



10-1-2013

# Dynamic Definition? A Response to Abbey Perumpanani's Article, "Civilization Defined."

Wallace Gray

Follow this and additional works at: <https://scholarsarchive.byu.edu/ccr>

### Recommended Citation

Gray, Wallace (2013) "Dynamic Definition? A Response to Abbey Perumpanani's Article, "Civilization Defined.," *Comparative Civilizations Review*: Vol. 69 : No. 69 , Article 10.

Available at: <https://scholarsarchive.byu.edu/ccr/vol69/iss69/10>

This Front Matter is brought to you for free and open access by the All Journals at BYU ScholarsArchive. It has been accepted for inclusion in Comparative Civilizations Review by an authorized editor of BYU ScholarsArchive. For more information, please contact [scholarsarchive@byu.edu](mailto:scholarsarchive@byu.edu), [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

**Dynamic Definitions?  
A Response to Abbey Perumpanani's Article, "Civilization Defined."**

Wallace Gray  
wallace.gray@sckans.edu

By a happy coincidence, I have been asked to comment on Dr. Abbey Perumpanani's stimulating article, "**Civilization Defined.**" The coincidence is that the editors chose to print my "End Note" in the same issue with Perumpanani's lead article of the Comparative Civilizations Review (No. 68, Spring 2013). My little essay, "Seeing Nagasaki: A Tale," enabled one to consider what may be learned from Nagasaki about becoming "civilized" in an evolving or devolving, compassionate or brutal world.

*There are many facts about the city to learn, including that the atomic bomb dropped on Nagasaki was meant to strike a munitions area, an important ship-building and servicing complex. Instead, winds carried the atomic bomb to a Catholic area, to the north. As a result, the bomb apparently fell on a Christian hospital and medical university. . . .*

As the paragraph implies, the shadows cast by Nagasaki **then** have darkened and lengthened almost exponentially for the world we live in **now**.

**Rediscovering Civilization in Nagasaki and Beyond**

In the midst of that project I realized I could not well proceed without careful attention to some of Dr. Perumpanani's main points. Two stand out -- how he began and how he ended his piece.

The "inclusive scientific definition" heading his Introduction reads: *A civilization is a dynamical system that supports endogenous cultural development through economic activity aggregated across elements of its data.*

It becomes quickly apparent that this physician and mathematician is an exponent of what in his conclusion (p. 19) he calls *Mathematical History*. This term is carefully explained in the body of the essay but at its outset (p. 9) he states it "can bring about a convergence in the widely differing historical views of *civilization*."

In his conclusion, he stops short of insisting that those of us who are not proficient in math need to master the intricacies of calculus and its mysterious grammar. Several times, in fact, he illuminates his own meaning by translating the calculus into less intimidating language. Then he adds, "A more efficient approach, I believe, is to open the door from the other side—to import from other disciplines academics with an interest in history, and to foster interactions through them. Such importation," he

continues, “has happened before, and to great success: von Ranke’s background in philology, for example, significantly energized his approach to history.” (p. 19)

In his very last sentence the doctor characterizes his interest as one of “*Mathematical History*—a common platform to objectively discuss our shared past.” Since my perspective is that of a Christian Humanist, the contrast between us is interesting. It may stimulate both fresh dialogue and even insight.

My approach now will be not so much a pro or con production as an inquiry into the body of what the good doctor proposes within his beginning-ending framework.

First, *do I correctly understand what is being put forth?*

Second, *what are my points?*

Here’s a partial list plus some samples of how I develop my thoughts and defend them. I do welcome Dr. Perumpanani’s clarification of his position and his supporting arguments, as well as his critiquing of mine.

1. The city of Nagasaki’s violent yet peace-producing history is parallel in important ways to the efforts of many able scholars to answer the still unresolved question: “What is civilization?” (This has become my thesis statement based in part on some translation I have done from the Japanese. That labor of love in turn has inspired me to engage in further comparative historical research.)
2. I share an important perspective with Dr. Perumpanani. I fully concur with his hope to bring about a “convergence in the widely differing historical views on *civilization*.”
3. However, I suspect that my own approach has more in common with thinkers such as Rob Bell, Huston Smith, Ray Kurzweil, and Eiji Hattori than with Professor Perumpanani.
4. As I see it, the issue is much more tangled and perplexing than the professor’s mathematical and scientific approach. Gödel’s Theorem seems to me to overturn some of his hopes at the outset of his project.

