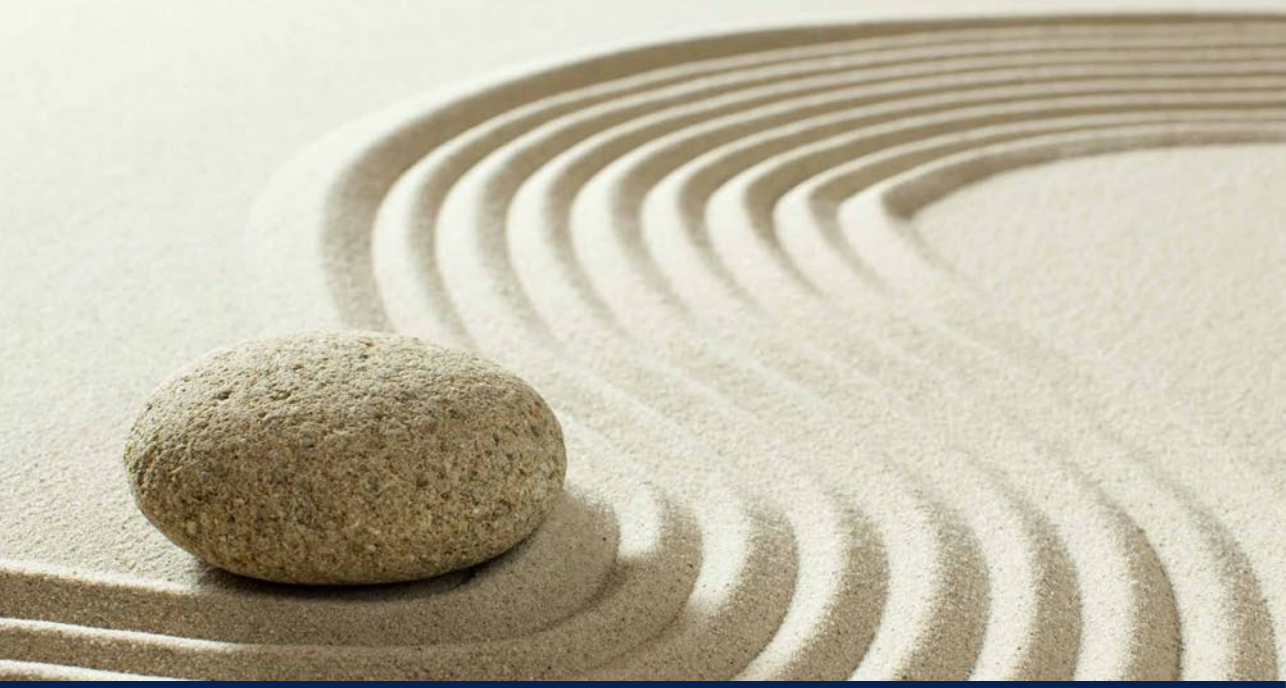

Capítulo 2

El pensamiento pragmatista en la actualidad: conocimiento, lenguaje, religión, estética y política

Pablo Quintanilla y Claudio Viale
Editores

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Propositions, truth values, and technology in John Dewey's theory of inquiry

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In a 1916 lecture to the Columbia University philosophy club, Dewey discussed the subject of logical objects. *Qua* logical, he pointed out, logical objects are most properly concerned with inquiry. Apart from esoteric practices, however, inquiry is a public, objective activity which considers publically available evidence. Inference «belongs in the category where plowing, assembling the parts of a machine, digging and smelting ore belong —namely, behavior, which lays hold of and handles and rearranges physical things» (*MW*.10.91)[1]. Inference therefore has nothing to do with what is «metaphysical». Furthermore, anything that might just hitch a ride on this process, such as what are called «psychical», or an «inner mental state», is irrelevant to inquiry.

