Noesis

The Journal of the Mega Society

Issue #208, August 2021

About the Mega Society

The Mega Society was founded by Dr. Ronald K. Hoeflin in 1982. The 606 Society (6 in 10^6), founded by Christopher Harding, was incorporated into the new society and those with IQ scores on the Langdon Adult Intelligence Test (LAIT) of 173 or more were also invited to join. (The LAIT qualifying score was subsequently raised to 175; official scoring of the LAIT terminated at the end of 1993, after the test was compromised.) A number of different tests were accepted by 606 and during the first few years of the Mega Society's existence. Later, the LAIT and Dr. Hoeflin's Mega Test became the sole official entrance tests, by majority vote of the membership. After that, Dr. Hoeflin's Titan Test was added. (The Mega Test and Titan Test were also compromised, so Mega Test scores after 1994 and Titan Test scores after August 31st, 2020 are currently not accepted; the Mega and Titan cutoff is 43 - but either the LAIT cutoff or the cutoff on Dr. Hoeflin's tests will need to be changed, as they are not equivalent.) The Mega Society now accepts qualifying scores on The Hoeflin Power Test and on The Ultra Test. Both tests are still being scored. The Mega Society publishes this irregularly-timed journal. The society also has a (low-traffic) members-only email list. Mega members, please contact one of the Mega Society officers to be added to the list.

For more background on Mega, please refer to Darryl Miyaguchi's "A Short (and Bloody) History of the High-IQ Societies" —

http://miyaguchi.4sigma.org/BloodyHistory/history.html

—and the official Mega Society page,

http://www.megasociety.org/

Noesis is the journal of the Mega Society, an organization whose members are selected by means of high-range intelligence tests.

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Opinions expressed in these pages are those of individuals, not of *Noesis* or the Mega Society.

Editorial

Richard May, Ken Shea

At last, *Noesis* swings back into action. Faithful *Noesis* readers will also cheer to discover that Kevin Langdon has made his return! Welcome back, Kevin!

Kevin Langdon ushers in *Noesis* #208 with “A Classification of the Emotions”, a personal analysis of the lower and higher psychic centers as outlined by the spiritual teacher George Gurdjieff. Kevin provides a caveat and tacit recommendation along the way:

> ‘There is much more going on, but I don't want to say more than what has become clear to me through my personal experience, intentional study, and pondering.’
>
> ‘As with all the ideas we study, this scheme is presented as a template for one’s own self-observation.’

Then, Chris Cole shares his perspective on a centuries-old philosophical conundrum - the so-called ‘is-ought problem’ outlined by Scottish philosopher David Hume in Book 3, Part 1, Section 1 of *A Treatise of Human Nature* - within an essay titled “Deep Truth”. Chris attempts to transcend various quandaries and concludes his essay by warning about ‘red flags’.

Do some terms actually have vague (or secondary) meanings which render consensus difficult? Was the post-analytic philosopher Hilary Putnam mistaken in supposing ‘factual statements themselves, and the practices of scientific inquiry upon which we rely to decide what is and what is not a fact, presuppose values’? Chris tries to get at the ‘deep truth’ on these matters.

After that, Mega member and ‘the designer of the cryptic Mega Society logo’, Benoit Desjardins, sits down with Scott Douglas Jacobsen for an interview. Upon hearing Benoit is ‘an international leader in three different fields: cardiovascular imaging, artificial intelligence and cybersecurity’, the reader is left in a state of perplexity, wondering what challenges are remaining to tackle.

Benoit describes how his ‘intellectual interlude’, pursuing ‘multiple sidelines in parallel’, and a series of ‘Grand Challenges’ all feed his love for learning and solving complicated problems.

Dr. Desjardins, further, explains his worldview, his context-dependent ethical philosophy, and his personal social philosophy. Sometimes life really does seem to offer moonlight and roses.

Next, the intelligence researcher and moral philosopher James Flynn (1934-2020) has a two-part, double-header, interview with Scott Douglas Jacobsen. Dr. Flynn actually saw himself mainly as a moral philosopher - Dr. Flynn, in fact, earned his doctorate in political philosophy. Flynn, accordingly, felt that his book *Fate and Philosophy* was his ‘most important book’ in spite of the attention bestowed on purported ‘massive IQ gains’ and the so-called ‘Flynn Effect’.

