

Ethically-Supreme Scientifically-Universal Logic

The Objectively Greatest Common Good

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What's the biggest source of cultural insanity?

“Everything should be made as simple as possible, but not more so.”

—Albert Einstein

Conventional logic is a great cultural achievement, but it's not full-fledged scientifically-universal logic. Conventional logic is an over-simplified hodgepodge, albeit a very useful one.

Conventional logic is the logical counterpart of Roman numerals. Imagine what a mess modern business and engineering would be if we still used Roman numerals.

Conventional logic is also riddled with hidden ontological defects (pertaining to logically-fundamental concepts and categories). Using conventional logic in our complex modern world is like driving cars with loose steering wheels. That's the main reason that {philosophy, the social sciences, the USA economy, and the world at large} are such huge messes.

It's much better to teach people modern arithmetic than berate their difficulties with Roman numerals. It's much better to fix steering wheels than berate drivers for erratic driving. Such simple improvements can have extremely far-reaching compounding consequences for civilization. So too for logic. Especially so for logic.

How can we escape the illusions of conventional logic?

“The great barrier to progress is not ignorance, but the illusion of knowledge.”

—Daniel J. Boorstin

Conventional logic gives the illusion of being more scientific than it really is, which is a huge problem for our complex scientifically-dependent civilization. Fortunately, others have already made the key logical breakthroughs to overcome the systemic problems of conventional logic. For example, the action axiom of Austrian economics is one of the important leading edges of scientifically-universal logic, but there are other important advances as well.

“In conceptual analysis, as in brain surgery, the work that can be done is delimited by the refinement of our tools.”

—Donald W. Mertz

The heart of scientifically-universal logic requires explicitly incorporating logically-fundamental values and logically-fundamental multi-way relationships. Paying ritual homage to {objectivity, objective values, semantic realism, and so on} is marginally useful if you don't logically systematize them into an integrated power-tool of science.

So we'll begin by concentrating on the value-centric heart of logic. This short-cut will serve as the master key for reforming and upgrading conventional logic. This simple approach will facilitate a systematically-coherent integration of logic, ontology, and the other sciences.

Why learn about scientifically-universal logic?

“Look always at the whole.”

—Marcus Aurelius

We'll later see that (among other things) scientifically-universal logic is the ultimate foundation of hard-core scientific-ethics, which constitutes the long-desired “scientific conscience of science”. This also turns out to be the objectively-greatest common good. So learning about scientifically-universal logic should be a huge priority for everyone.

Scientifically-universal logic entails the neighborly attitudes of “live and let live” and “peaceful coexistence” (plus a generally entrepreneurial-creative outlook), so you needn't worry about “culturally oppressive scientific hegemony”. Scientifically-universal logic is the most powerful basis of {local and global} defenses against widely-prevalent less-neighborly attitudes.

“Logic is invincible because in order to combat logic it is necessary to use logic.”

—Pierre Boutroux

We aim to nudge the semi-inevitable progress of logic along a bit faster by spreading the “ethically-supreme scientifically-universal logic meme”. This supremely-pragmatic concept will eventually make the world much more healthy, wealthy, peaceful, wise, and fun.

You risk becoming a carrier of this scientifically-supreme meme if you keep reading.

Towards scientifically-universal logic

“We can speak to each other only because we can appeal to something common to all of us, namely, the logical structure of reason.”

—Ludwig von Mises

This overview of scientifically-universal logic will spare you the technical details (which can be found in the references given at the end of this article).

The first step towards sanity is recognizing that conventional logic is the shadow of scientifically-universal logic.

“The most pervasive fallacy of philosophic thinking goes back to neglect of context.”

—John Dewey

What's the ultimate context of logic for purposes of reforming conventional logic?

“The most wonderful discovery made by scientists is science itself.”

—Jacob Bronowski

Science fundamentally constitutes an objectively universal value system. These conditions of {fundamentality, objectivity, and universality} are very powerful constraints of this system. As such, this system cannot be logically derivative of anything else, so the primary science of scientifically-universal logic must explicitly incorporate logically-fundamental values. The rule that “you should be reasonably logical” is a rule of logic (versus something external to it) — to deny this is to deny the unconditional objective primacy of logic. Even when in error, all

attempted realistically-meaningful thought inescapably presupposes the objectively universal instrumental value of logic.

“The art of doing mathematics consists in finding that special case which contains all the germs of generality.”