Dewey reminded us that inference has its own characteristic tools, and that its tools are just «prior natural things reshaped for the sake of entering effectively into some type of behavior» (*MW*.10.92). What this means, in brief, is that the square root of minus one, the «horseshoe» of material implication, the number two, and so on, are all tools that have been clarified through various processes of abstraction from prior and simpler tools, artifacts, and naturally occurring objects. Dewey thought that the lineage or genealogy of these abstractions goes all the way back to very simple human inferential behavior, including counting, and perhaps even beyond that to semi-conscious or unconscious inferential behavior of our pre-human ancestors (as Charles Peirce had suggested). He suggested that among humans, at least, these inferential activities had been undertaken with a view to performing

[1] Standard references to John Dewey's work are to the critical (print) edition, *The Collected Works of John Dewey, 1882-1953* (1969-1991), and published in three series as *The Early Works* (*EW*), *The Middle Works* (*MW*) and *The Later Works* (*LW*). These designations are followed by volume and page number. «*LW*.1.14», for example, refers to *The Later Works*, volume 1, page 14.

various behavioral functions that would affect adjustments —among which he included both accommodations of ourselves and alterations of our relatively external environment— with respect to changed conditions.

Dewey's argument, more generally, was that what philosophers have understood as abstract metaphysical entities are in fact better understood as tools in much the same sense that hammers and saws are tools. Of course he was not denying that hammers and saws are concrete and tangible objects, and the number two and C. I. Lewis's «fish hook» of strict implication are abstract and intangible objects. But Dewey's insight (a component of his instrumentalism) was that the ontological difference between what is abstract and what is concrete is only one of many possible distinctions that might play a role when we are called upon to engage in inquiry. When compared to the functional and behavioral senses in which a hammer and the number two are both tools that have been developed and deployed in order to perform certain tasks, for example, the abstract/concrete distinction simply recedes into the background[2].

So Dewey suggested that «tools and works of art give the key to the question in hand: that works and tools of art are precisely the sought-for alternative to physical, psychical, and metaphysical entities». Furthermore, such «manufactured articles do not exist without human intervention; they do not come into being without an end in view. But when they exist and operate, they are just as realistic, just as free from dependence upon psychical states (to say nothing of their not being psychical states) as any other physical things» (*MW*.10.92).

Technology and truth deflation

Now it seems fair to call this idea of Dewey's an instrumentalist or «technological» hypothesis. One of its consequences is that it obviates any requirement for what is occult, transcendent of experience, or *a priori* —except, of course, in the sense of the pragmatic *a priori* later developed in detail by C. I. Lewis. C. I. Lewis, it might be recalled, described the pragmatic *a priori* as just what is prior to any sequence of inquiry as its condition. Dewey's instrumentalist hypothesis also appears to put yet another nail in the coffin of psychologism. It demonstrates how we can get logical objects by means of a process that is naturalistic, constructivist, and, well, *technological*.

[2] This is not, of course, to say that we can be confident that any particular abstract object would be able to perform much in the way of work. But the same thing must be admitted of tangible objects. To put the matter in more solidly pragmatic terms, there are abstract objects that have very few conceivable practical consequences and therefore very little to offer in terms of meanings. The same goes for tangible objects, some of which are more or less devoid of conceivable practical consequences and therefore devoid of much of that which we would term their meanings.

His hypothesis runs counter to Platonism of all sorts, from Plato himself to Gottlob Frege and beyond.

On Dewey's account, moreover, the ways in which tools and techniques are invented developed, and cognitively deployed, when they operate at their best, involve a thoroughgoing experimentalism in which *truth*, or warranted assertibility, is a desired outcome. His description of how we are able to arrive at judgments that successfully fix our beliefs (and habits) emphasizes the ways in which tools, techniques, measurements, and so on insinuate themselves into processes of inquiry and are able to influence both their character and their outcomes. Just a year before his philosophy club lecture, he had written that experiment is «indispensable to the institution of knowledge or truth» and he urged that theories be subjected to the widest possible peer review (*MW*.8.82).

Dewey emphasized experiment as central to the attainment of warranted assertibility, or, put another way, *he identified inquiry as a general form of technology*. This idea stands in stark contrast to some newer versions of pragmatism that advance deflationary accounts of both truth and the function of philosophy. More specifically, it seems that the accounts of discourse, conversations, re-descriptions, and consultations that hold pride of place within some newer varieties of pragmatism are much less robust than the technological account of inquiry advanced by Dewey.

