1.3 World Game Hypothesis
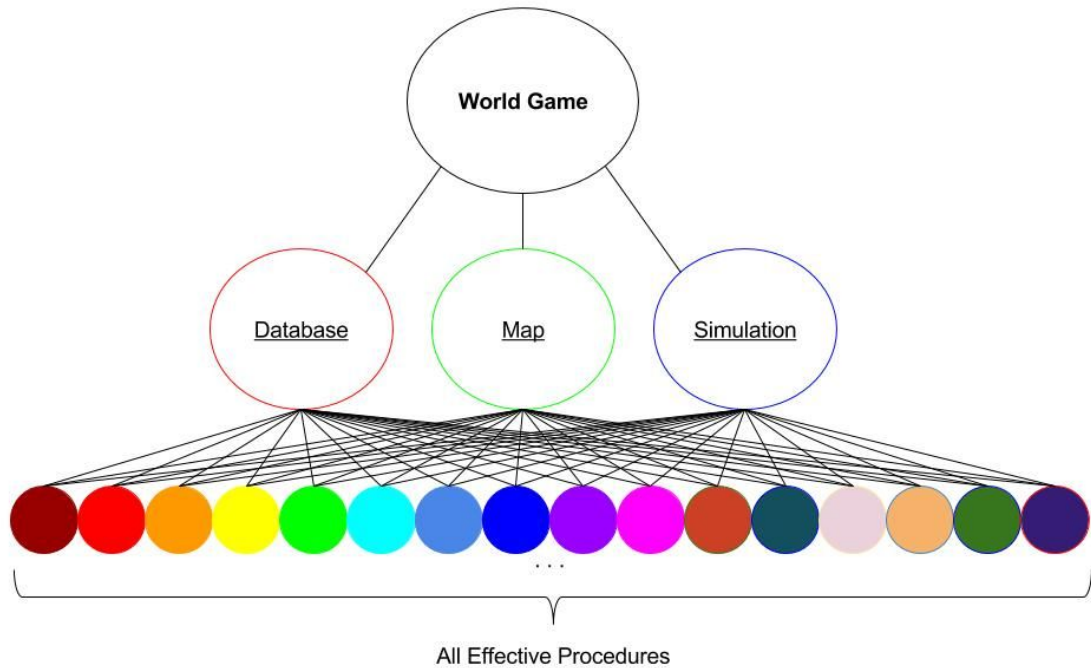

Figure 4: Completeness Theory

Database: A "world resources inventory: human trends and needs" database which is secure, precise, and would serve as the apex of planetary bookkeeping.

Map: A world map projection without visible distortion of the relative shapes and sizes of Earth's continental contours, that allows for the global display of geometrically-accurate world data.

Simulation: In the thesis I make the distinction between visualization and

simulation: visualization is reserved for animating known data (e.g. showing

population growth over time from the past to the present); simulation is reserved

for animating data that extrapolates historical data to predict future data (e.g.

weather prediction).[32]

In logic there is an architecture for the limits of computation, otherwise

known as Turing Completeness. Turing Completeness, from our friend Alan Turing,

defines a set of capabilities a computer can do. A computing language is really a

formal calculus capable of representing 'universal' computation according to the rules

of some formal language, explicitly described through a metalanguage characterizing

language categories and expression formation.[33] Turing Completeness is such a

metalanguage. It is a language that defines a language. All the wonders of the modern

world stem from such formal languages. We are meant to believe that the wildest of

claims can be substantiated through a reference to a proof of Turing Completeness[34].

It is from these kinds of architecture that I derive my hypothesis that World

Game is an operational formalism which embraces all effective procedures for

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[32] I use the visual cue of <u>underlining</u> and the "+" sign to facilitate memory: <u>database</u> + <u>map</u> + <u>simulation</u>

[33] My syntax style for describing Turing Completeness comes from Dr. John Kadvany.
Kadvany, John. "Pāṇini's Grammar and Modern Computation," Journal of History and Philosophy of Logic. 2016. Also see by same author:
http://johnkadvany.com/GettingStarted/Kadvany_Design/Assets/Downloads/IndistuinghableFromMagicKadvanyMindsMachinesFeb2010.pdf
Further, I did work on Kadvany + Pāṇini in a UCSC Logic and Computer Science course:
http://tinyurl.com/cmps217

[34] I am trying to distance myself from wild claims, yet am using the same possibility space to prove a point. Sack, Warren. *The Software Arts* (p. 338). 4 May 2017 manuscript version.

world-scale problem-solving, and thereby being necessary and sufficient for an Earth-scale civilization. I now introduce the notion of "World Completeness" to distinguish between models of computation like Turing Completeness and models of world-scale problem-solving I am proposing. There seems to be a synergy that occurs when dealing with the total planetary system which requires a model like World Completeness in order to comprehend. We have other Completeness models such as NP-completeness to help humans cognize these large conceptual spaces in a way that is scientifically acceptable. In this sense, World Game is World Complete as a formalism. The key is in the phrase "all effective procedures[35]" for which the database + map + simulation extend universal problem-solving skills covering all effective procedures in principle, but as we all know humans can be self-contradictory, so the World Game "game" aspect embraces the unpredictable human element: hence in effect *all effective procedures*. The idea that World Game is World Complete means that any other planetary problem formulation or solution formation from any other conceptual system could be translated into an equivalent formation through World Game and *vice-versa*. The fact is, there may not be that many other total-planet conceptual systems for problem-solving.