—David Hilbert

Of course there’s much more to logic than logically-fundamental values. But this special case is powerful enough to extract us from the tar pit of conventional logic, and then catapult us into the scientific promised land of scientifically-universal logic.

Back to basics — the logically-fundamental axioms of scientific logic

“Nature uses only the longest threads to weave her patterns, so that each small piece of her fabric reveals the organization of the entire tapestry.”

—Richard Feynman

To be scientifically-universal, logic must be the grandmaster science of realistically-meaningful thinking (versus purely abstract rules of inference), and it must be constituted by the ultimate logically-fundamental laws of reality. These logically-fundamental universal laws are the axioms of logic. (Don’t confuse this case with mathematical conventions, where the {status and role} of axioms often significantly differs.)

The logically-fundamental scientific axioms are logically-irreducible conceptual truths that are inherently logically-irrefutable invariants, which thus cannot be denied without generating contradictions. These logically-fundamental axioms are mutually-interdependent, so beware of bogus attempts to reduce away axiom interdependencies. These logically-fundamental axioms are mutually-fundamental, so beware of falsely-inverted fundamentalism, which wrongly regards some axioms as more fundamental than others because of {relative generality, order of recognition, or other incidental factors}.

The logically-ultimate axioms of science are logically prior to many beguiling categorical false dichotomies of falsely-inverted fundamentalism — such as “empirical versus rational”, “analytic versus synthetic”, “a priori versus a posteriori”, “fact versus value”, “science versus religion”, “mental versus physical”, “mind versus body”, and so on. Leave those archaic tar pits to the illogical dinosaurs.

“If we wish to understand the nature of the universe, we have an inner hidden advantage: we are ourselves little portions of the universe and so carry the answer within us.”

—Jacques Boivin

We already have to be thinking semi-logically to think at all. We can use increasingly-sophisticated webs of thought-centric (but not exclusively so) experiments to systematically converge on demonstrably-ultimate axiomatic truths. Conventional scientific experiments amount to instrumentally-augmented thought experiments (which are hugely-advantageous, when feasible).

We don’t need conceptual perfection for attaining great realistic certainty. We know for sure that we are fallible, and that we are not omniscient. We can do much more along such lines. We’ll pursue systematic means of {corralling, constraining, or otherwise circumventing} inevitable residual {imprecision, uncertainty, inconsistency, and error} for some special patterns of knowledge. We’ll see that the universally-scientific logical realm of practically-important great realistic certainty is vastly larger than conventionally supposed (despite still being a fraction of our overall knowledge).

Using reflexive jujitsu to find logically-invariant axioms

“I have tried to avoid long numerical computations, thereby following Riemann's postulate that proofs should be given through ideas and not voluminous computations.”

—David Hilbert

For brevity, we'll simply assume the classical logical axiom of noncontradiction, which (very roughly) states that something cannot simultaneously be true and false, at the same time, in the same place, and in the same respect. Recall Aristotle's warning that this axiom needs to be carefully amended by whatever additional qualifications are later found necessary for avoiding contradiction. This principle of careful as-needed refinement applies to all axioms.

“The important things in the world appear as the invariants of transformations.”

—Paul Dirac

The logically-fundamental axioms of logic constitute logically-invariant patterns of all realistically-meaningful thought. (However, that doesn't mean we can deduce everything from axioms, nor reduce everything to them.) How do we find these axioms in the first place? By means of logical invariance-seeking thought experiments that exploit axiomatic undeniability.

We'll use the ancient {Socratic, Platonic, and Aristotelian} method of experimenting with reflexive statements, meaning statements that are {directly or indirectly} {self-referring or self-applicable}. Our objective is to produce reflexive statements involving purported axioms that cannot be denied without generating performative contradictions, thereby demonstrating axiomatic identity. (We're concentrating on performative contradictions here, because they're especially useful for value-related issues. Other sorts of contradictions may be pursued in other cases.)

“Philosophy is a battle against the bewitchment of our intelligence by means of language.”

—Ludwig Wittgenstein

Considerable careful skill is required to get reliable results from this scientific method. It almost-inevitably eventually trips up the great thinkers that use it. The various subtle conceptual flaws that are implicit in our {culturally-inherited and haphazardly-evolved} language pose some major challenges, among others things. This doesn't mean that {language or our minds} are logically inadequate, but rather that the enormous power of our half-domesticated language easily gets out of hand, and readily leads us unwittingly astray.

“I'm not crazy about reality, but it's still the only place to get a decent meal.”