Of course none of this is to deny that activities such as discourse, conversations, consultations, and the like play an important role as *elements* or *aspects* or *phases* within processes of inquiry. The point that Dewey wanted to drive home, however, is just that they do not *exhaust* inquiry. The problem is that it is possible to discourse, converse, debate, consult, and so on interminably —and still not reach significant results in the absence of an experimental context. Inquiry, in the honorific sense in which Dewey employs the term, is able to resolve doubtful situations precisely because it is the systematic invention, development and cognitive deployment of tools, brought to bear on raw materials and available stock parts, with a view to producing resolutions of those experienced difficulties. Inquiry is thus a more comprehensive activity than discourse, conversation, re-description, and so on, since these are activities which may or may not contribute to an experimental process in which a conclusive outcome is sought.

I am suggesting, therefore, that Dewey's technological metaphors run much deeper than has generally been recognized by some of the newer pragmatists who have claimed fealty to Dewey's ideas. In fact, it is fair to say that Dewey's *identification* of technology with intelligent inquiry employed the term *technology* in its etymologically pristine sense, namely, as the *study or inquiry into tools and techniques*. It was precisely for this reason that he was able to make the claim, which would otherwise have

appeared absurd, that «*Technology* signifies all the intelligent techniques by which the energies and nature and man are directed and used in satisfaction of human needs; it cannot be limited to a few outer and comparatively mechanical forms. In the face of its possibilities, the traditional conception of experience is obsolete» (*LW*.5.270).

It is important in this connection to recall that Dewey distinguished inquiries that are *experimental* from inquiries that are merely *empirical*. He characterized Aristotle's naturalism, for example, as *empirical* in the sense that it involved a type of proto-science that was based for the most part on observations and inferences from observed data. Aristotle's project was not experimental, however, because it did not involve the use of tools and other artifacts in controlled and systematic ways. It did not attempt to insinuate tools and artifacts into a sequence of inquiry, which would have altered the ratio of means and ends. It was in fact not until the technical and technological advances that began during the seventeenth century that there came to be a truly experimental science. This was something entirely new. It was a science that attempted to be instrumental in the sense I just described, even to the point of inventing and developing new tools and artifacts such as the air pump and the telescope for the purposes of specific inquiries. The new science was, for the first time, a technoscience.

It is worth repeating that this commitment to experimentalism, which is embedded in his instrumentalism, that tends to distinguish Dewey's classical version of pragmatism from many of the programs and outlooks that now go by that name.

Knowledge as justified true belief?

Of course pragmatism famously examines consequences, so it only seems fair to see what we can say about the consequences of Dewey's instrumentalism for some of the traditional treatments of truth?

As we know, some analytic philosophers have tended to puzzle over the implications of treating knowledge as justified true belief. One of the implications they find most interesting is that there appears to be a circularity involved in this formulation. Truth tends to be defined in terms of justification, and justification tends to be defined in terms of truth. In other words, the way that epistemic criteria and true beliefs have tended to be characterized suffers from a kind of undesirable circularity.

Pragmatist approaches to this problem tend to undercut its assumptions. The problem is simply dissolved. One of the solvents is William James's distinction between absolute or timeless truth and conditional or existential truth. Big-T-truth is just put aside as a «regulative principle» and emphasis is put on the type of truth

that is conditioned by situated social practices. Another solvent is James's distinction between *personal satisfaction*, which is subjective, and *success*, which is satisfaction of objective conditions. A third is Peirce's doctrine of fallibilism. All of this allows us to *identify* conditional, fallible truth with justification without paying the usual price of «rampant relativism».

This seems to take us in the right direction. Undesirable circles are —well— undesirable. Infinite regresses tend to be infinitely embarrassing. And these days, cartesian-style foundationalism is on pretty shaky ground. Moreover, it is also a good idea to leave truth as a regulative principle off to one side and concentrate on its richer cousin, conditional truth: despite the regulative principle that 10 divided by three is 33 1/3, for example, if that principle were applied strictly in a classroom, dividing ten children into three precisely equal groups, the outcome would be less than desirable.