In plain English, my claim is there is literally no way to handle the complexity of the entire planet right now without utilising a database, a map, and a simulation.

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[35] The circular reasoning of what constitutes "all effective procedures" between Donald Knuth and Alonzo Church is disputed from being air-tight in light of actor-network theory. I am using this ambiguity to my advantage in order to secure an intuitive argument that World Game is non-negotiable going forward. Sack, Warren. *The Software Arts*. "Algorithms." 4 May 2017 manuscript version.

Which would therefore also mean no one is handling the total complexity of the total planet right now (emergency alert). Finally, we can get people to actually go along with reason and the truth by making a <u>game</u> out of it. Everybody loves games…

How far can we push our informal use of formal logic? Whereas it is easy to argue for the necessity of a database, a map, and a simulation for big picture problem solving — as these computational media[36] extend generic problem-solving skills, much as a hammer is an extension of the first — there is no known consensus regarding humanity's capability to achieve a world that works for all by any means due to the "meta-problem of humanity's self-contradictory behavior." Even if a world that works for all is handed to us on a silver platter, we might reject it, so goes the common argument. It is arguably unprecedented "to make the world work for 100% of humanity in the shortest possible time through spontaneous cooperation without ecological offense or the disadvantage of anyone."

There is a gap between necessity and sufficiency. In plain English, necessity means a required ingredient, and sufficiency means the thing will work. I submit that games are a reliable way to curb human irrationality through objective numerical feedback. Games are a favorable environment which encourage people to behave favorably[37]. "Spontaneous cooperation" can't be manufactured, but it can be

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[36] Wardrip-Fruin, Noah and Michael Mateas. "Envisioning the Future of Computational Media." Center for Games and Playable Media. 2014.
[37] "I said, 'How do we find out how to use our minds and experience to the highest advantage of others in the shortest possible time?' That was the challenge. Out of this, in due course, came a great many designs, because I said to myself, 'I must commit myself to reforming the environment and not man; being absolutely confident that if you give man the right environment he will behave favorably.'"

facilitated, inspired, and games are well-documented to encourage teamwork. I think a database + map + simulation are necessary and sufficient in and of themselves; however, since we are all acting in real time, the time it might take for the three to prevent the Earth's collapse "in the shortest possible time" is dubious. World Game "game" acts as a catalyst, as a facilitator for the three ingredients, and because of the nature of real time, I am suggesting the game provides sufficiency with reference to speeding the adoption and compliance of the other computational media tools. Various contemporary problems such as climate change need solving fairly quickly, and my hypothesis is a game gives sufficient speed to a database, a map, and a simulation in order to make the world work. No matter the stakes, even U.S. presidential elections, people generally abide by the tally of objective numbers in a non-violent manner: be it vote count (Elections) or batting average (Major League Baseball) or basket count (National Basketball Association), or even bank account (Capitalism). The database + map + simulation are information gathering tools, and the game is a vehicle — without which we would not make it to our destination in time "on foot" — to use these tools for problem solving altogether making World Game the kind of problem-solving engine required for the coming critical years.

What do I even mean that everything can be solved? The game's objective — "to make the world work for 100% of humanity in the shortest possible time through spontaneous cooperation without ecological offense or the disadvantage of anyone"

Fuller, R. Buckminster. Robert Snyder, editor. *Buckminster Fuller: An Autobiographical Monologue/Scenario* (p. 39). St. Martin's Press. 1980.

— is the best answer. Stated another way: "to make it possible for anybody and everybody in the human family to enjoy the total earth without any human interfering with any other human and without any human gaining advantage at the expense of another."[38] Normally, for a scientist to become excited about a big picture idea, these claims require a rigorous proof. One such type of proof is called proof by contradiction. As your World Game tour guide, I want to introduce the types of thinking that go into proving something in formal logic to get a sense of the excitement a scientist feels when they can definitively grasp something by the syntax and semantics of a proof. I call this section a 'hypothesis' within the thesis. Like arguments about God, it is difficult to prove or disprove hypotheses as they take on more and more dimensions. So I don't think the hypothesis can be proven or disproven until we try and build the planet-sized structure. I offer my intuitive proofs as an offering since the hypothesis begs the question for some comment on the feasibility of the hypothesis. Here is an intuitive argument for the necessity of my claim:

In general, if our goal is the survival of our species, it is a contradiction to say we could do without any one of the computational media of a database, a map, or a simulation. Consider if we left out any of those three components. Without a