—Groucho Marx

Since there aren't any other scientifically realistic methods for pursuing this task, we just have to relentlessly do the best we can, until success is finally achieved. Fortunately, we have some 25 centuries of trial and error to learn from. (That's hugely helpful.) Plus we can judiciously employ multiple cross-checks, exploit interdependent axioms, and do comprehensive system building. (Prior work is hugely helpful here as well.) Once sufficient success is attained, we can go back and find a much simpler short cut to use — which is our next topic.

The ultimate-scientific-value axiom of scientifically-universal logic

“Science is a way of trying not to fool yourself. The first principle is that you must not fool yourself, and you are the easiest person to fool.”

—Richard Feynman

We’re now ready to logically-integrate the often-noted essential value system character of science and logic, which involves the supreme value of objective scientific realism. The “ultimate-scientific-value axiom” (USV-axiom) of logic states that the axioms of logic constitute the universally-objective instrumental value system of all realistically-meaningful thinking. (This value doesn’t preclude employing creative imagination or enjoying fiction — we just shouldn’t misconstrue such things.)

If we deny that the USV-axiom is true, we inescapably generate a performative contradiction. How so? Since the noncontradiction axiom is the basis of all realistically-meaningful distinctions between agreement and denial, we implicitly treated the noncontradiction axiom as an ultimate instrumental value in the course of denying the instrumental value role of axioms in general. Since the noncontradiction axiom further requires that realistically-meaningful thinking must avoid contradicting the other irrefutably-true axioms as well, they all share the same instrumental value status.

The key idea is that realistically-meaningful thinking {requires and means} that we {implicitly or explicitly} use the logical axioms as ultimate objective instrumental values — even when trying reject them. Since these axioms are logically-fundamental for all realistically-meaningful conceptual thinking, they have objectively ultimate instrumental value priority for conceptually comprehending everything (including themselves).

The ultimate-scientific-value axiom (USV-axiom) fundamentally precludes the bogus fact-value dichotomy (which we’ll suitably recast later). We’ll commence with a whirlwind tour that briefly highlights some other important implications of the USV-axiom for universally-scientific logic.

Getting personally logical — subjective preference values in action

“We seek to decode nature’s gigantic cryptogram in such a way that structures emerge which are conserved under various changes and metamorphoses.”

—Gottfried Leibniz

Another extremely important value axiom concerns subjective values. The “net-preferred-action axiom” states that our net personal (subjective) preferences regarding anticipated outcomes of consciously-recognized alternative courses of action are performatively demonstrated in our subsequent action (or inaction). Like the USV-axiom, this axiom cannot be denied without generating performative contradictions.

The net-preferred-action axiom is surprisingly powerful, because it provides the logical basis for deriving generally-applicable personal-value {trade-off and exchange} theorems of economics that are personal-value-invariant. (This is analogous to the use of dynamical invariance symmetries in physics.) This makes axiomatically-scientific economics possible, which is a scientifically-superior tool for economic analysis.

The “net-preferred-action axiom” is the same as the (misunderstanding-prone term) “action axiom” of the “Austrian school of economics” — which we call “axiomatically-scientific economics”. The USV-axiom led us to recognize the great scientific breakthroughs of axiomatically-scientific economics and its net-preferred-action axiom. However, the net-preferred-action axiom is a full-fledged logically-fundamental axiom of scientifically-universal

logic (versus merely being an axiom of economics). It's a common blunder to presume that logic is inherently devoid of all existential ontological commitments (which roughly means devoid of facts about actual categories and other actual sorts of things). Conventional logic still reflects such commitments, which are often flawed, and which thereby stealthily subvert our thinking. {The USV-axiom and the net-preferred-action axiom} are extremely important steps to reforming ontologically-retarded conventional logic.

If we consider how the preceding two value axioms of logic apply to {each other, ourselves, and other people}, we can see that universal objective values are a special case of personal subjective values that are person-invariant. We'll elaborate a bit more on value-invariance classes later. Meanwhile, we should avoid the common folly of misconstruing the important subjective-objective distinction as the bogus subjective-objective dichotomy.

The Universal Prime Directive of axiomatically-scientific ethics

“To preach morality is easy, to give it a foundation is hard.”