Within another book, *Intelligence and Human Progress: The Story of What Was Hidden in Our Genes*, likewise discussed in the interview down below, Dr. Flynn ponders whether cognitive and moral progress may be related and, if so, how they might be related. Other topics discussed in the interview include: climate change, education, the state of culture, and the notion of a moral imperative.

The founder of the Mega Society, Dr. Ronald K. Hoeflin, then, brings his roving intellect to bear with a quartet of analyses and reminds the reader that, 'Clarity of understanding is a goal that no one should regard as pointless.'

In a "A Theory of Categories for Analyzing and Unifying Various Bundles of Important or Interesting Concepts" the reader is informed: 'I have performed over 4,000 of these analyses, with these six among the more important and interesting ones, although they merely scratch the surface of the huge depth of this theory.' *Inter alia*, Theories of Truth, Peano's Axioms for Number Theory, and Aristotle's Categories are scrutinized by Dr. Hoeflin.

Dr. Hoeflin sees the "The Metaphysics of Mathematics: A Categorical Analysis" this way: 'The present paper focuses on examples from mathematics: specifically their axioms, their theorems, and even in one case their unproven conjectures. These examples span the entire history of mathematics from ancient times to the present.'

The reader may similar gauge the scope and ambition of "The Metaphysics of Physics: A Categorical Analysis" by appreciating the contents alone, e.g., 'Newton's Laws of Motion', 'Einstein's Theory of Relativity', 'Schhrödinger Equation', and 'Superstrings'.

Lastly, Dr. Hoeflin covers a variety of disorders within "The Metaphysics of Psychiatry: A Categorical Analysis", including: Asperger's Disorder, Male Orgasmic Disorder, Nightmare Disorder, Posttraumatic Stress Disorder, and schizophrenia.

After Dr. Hoeflin's four analyses, Ken Shea serves up an essay appraising Donald Davidson's conceptual relativity and W.V. Quine's ontological relativity in light of recent scientific assertions and philosophical thought in an essay titled "The Curious Quest for Absolute Knowing".

In the absence of a 'common vocabulary which isolates the common human essence of Achilles and the Buddha, Lavoisier and Derrida' (Rorty), how should one proceed, dear reader?

May-Tzu's "Tathata" rounds out *Noesis* #208 with a bang and an endless *joie de vivre*.

Noesis #209 is tentatively scheduled for publication in March 2022, the Year of the Tiger.

Contents

A Classification of the Emotions

Kevin Langdon

Students of the Gurdjieff Work are familiar with the idea of psychic centers, including the four "lower centers" (see the table below) and more subtle "higher centers."

Briefly, the instinctive center is responsible for the senses, autonomic nervous system, other non-muscular activity of the organism, and reflexes. The moving center is responsible for tracking, movement, balance, etc. Clearly, these two centers must work closely together, and in some contexts can be taken as comprising one center.

The meaning of the other two, the emotional center and the intellectual center, is clearer, at least in a rough sense.

Neuroscience has come to similar conclusions about brain systems and their interrelations.

Some of the centers are much faster than others. Higher centers work with finer energies and are faster. The centers, from fastest to slowest:

1)	Higher intellectual		
2)	Emotional*	Sex	Higher Emotional
3)	Instinctive	Moving	Emotional*
4)	Intellectual		

* As Gurdjieff said, the emotional center is a higher center when it works with its right energy. But otherwise it works with the energy of the moving and instinctive centers.

This essay only addresses the four lower centers. There is much more going on, but I don't want to say more than what has become clear to me through my personal experience, intentional study, and pondering.

Gurdjieff never presented a systematic typology of the emotions, though he had a lot to say about positive and negative emotions. What is presented here is an attempt to make sense of what we feel, from the point of view of the centers.

A positive emotion is the sensation of optimal functioning of a center. A negative emotion is a response to disturbance of a center (one for each center, except that there are two for the instinctive center).

Positive emotions become adulterated as one's attention follows various associative blind alleys and become imitations of themselves, with greatly reduced energy. We lose energy when we identify with the drama around us and within us.

This problem has intensified with the rise of human civilization. We are bombarded all the time with many more mental associations than were present in the environment in which our species evolved, and we can't keep up. Where there are gaps the narrative is adapted to bridge them.

The negative emotions feed back on themselves. One becomes afraid of one's fear, angry about being angry, etc. A great deal of energy leaks out and is lost through this mechanism. The basic negative emotions are found in one-, two-, and three-brained beings and provide useful signals when action is required to protect the organism, but in the great majority of human beings they're co-opted to protect the hypertrophied ego in addition, or even primarily.