In a 1941 article in which Dewey responded to Bertrand Russell's criticism of his treatment of these matters, he drew a bright-line distinction between propositions, which he claimed *are neither true nor false*, and beliefs or judgments, which he claimed *may be either true or false*. For Dewey, a true belief (or knowledge) is the outcome of a successful sequence of inquiry. It is the satisfactory resolution of a problematic situation that yields a judgment that both warranted and assertible under relevantly similar circumstances. Propositions are the means of getting to the warranted judgment. They are not asserted but merely *affirmed*, so they are neither true nor false. But they nevertheless provide support when they are adequate, effective, relevant, and so on.

Russell charged Dewey with *substituting* warranted assertion for truth, but Dewey denied that. He was making a much stronger point. He was *defining* warranted assertion as true belief or knowledge. At one point, he even wrote that «the heart of my whole theory is that knowledge is warranted assertion» (*LW*.14.173). It may have come as a surprise to some of the readers of that essay, by the way, that he even claimed to hold a kind of correspondence theory of truth. More specifically, he held that a belief is true in the sense in which a key is *true* if it «corresponds» to a lock.

So how does a pragmatist respond to the troublesome circularity that creates such difficulties for the «knowledge as justified true belief» epistemology? First, the temporal factor must be made explicit. Inquiry must be viewed as a process and it must be admitted that there are no timeless truths. James did this by invoking conditional truth, by pointing to the objectivity of successful inquiries, and by deploying Peirce's fallibilism.

But second, propositions that support a belief must be viewed not as true or false, but as adequate or inadequate, effective or ineffective, relevant or irrelevant

to an end-in-view. This idea, which seems quite foreign to what is taught in introductory logic courses, is in fact a key element in Dewey's theory of inquiry. Peirce's doctrine of fallibilism just says that a judgment that is true today may not be true tomorrow. (In Dewey's view, fallibilism is thus not about propositions in any event.) And James's doctrine of conditional truth just says that truth is conditioned by situated social practices: even when we add the business about the objectivity of successful inquiries, we still don't have much information about how those situated social practices support true belief. Someone might ask, for example, how we are to judge the truth of those situated social practices when they are put in the form of propositions intended to support the conclusion of an argument.

What is really needed is a strong theory of inquiry, and that is precisely what Dewey's account provides. When we speak of propositions with truth values that function as premises for conclusions, then we are speaking of what Dewey calls «an analysis of final judgment into its logically constituent propositional conditions» (*LW*.12.321). In other words, it is an analysis —a tissue sample or *post mortem*— of something that has already been done. Of course it is important that there be such analyses. But what Dewey offers us is something additional: a logic of living inquiry.

Simply put, when propositions are treated as proposals, and not as true beliefs, then it is evident that inquiry is not about the truth or falsity of propositions. This has at least two interesting consequences. For one thing, the danger of an infinite regress of truth conductivity or justification with respect to situated social practices is eliminated. For another, the well-known difficulties of the «spectator» or «mirror of nature» theory of knowledge are avoided, since if propositions are neither true nor false then they cannot be said to truly or falsely represent states of affairs.

Thus does Dewey invite us to regard propositions as tools for data-gathering and inference, not as truth-bearing. Thus their connection with technology. This move has the salutary effect of removing some of the burden of deploying James's doctrine of conditional truth, since what conditional truth is conditioned upon would then not be true propositions but operational facts-of-a-case, or, as Dewey puts it, propositions that «serve as evidence» and are «judged on the basis of their capacity to form an ordered whole in response to operations prescribed by the ideas they occasion and support» (*LW*.12.117).

Dewey's alternative account would thus protect inquiry from the dangers of infinite regress. It would not be the truth of supporting propositions that we would be attempting to determine, but the truth of an intermediate or final judgment. Truth and justification would be identified. We could say, with Dewey, that doubt ceases when we have reached the objective conclusion that is a true belief, and that a true belief is a warranted assertion. We would have a ready answer if asked about

the nature of the warrant. We would not have to resort to talk about the truth of propositions, but would instead discuss the support that propositions provide in terms of their relevance to the end-in-view and the larger context; that is, their effectiveness as tools that are utilized to ferret out whatever new facts-of-the-case that might be needed to reach a successful conclusion.