—Arthur Schopenhauer

To the extent that we (attempt to) think realistically-meaningfully in the pursuit of our personal preferences, we tacitly subjectively value logic. To think better, we should explicitly subjectively value the universally-objective instrumental values (axioms) of logic. That's a supremely-important reason for pursuing scientifically-universal logic. This reason naturally extends to the vastly larger realm of (axiomatically-scientific) derivative theorems of logic, with far-reaching implications.

The USV-axiom (ultimate-scientific-value axiom) means that scientifically-universal logic is the ultimate-foundation of axiomatically-scientific ethics. As such, scientifically-universal logic constitutes the objectively-greatest common good (which we'll discuss later). The universal prime directive of scientifically-universal logic directs us to prudently {recognize, use, and promote} scientifically-universal logic in the realistic pursuit of our personal interests, so as to improve our net quality of life. (The “net quality of life” condition inherently precludes counterproductive syndromes, such as paralysis by analysis, obsessive moralizing, and martyrdom.)

“But goodness alone is never enough. A hard cold wisdom is required, too, for goodness to accomplish good. Goodness without wisdom invariably accomplishes evil.”

—Robert Heinlein

Since axiomatically-scientific economics is a theorematic derivative of universally-scientific logic, it correspondingly inherits derivative objective priority in our thinking. This is especially important for economic policy decisions. Only good intentions that don't contradict axiomatically-scientific economics can be genuinely good. However, the USV-axiom allows axiomatically-scientific economics to go beyond correctly diagnosing economic irrationality. We can now make powerful positive (meaning objectively normative) economic policy prescriptions mandated by axiomatically-scientific ethics (as we shall discuss later).

“An army of principles can penetrate where an army of soldiers cannot.”

—Thomas Paine

The universal prime directive of axiomatically-scientific ethics concerns the logically-supreme basis for assessing political legitimacy (for any given criteria of it). Hence, all presumptively legitimate political systems must uphold the universal prime directive as their prime directive, and must act in moderately reasonable accord with it. This political corollary of the universal prime directive is the “fundamental theorem of axiomatically-scientific political science”.

Scientifically-universal logic should be the integral focus of all public education and science-related policy.

Mertz shows Gödel was right — conceptual (intensional) logic rules!

“Mathematical logic has completely deformed the thinking of mathematicians and philosophers.”

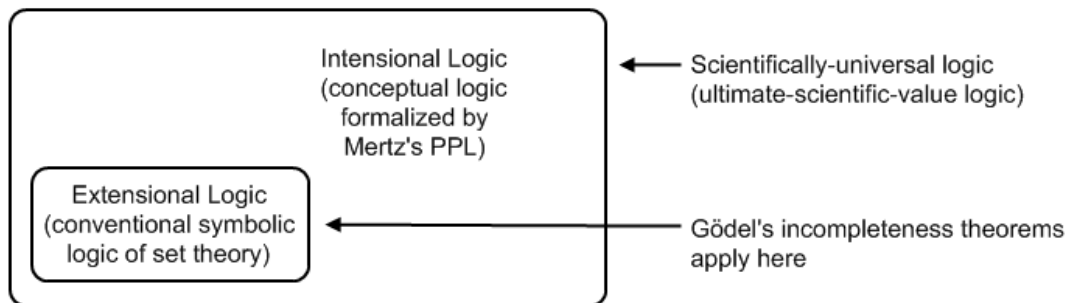
—Ludwig Wittgenstein

There are two major approaches to logic that we now need to consider. “Extensional logic” includes the standard symbolic predicate form of conventional (set-theoretic) logics. “Intensional logic” includes what can roughly be described as “conceptual logics”. (Don’t confuse “intensional” with “intentional”, which is yet another specialty.) “Philosophical logic” is a conglomeration that leans towards intensional logic informally, while often using the formal symbolism of extensional logic. These descriptions are very crude approximations, since the realm of contemporary (versus conventional) logic is amazingly {vast, diverse, rich, dynamic, and haphazard}.

These radically-different (intensional and extensional) conceptions of {logic and ontology} are often confusingly overlooked or otherwise mixed up. Ironically, Gödel (1986) called attention to this distinction, and he noted that a suitable intensional logic of concepts might not be subject to his famous limitation theorems. Kurt Gödel’s famous incompleteness theorems are notably theorems of extensional logic.

A widespread blunder of {falsely-inverted and falsely-generalized} fundamentalism (and historical ignorance) is the presumption that the extensional logic of {Gödel’s and Turing’s} great limitation theorems is logically-universal. This is perhaps the most scientifically-scandalous textbook example of having to overcome “things we know that aren’t so”. This still-widely-prevalent delusion has wreaked great havoc in philosophy (including the philosophy of science).