The inflated ego ingests and creates false narratives. Some of what one takes to be reality is real and some is these false narratives; it's all mixed up together. There are very strong defensive reactions when these narratives are questioned.

It is just this false ego that deflects attention from sensitive areas. Often the Devil doesn't want you to understand what you're feeling. A road map may help you to sort this out.

Gurdjieff said that each person has a "chief feature," a particular bias and blindness characteristic of him or her. It's clear to me that, with few exceptions, a major aspect of each person's chief feature is susceptibility to a particular negative emotion.

Gurdjieff spoke of "one-, two-, and three-brained beings." Microbial and vegetative life could be spoken of as "zero-brained beings." One-brained beings include insects, fish, amphibians, etc. Two-brained beings include birds, mammals, and some reptiles. They're warm-blooded and they have brain structures not found in one-brained beings. And three-brained beings, with still more brain structures, are human beings (with some partial cases in animals like dolphins, elephants, and the higher primates).

One-brained beings have the emotions in all but the last two columns below; two-brained beings have all but the last column.

Positive emotions depend on the supply of fine energy available. Sometimes a more direct connection with the overall energy supply can be created by a shock or a drug; sometimes it just comes about by itself. But if one separates innerly from and studies oneself, little by little, a supply of finer energies is accumulated, bringing new kinds of impressions.

Identification with negative emotions leaks large amounts of energy.

Seeing negative emotions more clearly helps one to resist expressing them.

	Instinctive	Moving	Emotional	Intellectual
Positive	Bliss	Ecstasy	Compassion	Wonder
Positive (Identified)	Amusement	Excitement	Sentimentality	Fascination
Negative	Fear	Disgust	Anger	Grief	Confusion
Negative (Identified)	Paranoia	Revulsion	Rage	Self-pity	Denial

An important emotion not included in the table is organic shame (identified: guilt). Gurdjieff said that conscience is a function of the emotional center as a whole. Therefore, organic shame must include all the negative emotions together.

Things become more complex through the arising of attitudes including an emotional element, but using the categories presented here makes it a little bit easier to follow what one sees taking place in oneself.

As with all the ideas we study, this scheme is presented as a template for one's own self-observation. Try working with these ideas and see if they're helpful for you.

Deep Truth

Chris Cole

Niels Bohr said that a deep truth is any truth the opposite of which is also a deep truth. What are some examples?

One is the Is/Ought Dichotomy. This is the idea that facts and values are different. Hume observed that works of philosophy usually proceed by stating a series of facts (this is this and that is that) and somewhere in the argument shift to stating a series of values (this ought to be this and that ought to be that). Hume thought all such arguments were invalid. Many other philosophers disagree.

How are we to resolve such disputes, which have bedeviled philosophy for millennia?

Let's look at a couple more examples, perhaps with less emotion tied to them.

One is the Newcomb's Paradox. A clever demon is good at predicting human behavior. The demon puts one thousand dollars in Box 2 and either nothing or one million dollars in Box 1. It gives you a choice of taking one box or both, but if it predicted you would take both, it puts nothing in the first box. What should you do?

Many philosophers think it is obvious that you should take only Box 1. Others think it is obvious you should take both boxes.

Here is another example from the legal profession. An airline seat has a button that allows you to recline. Should you?

Many people think that the airspace behind the seat belongs to the person sitting in the seat behind it and that reclining is a violation of the rights of the person seated there. Other people think that the seat has a recline button so that it is the right of a person to recline. Who is right?

Could it be that a deep truth is deep because the resolution relies upon the worldview of the person thinking about it? Thus it is not a simple matter to convince anyone to change their position.

An observation: In some cases the truths are stated in similar language, but the words have different meanings, so that similar statements do not have similar meanings. Vague terms like "rights," "consciousness," "freedom," and "cause" are red flags.

[Editor's Note: 'Although an ancient Greek would have said that being *wise* is an *ethical* value; Judaism and Christianity have, in fact, narrowed the notion of the ethical because of a certain conception of Salvation.' -Hilary Putnam (*Reason, Truth and History*)

Within *A Treatise of Human Nature*, published in the 18th century, David Hume appeared to be responding to the latter, soteriological ethical conception and moral realism, what David Hume derisively called 'the vulgar systems of morality'.