By means of complicated arguments using the tools of math and symbolic logic, Gödel concluded that since logic requires us to deduce every statement from some other statement, there has to be what I would call a Mother Statement. If it is derived from *within* a system (for example, the system of scientific methodology itself), where is the “Grandmother” of that system? Oh, of course, “outside the box”! Then we are into an infinite regress, aren’t we?

From what ultimate axioms do these disciplines derive? To the answer, “From some kind of intuition, revelation, or discovery,” a next question naturally arises. That is, “From what will any new discovery or set of axioms arise?” To appeal only to former discoveries or assumptions is not only circular, it loses the *dynamic* quality Perumpanani emphasizes. It has more the ring of a static deductive system. *Dynamism* is also weakened by the title *Civilization Defined*; I would have preferred *Defining Civilization*.<sup>1</sup>

5. To give him the full benefit of the doubt, let us assume I have grossly misunderstood what the lead article is saying. Dr. Perumpanani may only wish for us to face the fact that a “perfect” definition ever eludes even the best minds and that, in a calculus-like way, we may move forward without ever touching any graphic perpendicular. In that case we simply have to settle for a real-life graph in which we arrive by infinitesimal jumps closer and closer to what we need until we reach what suits us “for all practical purposes”.
6. Let us then use this “dynamic” interpretation to peer through an intellectual microscope at Dr. Perumpanani’s seeming dismissal of comparative historians indebted to Toynbee’s work. Did not Toynbee suffer from a far too simple assurance that *civilizations* must be “the creative response of people to physical challenges imposed upon them, in other words, a pattern imposed by geography?” (p. 18). If Toynbee—or any other writer on civilization—is a geographical determinist, I am on Dr. Perumpanani’s side of the debate. Any definition that has geography as determinant (deterministic?) may be claiming either too little or too much.

We do not need calculus or even algebra to understand this. Two technical terms in definitional logic, *denotative* and *connotative*, should help us. To use a trite example, if I say, “All men are mortal,” and you ask, “What do you mean by *men*?” I might answer with some synonym such as “people” or “human beings” or I might point to Sue or Joe as examples of what I mean. I would then have given a denotative *meaning of meaning*. You might understand that I had displayed two members of some kind of set (or collection) of individuals, but in exasperation, you might respond, “That is not what I meant by *mean*! I recognize Joe but your Sue may be some kind of realistic robot. How do you characterize the entire set of what you call “human”?”

Now matters become really messy. How close does a robot or “artificially intelligent” device need to approach the way we are and the way we behave to be

---

<sup>1</sup> For scientific progress alone all theories and procedures may be regarded, not as true or false, but simply as useful until improved or replaced by subsequent developments. This pragmatic interpretation is fine, but I assumed from the title and some of the text of “Civilization Defined” that Dr. Perumpanani was seeking *truth* not simply usefulness.

included with us under the designation “human” and/or “intelligent”? I do not believe that science or social science will ever do full justice to either “human beings” or “civilized human beings.” Consequently I do not believe either Dr. Perumpanani or I will be able to say *exactly* how right or wrong, adequate or lacking, a prolific writer such as Toynbee is in his approach to the meaning of “being civilized.” Characterizations, brief or long, always veer toward saying too little or too much.

As a person trained in the humanities and social sciences I will probably always remain unsure as to whether Dr. Perumpanani’s conclusions do justice to Toynbee’s total vision—a vision that involved the arts, humanities, and religion in an inclusively global perspective. Nevertheless I sincerely believe that there is something of both descriptive and normative value in the second part of the definition that reads “. . . *development through economic activity aggregated across elements of its data*. I would like to invite Dr. Perumpanani to explain what these words mean. He has succeeded in giving such explanations in other parts of his essay.

7. I tend to see most definitions as too simplistic in the sense of being out of touch with reality as a complex dynamic process, which I view as an increasingly paradoxical system retreating or advancing into more and more darkness, mystery, and perhaps miracle.