The USV-axiom is an axiom of intensional logic, so scientifically-universal logic must be predominantly intensional. The USV-axiom led us to look for (and helped us to recognize) the sort of great scientific breakthroughs made by Donald W. Mertz, which we’ll now review. The following diagram helps put scientifically-universal logic and Mertz’s conceptual (intensional) logic breakthroughs in perspective:



The 20th century’s greatest logician and greatest logical breakthroughs

“We must know, we shall know.”

—David Hilbert

Mertz (1996, 2006) has provided the first logically-fundamental ontologically-realistic conceptual logic that adequately realizes Gödel's vision. Mertz's system isn't perfect, and much development remains ahead — but it's still a fantastic advance overall. For scientifically-universal logic, Mertz's system constitutes a major part of “axiomatically-scientific realism” and “axiomatically-scientific ontology”. Mertz has discovered the fundamental {formal and ontological} framework for scientifically-universal logic, plus important new axioms.

One great reward of pursuing scientifically-universal logic was being among the very first to recognize the great scientific magnitude of Mertz's breakthroughs. Even though more than a decade has passed since we first discovered Mertz's work, the rest of the scientific world is still largely (and bizarrely) oblivious to his great breakthroughs.

Mertz's system is a brilliantly refined combination of the best insights of the neo-Aristotelian medieval scholastics and the best insights from modern {mathematics and ontology}. Mertz's system overcomes some exceptionally-tricky issues that {philosophers and logicians} have been continually struggling with for some 25 centuries. We won't delve into the technical details of Mertz's system here. However, here are some important highlights of Mertz's breakthroughs:

- It's an intensional logic in the literal sense of quantifying over intensions.
- It's not subject to {Gödel's and Tarski's} classic limitation theorems.
- It provides a provably-consistent means for intensionally deriving arithmetic.
- It's a consistent, extended, predicate logic without type distinctions.
- It effectively contains its own meta-logic. (There are no artificial splits into first order logic, second order logic, and so on.)
- It retains the classic deduction rules.
- It realistically resolves the “problem of universals” (involving the logically-ultimate nature of concepts) that has plagued {logic and philosophy} for some 25 centuries.
- It distinguishes between {legitimate and illegitimate} impredicative (at least partly-self-referring) reasoning that is essential for realistically-handling {self-understanding, recursive structures, and other paradox-prone topics}. It thereby provides a uniform diagnosis of classic self-referential paradoxes.
- It integrally incorporates particularistic polyadic (multi-term) relations, which are absolutely essential for realistically handling {comparative value relations, spatial relations, the foundations of modern mathematics, and many other things}.
- It integrally incorporates a one-category ontology sufficient for the {expressiveness and objectivity} of {thought and language}, and thereby overcomes the logical pathologies of traditional ontologies (such as substance-predicate, nominalist, trope, and so on).
- It can distinguish identity from indiscernibility.
- It can express its own truth predicate (meaning that it's a universal closed language in Tarski's sense).