Cf. Ludwig Wittgenstein's *Philosophical Investigations*, Section 241: '"So you are saying that human agreement decides what is true and what is false?" - It is what humans *say* that is true and false; and they agree in the *language* they use. That is not agreement in opinions but in forms of life', see *lebensform*.

Post-analytic philosopher Donald Davidson found in *Inquiries Into Truth and Interpretation* that, 'Reality itself is relative to a scheme: what counts as real in one system may not in another.'

Still, Donald Davidson perceived no reason to despair. 'Of course truth of sentences remains relative to language, but that is as objective as can be. In giving up dualism of scheme and world, we do not give up the world, but re-establish unmediated touch with the familiar objects whose antics make our sentences and opinions true or false.'

Davidson, moreover, assures readers: 'It would be equally wrong to announce the glorious news that all mankind - all speakers of language, at least - share a common scheme and ontology.'

The upshot of such relativity for Hilary Putnam was that, 'If the notion of comparing our system of beliefs with unconceptualized reality to see if they match makes no sense, then the claim that science seeks to discover the truth can mean no more than that science seeks to construct a world picture which, in the ideal limit, satisfies certain criteria of rational acceptability.'

Apparent vagueness tends to dissipate once the bound variables are assigned within an ontology, finite state space, Kuhnian disciplinary matrix, or some other man-made system. There are degrees of freedom in phase space, and complete freedom *from a particular system* can be attained by operating separately from, say, a Kuhnian disciplinary matrix.

Theory is inexorable; an Archimedean point is a chimera. Neutrality or omniscience is a flattering illusion; stepping back or reaching for a skyhook simply puts one in another theory.

Ambiguity arises if the system's limits or referents are unclear or if one makes a 'category error' by intermixing systems, cf. domain of discourse. Specific terms are not inherently vague. To be anything - i.e., to be conceptualized as something - is already to be within a theory.

The post-analytic philosopher W.V. Quine rightly said that, 'A theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that affirmations made in the theory be true.' Nothing more is required, or possible.]

Interview with Benoit Desjardins

Abstract

Professor Benoit Desjardins, MD, PhD, FAHA, FACR, is an Ivy League academic physician and scientist at the University of Pennsylvania. He is a member of the Mega Society, the OlympIQ Society and past member of the Prometheus Society. He is the designer of the cryptic Mega Society logo. He is a member of several scientific societies and a Fellow of the American College of Radiology and of the American Heart Association. He is the co-founder of the Arrhythmia Imaging Research (AIR) lab at Penn. His research is funded by the National Institute of Health. He is an international leader in three different fields: cardiovascular imaging, artificial intelligence and cybersecurity. He discusses: growing up; extended self; family background; youth with friends; education; purpose of intelligence tests; high intelligence; extreme reactions to geniuses; greatest geniuses; genius and a profoundly gifted person; necessities for genius or the definition of genius; work experiences and jobs held; job path; myths of the gifted; God; science; tests taken and scores earned; range of the scores; ethical philosophy; political philosophy; metaphysics; worldview; meaning in life; source of meaning; afterlife; life; and love.

Keywords: academic physician, Benoit Desjardins, intelligence, Mega Society, science, University of Pennsylvania.

Scott Douglas Jacobsen: When you were growing up, what were some of the prominent family stories being told over time?

Dr. Benoit Desjardins: Nothing interesting. A very ordinary family, trying to stay afloat financially. I found out on my wedding day that my father was adopted, which added mystery to the family for the first time in my life. But I chose not to investigate further out of respect for his wishes.

Jacobsen: Have these stories helped provide a sense of an extended self or a sense of the family legacy?

Desjardins: No, not much of a legacy. My family history did, however, make me prioritize financial stability as one of my main goals in life.

Jacobsen: What was the family background, e.g., geography, culture, language, and religion or lack thereof?

Desjardins: French Canadian, catholic, I grew up in Montreal. I was a first-generation college student, although I never really attended college and was fast-tracked directly to medical school and graduate school. We were not a very religious family. A priest had cursed my mother to get a physically disabled child when she was pregnant with me because she missed mass, and my parents then dissociated from the church. I was fortunately not born with any handicaps.

Jacobsen: How was the experience with peers and schoolmates as a child and an adolescent?

Desjardins: Not great. I was not good with human interaction. I was a bit of a recluse, although I did attend school but did not have many friends. I went to an all-boys high school. I only became comfortable interacting with girls a few years after high school. Now I have a wife and kids. Happily married for 34 years.