Nagasaki itself is a paradox of hatred and love, toleration and martyrdom, war and peace. Its history reveals an exercise of human reason, scientific and medical commitments, and a wide range of deep empathy with others.

*The Rotarian* for November 2012 carried an important interview with Harvard’s Professor Steven Pinker on his latest book *The Better Angels of Our Nature: Why Violence Has Declined*. One trait that the evolution of cities has bequeathed to us is the invention of *treaties*; city states give humanity longer and longer pauses between wars. In the objective sense this has given students of civilization one criterion for civilization’s definition. But “being civilized” can carry the humane and other connotations that enter the moral and *value* realms. They transcend the purely descriptive, quantifiable forms of definition which Dr. Perumpanani seems at times to demand.

Even the history of Nagasaki contains surprises: “saintliness” spreading because of the crucifixion of saints; tolerance and cooperation arising after very competitive, violent struggles among religions—to name only two of the more obvious examples. The Perumpanani tools include: the written and spoken language of English; mathematics ranging from simple arithmetic through algebra all the way to calculus; and technical languages suited to such fields as medicine, economics, and history.

8. There is a remarkable and somewhat disturbing parallel between understanding “civilization” academically and understanding each other’s native languages.

Somewhere in the earlier part of my academic career I became fascinated by Japanese language, history, and culture. For a number of years I have found pleasure and frustration in moving back and forth between English and Japanese. It has amazed me how difficult it is to enter another culture or civilization from the standpoint of one’s own background. This difficulty, I believe, must be squarely addressed in “defining civilization”.

My contention is that change is so fast and unpredictable that without time-lapses for attention to local variations in custom and culture, understanding each other will always be a bit tardy even if just for practical purposes such as in business. Native Japanese speakers use their word for “Yes” in a quite different way from American business negotiators who have often, to their grief, understood the word to be a simple yes. They suppose the Japanese *hai* is an equivalent to our Yes. However, depending on context, the Japanese word can mean yes, no, I’m paying attention, or simply maybe. In a business situation “yes” or “*hai*” may sound like “Let’s sign the agreement and go out for a game of golf!” On Japanese ground—and sometimes even in New York City—a smiling Japanese negotiator may only mean, “We understand what you are saying” even when the “understanding” is a mirage. In any case the word for “yes” almost never means, “Let’s draw up the contract before we go to lunch.”

Even more confusing is the lack of verbs in many Japanese sentences as well as the paucity and ambiguity of pronouns such as: I, you, they, or it. The uninitiated may scratch his or her head and wonder, “*Who* indeed *said* or *did* that?” Or, “What does that Japanese speaker think is *happening*?” I am, of course, referring to an utterance in which the speaker uses no verb.

Fumiki-san, the author of “Seeing Nagasaki,” illustrates some of what I am saying in an even more dramatic but literary and aesthetic fashion: A pine-covered hill was visible in the foreground of the painting, and in the far distance, the blue-green ocean seemed to frame the islands that dotted the scene. I remembered a poetic quotation from an eight-volume collection of joyful, auspicious poetry. Here’s the quotation:

*Toward the interior of this brightness there is a simplicity,  
an artlessness as the koto is played.  
The sound must emulate Autumn’s beauty.  
In such stillness the koto seems to tingle.*

I, Fumiki Narita, enjoyed this stillness while it lasted.

## Further Reflections On Defects In Any Purely Mathematical Theory Concerning Life or Civilizations

Note that Fumiki's interest in stillness is explicitly mentioned only in the last line of the poem. Fumiki is speaking of his *feeling* as he enjoys a pictorial representation of scenery. Since there are fewer Japanese kanji (Chinese characters) than usual in this poem and more Japanese phonetic symbols, we may infer that the poet was a woman. Only men were supposed to be educated enough to use Chinese characters. Some ladies knew quite a few of these kanji but were demure or canny enough not to go public about their achievement.

We should add that the wording of the poems is so difficult and archaic as to suggest a quite early date in the evolution of written Japanese. Some historians have even hypothesized that the second bomb would not have been dropped on Nagasaki were it not for a linguistic misunderstanding between the leaders of Japan and the U.S.!