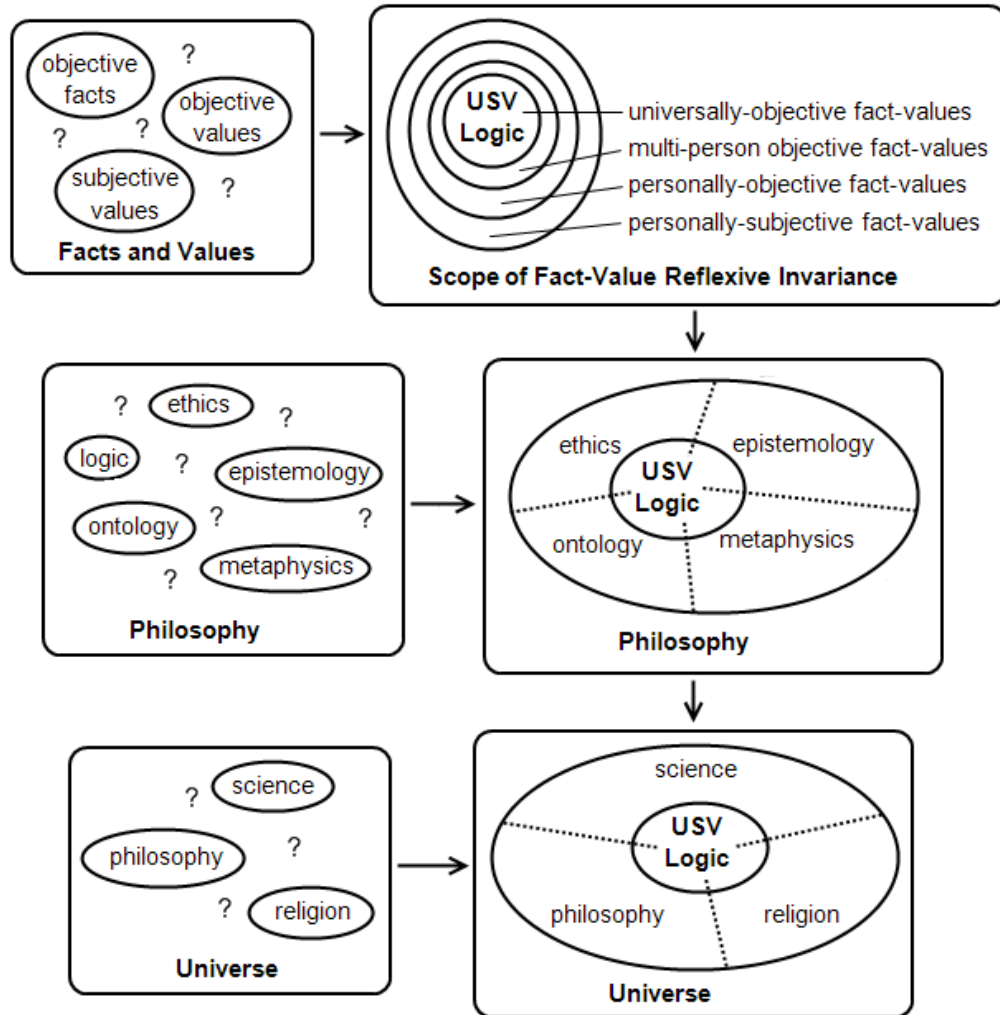
Mertz's system supercharges scientifically-universal logic. In terms of historical developments, this consolidation of scientifically-universal logic is somewhat analogous to the very earliest days of the still-growing {quantum theory and electronic computing} revolutions. However, the {development and deployment} of scientifically-universal logic (including all axiomatically-scientific applications thereof) is a logically more fundamental revolution, which will correspondingly have {profound and pervasive} implications for world civilization.

An axiomatically-scientific logical-value map

“The whole is over and above its parts, and not just the sum of them all.”

—Aristotle

The diagram below provides an overview of scientifically-universal logic. Scientifically-universal logic is the ultimate common denominator pattern of our inherently-scientific universe. The “USV-Logic” labels designate the scientifically-universal logic of the USV-axiom:



Using the upper-right panel of the preceding diagram, we can see how the misconstrued fact-value distinction can be validly recast as a prohibition against equivocating different invariance classes of fact-values.

Our personal objective aim values are subjectively implicit, and are not initially explicitly known. To “know thyself” involves investigating such things. Our personal objective aim values include duly {recognizing and reconciling} our web of more general personal subjective interest values, so as to better learn what’s in our objective best interest within the context of our dynamic personal interests.

Relative to aim values (a more general term than “ends”), instrumental values (a more scientifically-oriented term for “means”) are often regarded as logically-secondary or logically-derivative. However, the ethical exclusive-instrumental-primacy of scientifically-universal logic means that there are no valid alternative options for its role, and that it can’t be validly pre-empted. This means that the instrumental value of scientifically-universal logic isn’t subsidiary to any {person-specific, group-specific, or person-invariant} {objective or subjective} aim values. Instead, this supreme category of instrumental value is an ultimate constraint on what genuinely-objective aim values are possible.

This means that scientifically-universal logic effectively constitutes a universal objective aim value (system) that mandates that each of us should pursue our respective subsidiary objective aim values by logically-compatible means. In other words, the universally-supreme primal value of logic is the basis of the personal objective values of our {life, consciousness, and happiness}, rather than conversely. Our universe is thus inherently conceptually-intelligible, and it’s also naturally evolutionarily-progressive (but only in the overall average long run, versus in particular cases considered alone).

This is another sense in which scientifically-universal logic constitutes the objectively-greatest common good. This is also why it’s intuitively natural to seek a greater supreme value context from which the meaningfulness of our lives ultimately derives. Unfortunately many people mistakenly don’t seek beyond prominent-but-insufficient social group proxies of ultimate value, and thereby alienate themselves from still-greater realms of value, social and otherwise.