Jacobsen: What have been some professional certifications, qualifications, and trainings earned by you?

Desjardins: My path was unusual. I was fast-tracked to medical school in Canada because of my exceptional intellectual abilities, skipping college. But medical school did not satisfy me intellectually. So, after medical school, I received a very prestigious Award to pursue four simultaneous graduate degrees in the US, combining Pure Mathematics, Artificial Intelligence, Formal Philosophy (Logic), and Theoretical Physics. I called this my “intellectual interlude”. I then completed the medical curriculum (internship, residency, fellowship) to earn a living as an academic physician. So, I have an MD degree, a PhD degree, half a dozen Masters, and medical post-graduate training certificates. I also completed several additional certifications on the side, like recent certifications in hacking and cybersecurity. I love to learn new things, and these certifications force me to learn new fields very thoroughly.

Jacobsen: What is the purpose of intelligence tests to you?

Desjardins: Their purpose is to attempt to evaluate intelligence. I just take those tests for fun as I love to solve complicated problems.

Jacobsen: When was high intelligence discovered for you?

Desjardins: It was in high school since I was pretty much a recluse before that.

Jacobsen: When you think of the ways in which the geniuses of the past have either been mocked, vilified, and condemned if not killed, or praised, flattered, platformed, and revered, what seems like the reason for the extreme reactions to and treatment of geniuses? Many alive today seem camera shy – many, not all.

Desjardins: It usually depends on the mindset of the society in which they live. If it is not open to new ideas or non-traditional ideas, geniuses get vilified, sometimes imprisoned (e.g., Galileo), or killed (e.g., Socrates). On the other hand, if it values new ideas and risk-takers, geniuses get praised or platformed (e.g., Gates, Jobs, Musk).

Jacobsen: Who seem like the greatest geniuses in history to you?

Desjardins: One hundred billion humans ever lived on Earth, so out of those, there were quite a few geniuses throughout history. Here are a few: Socrates, Galileo, da Vinci, Einstein, Darwin, Newton, Aristotle, Turing.

Jacobsen: What differentiates a genius from a profoundly intelligent person?

Desjardins: Extreme creativity and long-term focused effort characterize genius. Profoundly intelligent people are much more common, and most don't amount to much in life.

Jacobsen: Is profound intelligence necessary for genius?

Desjardins: Profound intelligence is usually a left-brain process. Extreme creativity is usually a right-brain process. So no, it's not necessary.

Jacobsen: What have been some work experiences and jobs held by you?

Desjardins: The main path I followed is that of an Ivy League academic physician and scientist. But I have always pursued multiple sidelines in parallel. For example, one of my current sidelines is being a hacker and a cybersecurity specialist.

Jacobsen: Why pursue this particular job path?

Desjardins: Early in my life, I sought an intellectually challenging career, which generated good financial security income. However, I quickly realized that such a career did not exist or was very difficult to find. So, I decided to pursue two careers in parallel. I picked academic medicine to generate income and pursued many other activities in parallel to provide an intellectual challenge.

Jacobsen: What are some of the more important aspects of the idea of the gifted and geniuses? Those myths that pervade the cultures of the world. What are those myths? What truths dispel them?

Desjardins: There are many myths. For example, the myth that gifted people always do well in school. But, unfortunately, the structure of the education system is not always appropriate for many geniuses, who either do poorly in school or drop out (e.g., Einstein).

Jacobsen: Any thoughts on the God concept or gods idea and philosophy, theology, and religion?

Desjardins: God was an invention of prehistoric man to explain what he could not understand. Eventually, science explained more and more and made God and religion irrelevant. As for philosophy, it is a field that helps sharpen critical thinking, analysis, and writing. Therefore, everyone should take courses in philosophy, unless one aims for a job not requiring much thinking, like a farmer or a US congressman.

Jacobsen: How much does science play into the worldview for you?

Desjardins: I earn a living as a physician and scientist, so much of my worldview is based on science.

Jacobsen: What have been some of the tests taken and scores earned (with standard deviations) for you?

Desjardins: I took the Mega test and Titan test in the mid-1990s for fun. My scores on those were good enough to qualify for membership to the Mega Society. Whether they are appropriate tests to measure very high IQs is still an open question, but all similar tests face the same problems. I probably have taken other tests as a kid, but I don't remember much. I also do puzzles and quizzes whenever they come up, such as Tim Roberts quizzes, and I usually finish first at most of them.