It is also worth noting another interesting consequence of Dewey's alternative treatment of truth. By insisting that propositions are proposals which must be *relevant* to a particular end-in-view, it is possible to avoid some of the thought experiments that have been popular within circles of analytic epistemology. To take one example, we might ask to what end-in-view the following propositions are relevant: «Smith has no idea where Brown is but arbitrarily picks Barcelona» and «Smith believes that Brown drives a Ford or that Brown is in Barcelona». These are, of course, two propositions that motivate the famous «Gettier problem». But if we take Dewey's alternative seriously, then it is fair to ask just what issue it was that Smith found so problematic that it led him to accept these two proposals as appropriate, effective, and relevant, that is, as potential keys to its solution. From the standpoint of Dewey's alternative, the problem with the entire discourse surrounding the Gettier problem is the assumption that the propositions set forth are truth functional in the absence of empirical inquiry.

Some practical applications of Dewey's instrumental view of truth

Now it is important to note that Dewey himself, precisely because he distinguished technology from tools and techniques, never succumbed to the technophobic assessment that was so widespread among his contemporaries. Even though he lived through some of the worst days of the exploitation of labor and the Great Depression in the United States, the rise of Fascism and Stalinism in Europe, and the beginnings of the Cold War, he never deviated from his identification of technology with the use of intelligent techniques. And he never abandoned his view that it is only by means of technology —the systematic application of tools and techniques— that human beings can analyze and reconstruct those tools and techniques that have become inappropriate or dangerous.

It is thus fair to say that for Dewey it was never «technology» that was the problem. It was always faulty tools and techniques; or intransigence in the face of new ideas and methods; or overriding class and economic interests; or failure either through ignorance or through force of will to avail oneself of the best of tools at ones disposal; or combinations of these and myriad other factors that are so easily and frequently arrayed against efforts to promote human growth and flourishing.

For Dewey, technology —as the experimental involvement with our tools, techniques, traditions, and so on— is intelligent. It is therefore the antithesis of ignorance, greed, intransigence, and ideology.

But if Dewey thought that technology is intelligent, that technology holds the promise of better and more productive individuals and societies, how can this come about? How would Dewey's program be carried out?

If we take care to distinguish technology from tools and techniques, then we would consequently have to recognize that the transfer of tools and techniques is not the same as the transfer of technology. If technology is reflective or critical inquiry into tools and techniques, and if reflective or critical inquiry is context-bound as the founding pragmatists argued, then technology is context-bound. Technology can no more be transferred than democracy can be exported, and for some of the same reasons.

This situation is perhaps nowhere more evident than in the case of food production in developing countries. The transfer of the tools and techniques related to «transgenic» crops, for example, has led to higher yields in large scale production systems with decreased input of material and labor costs. But many or most of these efforts have been advanced by large corporations with a view to the *export* of agricultural products *from* developing countries. Scant attention has in fact been given to crops that provide «staple foods» for local populations. This is currently the case, for example with quinoa, long a staple among the farmers of Bolivia but that is now becoming so expensive that local farmers and their families have begun to switch to less nutritious rice and pasta[33].

According to a position paper written by Louise O. Fresco, published by the Food and Agriculture Organization (FAO) of the United Nations[44], this situation has led to a «molecular divide» between developed and developing countries, and, as Fresco puts it, a divide «between technology development and technology transfer».

I find this report especially interesting because Fresco's case rests on a distinction between technology, on one side, and tools and techniques, on the other. This is, of course, more or less what Dewey proposed. She suggests that there needs to be a new contract among all interested parties that would be based on three principles: open dialogue on biotechnology's benefits and risks, increased public and private research to respond to key challenges, and new methods of insuring equitable benefit-sharing of new tools and techniques.

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[3] See, for example, http://everybodyeatsnews.com/2011/03/quinoa-trends-up-in-us-markets-becoming-too-expensive-for-bolivians/

[4] The FAO was founded in 1945 with a mandate to raise levels of nutrition and standards of living, to improve agricultural productivity, and to better the condition of rural populations. See Fresco (2001).