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[38] Fuller, R. Buckminster. "BUCKMINSTER FULLER Presentations To Congress THE WORLD GAME" (p. 9). HEARINGS BEFORE THE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS OF THE COMMITTEE ON GOVERNMENT OPERATIONS UNITED STATES SENATE NINETY-FIRST CONGRESS FIRST SESSION on S. Res. 78 TO ESTABLISH A SELECT SENATE COMMITTEE ON TECHNOLOGY AND THE HUMAN ENVIRONMENT. 1969.

database, we have no record, and would fall apart instantly — it would be like having

constant amnesia. Without a map, we would be swimming in a sea of numbers — it

would be like having total sensory loss. Without simulation, we would be risking

everything at every juncture — it would be like a game of chance instead of a game

of strategy. World Game would essentially be a World Brain[39], as essentially a brain

is a storehouse of memories (database), a brain processes sensory input, especially

vision (map), and a brain imagines different scenarios of reality through thinking

about stuff — my thought of an apple is a simulation, it is not a real apple

(simulation). Humanity is the mind directing the world brain. Think of it like this:

science itself is a kind of metalanguage that says you must be able to reproduce an

experiment carried out by the scientific method if you wish to possess the truth.

World Game is a kind of metalanguage that says you must use these computational

media components if you wish for the human species to continue satisfactorily

surviving and evolving. Beyond this intuitive sense, it is not within my scope to

provide a formal proof from the discipline of logic or mathematics. I think common

sense is enough here. Here is an intuitive argument for the *sufficiency* of my claim:

> Many forms of Government have been tried, and will be tried in this world of
> sin and woe. No one pretends that democracy is perfect or all-wise. Indeed it

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[39] "Our world game will be in effect a world brain. It will free world mind from occupations of brain slavery. Human minds employ the world brain to solve the problems of all humanity thus escaping the previous recourse only to the individual opinions of too myopically preoccupied ill-informed men." Fuller, R. Buckminster. "World Game Series: Document One." World Resources Inventory, Southern Illinois University. 1971.

has been said that democracy is the worst form of Government except for all those other forms that have been tried from time to time.… - Churchill[40]

In this world of sin and woe, it is not sufficient merely to have the tools, in this case the three computational media components, in order to achieve sustainability. We can lead a horse to water, but we cannot make it drink: even if everything we need is handed to us on a silver platter, we might reject it, so goes the common argument. It is in the way solutions are formed through World Game's protocols that we attain sufficiency. We attain sufficiency through World Game's comprehensive use of computational media, in particular World Game "game." The *de facto* sufficiency *lemma* is Jane McGonigal's *Reality is Broken*, where she argues games give people a sense of purpose, and purpose gives people the will to win in the face of impossible odds; also see *Superbetter*[41].

We all know there are as many differences of opinions as there are nations, and cities, and people. Having a game based in reality in which global players can get numerical feedback about the success of any given proposal they make regarding changing the way we do business on Earth is by far the best chance we have for "not fighting forces, using them."[42] Human nature has been a certain way for a long time, and gameful competition is a channel to route our rowdy energies into finding

[40] Churchill, Winston S. 11 November 1947. "Quotes." The International Churchill Society. 2017. https://www.winstonchurchill.org/resources/quotes/the-worst-form-of-government
[41] Dr. McGonigal autographed my copy of *Superbetter* with the note "Play with purpose". Her note has accelerated my thinking on the matter.
[42] Fuller, R. Buckminster. *Critical Path* eBook edition. Estate of R. Buckminster Fuller. 2015.

optimal designs. The Olympics have been used this way, the World Cup. We are

willing to come together for games world over. Now, we make a game out of making

the world work. Whoever finds solutions that work at scale will find, in a word, glory.

And I think more than that, unprecedented glory.

Fuller provides much more than just World Game "game" in *Critical Path*,

which is ostensibly his World Game thesis, though he does not make as strong

academic claims as I am making regarding World Game. There is also a whole slew

of comprehensive use of computational media components including algorithmic

distribution of resources through credit card tracking, computational democracy

through online voting, education automation through video chatting and network

encyclopedias, etc. The total net synergy of Fuller's World Game is sufficient in the

only way things are sufficient for human cultures: by getting basic needs met,

including the need to demonstrate competence through games, and especially the

thirst for knowledge:

> I am certain that none of the world's problems—which we are all perforce
> thinking about today—have any hope of solution except through total
> democratic society's becoming thoroughly and comprehensively
> self-educated. Only thereby will society be able to identify and
> intercommunicate the vital problems of total world society. Only thereafter
> may humanity effectively sort out and put those problems into order of
> importance for solution in respect to the most fundamental principles
> governing humanity's survival and enjoyment of life on Earth.[43]

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[43] Fuller, R. Buckminster. *Critical Path* eBook edition. Estate of R. Buckminster Fuller. 2015.