Jacobsen: What is the range of the scores for you? The scores earned on alternative intelligence tests tend to produce a wide smattering of data points rather than clusters, typically.

Desjardins: High enough to qualify for membership in the Mega Society. Narrow range, around five-sigma.

Jacobsen: What ethical philosophy makes some sense, even the most workable sense to you?

Desjardins: I take a little bit from each of the main ethical philosophies, depending on the context. Deontological ethics mainly guides physicians, but a utilitarian approach often makes more sense to me.

Jacobsen: What social philosophy makes some sense, even the most workable sense to you?

Desjardins: I value the "Live and let live" social philosophy with a set of practical constraints. As long as people's behavior does not harm others, does not harm the environment, and does not harm the social fabric, let people do what they want to do. If they're going to hurt themselves, it's their choice. You can always provide them with the best possible advice to help them realize the consequences of their actions, but in the end, it's their choice. Physicians use that approach a lot. For example, we inform patients who drink too much or do drugs about the consequences of their actions, and if they choose to continue, it's not our role to forcibly stop them from harming themselves.

Jacobsen: What economic philosophy makes some sense, even the most workable sense to you?

Desjardins: Well, I cannot tolerate the cruelty and exploitative nature of predatory capitalism in the US. I instead value any economic system that provides people with the means to achieve their goals in life and reap the benefits of their hard work while at the same time providing a robust social net to prevent people from falling through the cracks. Canada, where I grew up, is a social democracy that provides all these features and makes sense to me from an economic perspective.

Jacobsen: What political philosophy makes some sense, even the most workable sense to you?

Desjardins: I oscillate between social liberalism and social democracy, depending on the context. Their basic policies are often the same. I value the power of the state but do not value as much the power of unions.

Jacobsen: What metaphysics makes some sense to you, even the most workable sense to you?

Desjardins: I have a purely atheistic scientific view of the world, and I do not need metaphysics.

Jacobsen: What worldview-encompassing philosophical system makes some sense, even the most workable sense to you?

Desjardins: As a scientist, post-positivism is the worldview philosophical system that makes the most sense to me. Reality is accessible through careful observation and scientific reasoning.

Scientists make theories that can evolve, and they use observation to support or disprove a theory, knowing that all observations have a certain amount of error in them. Thus, science makes steady progress towards understanding reality.

Jacobsen: What provides meaning in life for you?

Desjardins: Three elements provide meaning to my life: my wife and kids, job and research work, and achievements. For the past few decades, I undertook a series of Grand Challenges outside work for personal growth and achievement. Each new Grand Challenge had to meet three conditions: (1) be something I had never done in my life, (2) enable me to grow as a person, and (3) have a well-defined end goal. I have pursued many such grand challenges, such as getting a Black Belt at Tae Kwon Do, earning a Wood Badge with Boy Scouts of America, becoming a pilot, becoming a competitive master marksman, etc.

Jacobsen: Is meaning externally derived, internally generated, both, or something else?

Desjardins: It's both. In my case, my grand challenges are purely internally generated. However, other aspects such as wife and kids are externally generated.

Jacobsen: Do you believe in an afterlife? If so, why, and what form? If not, why not?

Desjardins: We either get cremated or eaten by worms and get recycled, currently into dirt, but eventually possibly into Soylent Green.

Jacobsen: What do you make of the mystery and transience of life?

Desjardins: Life is a beautiful thing. It appeared by itself out of nothing billions of years ago. It kept evolving until it produced Homo Sapiens, which could colonize and change the planet, and might eventually become interstellar. Science has taught us more and more about the mechanisms of life, so it's becoming less mysterious with time. The transience of life is a good thing, as otherwise there would be 100 billion people living on Earth, 94 billion of them living in old people's homes.

Jacobsen: What is love to you?

Desjardins: Love is an emotion that binds people to each other. I never thought of it more deeply or philosophically. But I express it regularly. For example, I've bought roses for my wife every month since we started dating, and I have not forgotten any monthly roses in the 37 years we have been together.