What else is scientifically-universal logic good for?

We’ve seen that there are two important value axioms missing from conventional logic. Mertz’s work further incorporates additional {comprehension and mathematical} axioms as logically-fundamental axioms. We should expect to find at least several more logically-fundamental axioms pertaining to other basic scientific {concepts and disciplines}. This shouldn’t be surprising. The “unity of science” would be a rather shallow slogan if it didn’t ultimately consist of a common core of logically-fundamental scientific axioms. So using scientifically-universal logic to reflexively-refine itself is one obvious application.

“Whether we see the greatest value in wisdom or in action, in neither case may we scorn science. It alone shows us the way both to knowledge and to action. Without it our existence would be only vegetative.”

—Ludwig von Mises

So far, we’ve concentrated on the very special cases of science that can be distilled into logically-fundamental axioms and derivative axiomatically-scientific theorems. But we certainly don’t mean to discount the extraordinary realm of {provisional and exploratory} science. On the contrary, the logically-fundamental axiomatic sciences should strongly promote the productivity of the {provisional and exploratory} sciences, which will further amplify the rate of wonderful technological blessings that relentlessly flow from them. In terms of biological metaphor, think “hybrid vigor”.

We’ll conclude our overview of scientifically-universal logic by offering some provocative application-oriented suggestions for your consideration. This prospectus aims to recast the prior work of others into a more systematically {comprehensive and coherent} axiomatically-scientific framework.

- Axiomatically-scientific ethics provides the only possible objectively-realistic specification of the ultimate objective good of world society, which provides an alternative framework for showing that the right of full personal self-ownership is the

scientifically-universal basis of human rights. The top-priority human right is the right to {learn and discuss} universally-scientific logic.

- The combination of axiomatically-scientific economics and axiomatically-scientific ethics can be used to prove 3 extremely important scientific economic policy theorems (which are also corollaries of maximally mutually-beneficial scientific progress):
 - Conventional fiat currencies cause bubbles and recessions (while enriching special interests at the expense of everyone else), and should be abolished. They are scientifically anti-empirical restrictions on communicating extended multiplexed market signals, which sabotages the ultimate economically-sustaining basis of scientific progress. The world's financial systems should allow true free markets involving 100% commodity-backed money.
 - Patent monopolies should be abolished, since they are inherently predominantly anti-scientific, anti-competitive, and anti-cooperative. The hidden indirect costs of patent systems are inherently much larger than the direct benefits to all {large and small} special interests. Moreover, enforcement of such patent monopolies involves violating scientific human rights.
 - Most contemporary voting systems are illegitimately structurally-biased against new entrepreneurial political parties, and thus against axiomatically-scientific economic reforms. All misrepresentative pseudo-democratic winner-take-all {primary and runoff} election systems should be replaced by preference-ranking instant-runoff voting systems (which should always include "none of the above" veto options), with proportional representation. This reform would eliminate the obviously anti-representative dilemma of whether to cast "wasted votes" for third-parties in close "lesser of 2 evils" elections. This reform would also greatly curtail culturally-counterproductive {false polarizations, false mandates, and false legitimization}.
- Axiomatically-scientific philosophy can correct some basic metaphysical errors. The logically-fundamental axiomatic facts of scientifically-universal logic are absolutely non-contingent, and inherently lack valid negations. Our universe-of-existence is logically-fundamental, which means that there is no opposite of universal existence (which must be carefully distinguished from other senses of existence). The answer to "why is there something (in the most-fundamental sense of universal existence) rather than nothing" is that nothing-at-all is an absolute impossibility. Our universe-of-existence is inherently eternal. Only the present exists (in the most fundamental sense), so past eras (or future eras) cannot be treated as if they were a coexisting infinite set, which thus precludes false arguments from infinity for a first cause (or for a final demise). Since causation is logically-fundamental and ongoing, positing any first cause situation that is exempt from ongoing prior causation amounts to invalidly amputating logic. So whatever the generally most-realistic scientific theory of cosmology turns out to be (whether a revised "big bang" theory or otherwise), it won't involve the absolutely-impossible creation of our universe.
- Axiomatically-scientific physics shows that some other aspects of contemporary physical cosmology are infected with errors of falsely-inverted fundamentalism. Among other facts, there is (and can only be) just one eternal universe-of-existence, space and time are perfectly continuous "all the way down", causal time is inherently exclusively cumulative, there is no literally-instantaneous action-at-a-distance, and there are no causal indeterminacies (despite instrumentally-inevitable appearances to the contrary). This doesn't mean that our most outstanding "phenomenological curve-fitting provisional