Her remarks also touch Dewey's idea about truth as warranted assertibility. She proposes an experimental program within which conversations, consultations, and re-descriptions will serve as contributing components. But the outcome of the experimental will be concrete results. She argues for the ability of developing countries «to establish a capacity to assess and manage all aspects of risk throughout their food chain». In other words, the transfer of tools and techniques in the absence of technology (where technology is understood as systematic inquiry into their conceivable practical consequences) has created a situation that is at best undesirable and at worst quite dangerous. It is also fair to say that the truth of her proposal will be determined not by conversation, consultation, and re-description alone, but by the extent to which it becomes *warranted* by experimental means and the degree to which it is consequently *assertible* within present and future problematic contexts.

The significant difference between the transfer of tools and techniques and the transfer of technology can be further illustrated by the now classic case of pesticide export from the United States to developing countries. A 1998 report[55] indicated that between 1992 and 1996 «U. S. exports of restricted and severely restricted pesticides rose 33 percent». Further, «of those [exported products], six pesticides considered "extremely hazardous" by the World Health Organization skyrocketed more than 800 percent. Reported exports of pesticides banned in the U. S. remained steady [during this period], averaging around 6 million pounds a year». At issue in this case is the export of *tools and techniques* into contexts in which little or no *technology* existed that could provide a basis for their safe use. This situation was of course not without consequences to consumers in the United States and other developed countries. Imported foodstuffs, including various fruits and coffee beans, were treated with these pesticides. In this case, the experimental results were in: it was assertible with warrant that the pesticides had already been tested and declared «extremely hazardous» prior to their being «dumped» in developing countries. The next step would be to find ways of limiting their export and use.

What Dewey's experimental pragmatism offers, first, is an alternative to the various types of fundamentalisms that promise the «objectivity» of absolute certainty. This is because the type of objectivity provided by warranted assertibility is a type of objectivity that is both grounded in a community of inquiry in which instruments enter into systematic and controlled experimentation and also self-correcting as a result of its commitment to fallibilism. Fundamentalisms, on the other hand, such as Christian and Muslim, tend to rely in the first instance almost exclusively on authority (in these cases, divine revelation and textual literalism, respectively).

[5] Larsen (1998). See also Wier and Schapiro (1981).

When their judgments are challenged, it becomes apparent that they have no mechanism for advancing their agenda short of appeals to authority or the application of psychological, physical, or political power. As Dewey argued, when it comes to resolving conflicts between publics, the tools of the fundamentalists have proven to be inefficient at best or counterproductive at worst.

At the other extreme are the so-called post-modernist cognitive relativists who claim that objectivity is a muddled and outmoded concept and that, as Stanley Fish has put it, that «there can be no independent standard for determining which of many rival interpretations of an event is the true one» (2001, p. A23). Replying to Fish in the spirit of Dewey's experimental pragmatism, Howard Gardner has pointed out that «universal standards emerge as necessary for discourse» (2001, p. 14). I would just add to this that for Dewey, norms or standards arise as by-products of practice and they are universal in the sense that they are universaliz*able* until they are successfully challenged. I would also add that the test of Fish's claim would be whether he would knowingly purchase food that had been subject to treatment by dangerous chemicals.

That such norms have not been universaliz*ed* was a fact that in his view constituted not so much a problem for objectivity as an incentive for further effort. The list of universaliz*able* norms, which is to say objective judgments, is a long one that includes prohibitions against slavery, female genital mutilation as it is still practiced in certain parts of sub-Saharan Africa, ethnic cleansing, and so on. On the positive side, there are universaliz*able* norms enshrined in the «Universal Declaration of Human Right» of the United Nations.

In Dewey's view, norms such as these have arisen experimentally as by-products of human practices, they increase in number as a result of technological advances, and they offer the basis for adjudicating conflicts between and among global publics.

If we abandon the experimentalism of the classical pragmatists, if we accept the truth deflationism that is currently fashionable in some post-modern circles, then I submit that we will have stripped ourselves of the tools with which to confront the forces that are currently arrayed against good science and good public health policy.

In this brief essay I have attempted to demonstrate Dewey's use of technical and technological metaphors to resolve certain traditional philosophical problems. I have also suggested some specific ways in which his contributions to a critique of our technological culture can lead to advances in human well-being and foster global publics and global citizenship. In all this I have argued that the program advanced by the classical pragmatists continues to be applicable to the problems of the twenty-first century. One of the great strengths of classical pragmatism is that its founders put philosophy to work.

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