In addition, *feelings* do not easily or adequately yield themselves to quantifiable mathematical expression.

More important still is the fact that science itself seems more and more to be yielding, facing up to self-contradictory findings, as fully problematic as any in religion.

A number of years ago I wrote out a sixteen-page doubled-spaced lecture on the question, "How Nearly Identical Are Religion and Science?" My tentative conclusion was probably fairly modest when I first presented it in Japan, Hong Kong, and Singapore. Even then I agreed with Allen Watt's Zen-like observation, "When someone draws attention to the implicit unity of polar opposites we feel something of a shock." (Alan Watts, *The Two Hands of God* (New York: Collier Books, 1969, p. 46)

Allow me to add the word "science" to the word "technology" in the following quotation from Fritz-Joachim von Rintelen's *Contemporary German Philosophy* (Bonn: G. Bouvier u. C. Verlag, 1970, p. 171) and you have a sentence remarkably prophetic of my position in 2013: "The preeminent philosophic task of the present is to unite a high estimation for the actual, inner human values with a mastery of modern science-technology and its possibilities."

In today's world I believe this would lead not only to movement toward Dr. Perumpanani's goal of a convergence of understandings about *civilization* but also to a whole basketful of "impossible possibilities" in the advance of scientific knowledge.

To face a true ethical dilemma in von Rintelen's sphere of human values is not like putting potatoes on a scale to determine which is heavier. Nagasaki's Dr. Takashi Nagai illustrates dramatically the continuing relevance of the city's history, as intimated in

Point 1 above. His *The Bells of Nagasaki* explains this scientist's awareness that his research into the medical uses of radiation for treatment purposes could also be turned astray for hugely destructive purposes. Surely civilization's ethical cognate "civilized" is in an entirely different category from measuring the weight of potatoes.

To *be* civilized is to *estimate* the amount of good one's actions will bring as opposed to harm. At first, Dr. Nagai, along with the rest of us, had no idea how close the world's top scientists were to being able to develop an A-bomb. His ignorance of what lay ahead made his decision to continue a merely academic inquiry into the beneficial, even benevolent uses, of radiation relatively easy. *Should* he have dropped this mere academic stuff for the urgently needed preparation in first-aid and the saving of life? That would be an unreasonable ethical expectation in the light of his total ignorance of the pending tragedy.

Ignorance allows all of us to disregard ethical quandaries about the *honest* weighing of potatoes (before the existence of merchants or quantitatively accurate scales); by the same token, before the evil consequences of nuclear developments were existentially experienced, Nagai could in no way be held ethically accountable for horrors not yet known or even generally imagined.

When Dr. Nagai's healing services were hopelessly disturbed -- in fact, virtually wiped out -- what he and other survivors faced was almost too high a mountain to climb, "a possible impossibility" if you will. I put the word "possible" first because, with his leadership, the almost "walking-dead" among his medical students and first-aid staff rallied to form a working group, then saved lives, bound up terrible wounds, reduced pain and, when possible, helped the dying die with some awareness of loving care. They even respectfully handled the remains of the dead though it was all but largely impossible due to scattering and loss.

When we approach the self-contradictory discoveries of modern science, they may seem trivial compared with nuclear threats to us and our environment.

Rob Bell takes a mockingly frivolous approach to uninformed "knowledge" about science and religion in his critically acclaimed *What We Talk About When We Talk About God* (Harper One, 2013). His conclusions ultimately converge with God-talk and ethical sensitivity.

Before that convergence, all readers can enjoy Bell's "quirky talking about a quirky society and culture." One thing he undermines, at least for the general public, is "scientism", a dogmatic heritage from the Enlightenment. To be a thoroughly modern Millie --at least a rational person--you can entertain *no* ultimate dilemmas or paradoxes in true science or matters of "fact".



Let's look at a few emerging facts he has fun with.

The chair you are sitting in is made of atoms, and “atoms, it turns out, are 99.9 percent empty space.” (p. 43).