theories” should be abandoned, especially since “logically-realistic provisional theories” could take many decades to develop, plus hybrid theories seem most likely to eventually become the pragmatically-superior option for a very long time to come. For purposes of most-greatly-advancing fundamental physics (especially hybrid theories), extremely large telescopes (including arrays) are almost certainly going to be relatively more important than extremely high energy particle accelerators (even though they’re awesome too).

- Axiomatically-scientific philosophy can excise falsely-inverted fundamentalism errors from contemporary theories of consciousness. Consciousness is an inherently causal-value phenomenon — but consciousness is not an emergent phenomenon, nor is it an epiphenomenon, nor is it reducible to (versus being strongly associated with) something else. Free will is the fully-causal self-experiencing capacity of explicitly-reflexive value-centric conceptual deliberation, and has nothing to do with prior causal indeterminism. Causally-conveyed conscious {value and information} steer causal dynamics for our personal aims, in full accord with the net-preferred-action value axiom. For the conscious choice options of our lives, these self-organizing causal-value-information intensional-logic factors of self-appraising reason effectively reduce classical senses of predestination to background noise, despite fully causal dynamics. The practical effectiveness of free will is further enhanced by cultivating relevantly-good knowledge, virtues, habits, attitudes, and aims.
- Axiomatically-scientific ontology can resolve some important theological disputes, which are substantially mired in the ontological shortcomings of conventional logic. There is only one ontologically-possible God of axiomatically-scientific ethics. God constitutes the fundamental relational-ethical orientation of our universe. Scientifically-fundamentalist theology amounts to universally-scientific Deistic Taoism — God is the universal Way of increasing good. This was of course anticipated by the the Age of Enlightenment proclamation of the “Laws of Nature and of Nature's God” as the basis of human rights (including corollary rights of political succession), in the Declaration of Independence of the United States of America. This is the only logically-realistic solution to the theological problem of evil. Axiomatically-scientific ontology explains God’s influence in human evolution by indirect means of naturally-selected “extended phenotypes” (in the sense of Richard Dawkins) involving interactive value-sensitive dynamics. No unnatural super-magic was required. Since universally-scientific logic has provably-superior logically-fundamentalist doctrines of {theology and evolution}, by all means “teach the controversy”.

Conclusion

The logical-fundamentality of values means that our universe is “organically” very much richer than is commonly supposed (but not in any New Age or “quantum mysticism” sense). The Second Scientific Revolution of scientifically-universal logic will slowly-but-relentlessly increasingly exploit the world’s enormous value-synergy resources, despite the monstrous problems that will likely linger on for decades to come. But sooner or later, the logically-inherent conscience of science will ultimately get the upper hand in human civilization, and the corollary economic liberation of science will catapult human civilization to spectacular new levels of achievement, encompassing all kinds of well-being.

“Trials never end, of course ... but there is a feeling now, that was not here before, and is not just on the surface of things, but penetrates all the way through: we’ve won it. It’s going to get better now. You can sort of tell these things.”

—Robert Pirsig

If learning about scientifically-universal logic doesn't leave you more {intrigued, delighted, and hopeful}, then you're missing the big picture, and you should take another look. In any case, you should learn more about whatever aspects of scientifically-universal logic interest you, and you should (when personally appropriate) diplomatically encourage others to do the same.

Scientifically-universal logic is primarily concerned with priorities, relevance, and reality-checks. It should be pursued in a lively and engaging manner. Treat it as the universe's greatest scientific playground (but not to the exclusion of other playgrounds). And also consider what you can most easily do to help promote the advancement of scientifically-universal logic.

Be sure to take some time out every once and a while to contemplate just how logically-awesome our logically value-oriented universe really is.

And make the most of it.

Author's postscript

“Creative People Must Be Stopped!”

—bumper sticker seen in Silicon Valley

I've collected much more material pertaining to scientifically-universal logic and its applications. I'm seeking scientific patrons to support continuing work and publication along these lines.

References

“Outside of a dog, a book is man's best friend. Inside of a dog it's too dark to read.”

—Groucho Marx

Limited space precludes a more complete list of sources, which would number in the hundreds.

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