We earthlings think we have some grasp of gravity and the size of things affected by it, but the universe contains some bodies called *neutron stars*. These stars “have such strong gravity at work they collapse in on themselves” and “can weigh more than two hundred billion tons—more than all of the continents on earth put together. . . . *and fit in a teaspoon.*” (p. 27)

“If an atom were blown up to the size of a stadium, the nucleus would be the size of a grain of rice, but it would weigh *more* than the stadium.” (p. 33)

Can “scientific” rationality survive one more conundrum? Niels Bohr and other quantum physicists “realized that particles are constantly in motion, exploring all of the possible paths from point A to point B *at the same time.*” (p. 36)

They literally are not anywhere until you ask where they are now or next, so. . . . “They’re simultaneously everywhere and nowhere.” (p. 36)

While Bell is the first to admit that he not a scientist and hence “only” secondary source, his notes and bibliographies at the end coincide what I have independently discovered in the literature. In order to prepare us for something of a shock when we at last come face to face with most recent developments in physics *and* religion, Rev. Bell uses two metaphors, your *antique car* and *hum*.

He introduces us to the comic absurdity of much of our antiquated 21<sup>st</sup> Century talk about science, God and ethics. At least some of our readers still enjoy tinkering with and even driving an antique Oldsmobile to car parades or public shows. Yet the same individuals wouldn't dream of substituting their precious toy for their 2011 Ford Focus just in order that they might daily experience the thrill of driving it in TODAY'S heaviest Los Angeles traffic.

Bell continues his satire on God-like Oldsmobiles with this story: “My friend Cathi recently told me about an event she attended where an influential Christian leader talked seriously about how he didn't think women should allowed to teach and lead in the church. Cathi, who has *two* master's degrees, sat there stunned.” (p. 6) Increasingly, as we've illustrated above, scientific discoveries are being made that have profound implications for this century and even for our future lives on this planet and in the cosmos.

What is that *hum* I hear? Is it the antique Olds in my shop-garage? Or is it “what Jane Fonda spoke of, being drawn to faith, because *I could feel reverence humming in me?*” Bell speaks of his love of that phrase because “it speaks to the experiences we all had—moments when we’ve found ourselves deeply aware of the *something more* of life, the *something* else, the sense that all of this might just mean something, that it might not be an accident, that it has profound resonance and that it matters in ways that are very real and very hard to explain.” (p. 10). A humming resonance!

I predict that infinite— at least mysterious— non-circular reasoning will become more and more of a challenge in dealing logically or scientifically with either the past or the present. What about the future? (Some of the most recent controversies that have raged concern the “God-particle”.)

Consider what the *Economist* editors have to say on p. 85 of their May 25, 2013, issue.

*For time to be “real”, in Mr. Smolin’s sense, it cannot be relative. But nor can it be absolute in the Newtonian mould, where the future already exists, by dint of inexorable logic. This leads Mr. Smolen to some audacious ideas. He challenges not only Einstein’s relativity, but also the very notion of natural laws as immutable truths. He also questions the usefulness of mathematics in modeling the universe in its entirety. Models shed light on processes which recur; the universe, by definition, happens just once.*

It would appear, then, that neither logic nor science can lead us beyond *controversy*. Progress in either discipline seems to lead us ever deeper into paradox and fruitful but never fully resolved controversy. In the same *Economist* article on the future of physics, “Beyond Numbers,” the future of science is addressed by this brief listing of sources. Just the titles seem at some odds with each other, don’t they?

**The Universe Within: From Quantum to Cosmos.**

By Neil Turok. *House of Anansi Press; Faber and Faber*

**Farewell to Reality; How Modern Physics Has Betrayed the Search for Scientific Truth**

By Jim Baggott. *Pegasus; Constable*

**Time Reborn: From the Crisis of Physics to the Future of the Universe.**

By Lee Smolin. Houghton Mifflin Harcourt Lane

**Beyond Numbers**

I wish to propose to Dr. Perumpanani the following exchange. If he'll try to explain to me in non-mathematical language what he means by the phrase (from his definition of civilization), "*economic activity aggregated across elements of its data,*" I'll try to communicate to him why there may be a reverence that vibrates in all of us, though it cannot be weighed. Perhaps it resembles in some ways that deep trembling that we feel when those mysterious "plates" slide against each other. . . .