Interview with James Flynn

ABSTRACT

First part of a two-part comprehensive interview with Emeritus Professor of Political Studies and Psychology at the University of Otago in Dunedin, New Zealand on the main subjects of his research: intelligence and subsequent controversies; graduate students continuing the debate; Eysenck and Richard Lynn; incoming work for the year; environmental influence on intelligence; considerations on climate change; moral imperatives outside of survival for solving climate change; family background and influence on development; influence of Catholicism; duties and responsibilities of being Emeritus Professor of Political Studies and Psychology at University of Otago, New Zealand; differences between intelligence and IQ; definitions of intelligence and IQ; the late Dr. Arthur Jensen and the 1969 journal article entitled "How Much Can We Boost IQ and Scholastic Achievement?"; Dr. Charles Murray and *The Bell Curve*.

Keywords: Catholicism, climate change, Dr. Arthur Jensen, Dr. Charles Murray, Dr. James Flynn, Emeritus Professor, environmental influence, Eysenck, Intelligence, IQ, moral imperatives, New Zealand, Political Studies, Psychology, Richard Lynn, University of Otago.

Jacobsen: Your most famous research area is intelligence. Of those studying intelligence, you are among those on the top of the list. Many researchers worked in this area and caused many, many controversies, but more importantly sparked debate.

Dr. James Flynn: Of the old timers, I guess there's just Richard Lynn and me around. I mean among those people who really duelled over race and IQ.

Jensen died of a very bad case of Parkinson's or something like that. Very sad really, I wrote an obituary for him that was published in *Intelligence*. Rushton died of something different, I'm not sure what his complaint was. Eysenck is dead.

Jacobsen: You must have some ex-graduate students around that continue the debate.

Flynn: Yes, there are people who will, though remember, it is a very politically sensitive topic. Jensen's fingers were burned, though he always showed great courage. Rushton, I think, sort of enjoyed controversy, so I do not know how much his fingers were burned over the outrage his views caused. Eysenck was such a great man and had so many interests, that the race issue was not really too much associated with him. Richard Lynn, though he has made his views on race known, has been more interested in global matters.

Jacobsen: Did he not attempt to make intelligence a unifying concept in psychology in a recent book?

Flynn: He may have. Was this on using the 'g' factor? I have a piece on the 'g' factor coming out with a Dutch psychologist, who is a whiz at statistics, an article in *Intelligence*, which may be on the web now, that puts 'g' in perspective. It shows that the exaggerated claims made for it have to be trimmed back very radically.

For example, I have been reading the Wechsler manuals, and I have noticed something interesting. The g-men say IQ gains are significant only if they are on the 'g' factor because they identify that with general intelligence. I am not saying 'g' does not have any significance. I think it has significance in a number of areas, but you cannot really dismiss IQ differences because they are not 'g'. They take the Wechsler subtests and rank them for the degree of 'g' loading, and then they rank them for something else. In this case, IQ gains over time. You find the largest IQ gains do not match the 'g' loadings. They say, "You see. IQ gains are not real intelligence gains. They are specific factors that make you good at various subtests."

But the data show that when you do subtests ranking of normal subjects against people who have had brain trauma, fetal alcohol syndrome, and so on, and when you compare these people with normal subjects, you find that the differences that separate them are not on the 'g' factor. You would have to be pretty peculiar to say that a person with brain trauma or fetal alcohol syndrome does not have a lower intelligence from a normal person. As I have said, I have been a sceptic about 'g' for years, but only when I came across this data could put an end to all this business. IQ gains are very significant whether they correlate with 'g' or not. To say they are not significant, you would have to say, "Well, there is no significant intelligence difference between you and someone who has suffered brain trauma."

Jacobsen: What other work will you bring out in the coming year?

Flynn: I am doing some work on the effects of family on IQ as people age. The twin studies, of course, show that eventually genes take over. But they do this through elaborate kinship

studies. However, I have managed to find printed data in the manuals that allows me to actually chart how much family influences a person for ages going through school until adulthood. I can do this subtest by subtest.

For example, I found that family effects for vocabulary are much more persistent than, for instance, arithmetic. At the beginning, your family almost totally dominates, before you go to school they either teach you to count or they do not. Of course, you are surrounded by their vocabulary. With arithmetic, very quickly, the school swamps family. It matches kids for their genetic promise fairly quickly. Apparently, by being continually exposed to your parent's vocabulary – after all, chatting with them, listening to them – vocabulary becomes a more persistent influence even up to the college boards at age 17.

This allows me for the first time to say, "Yes, genes do dominate in terms of IQ variance, but there are significant handicaps having to do with certain subtests like vocabulary that effect your ability to do well on the SAT verbal." I have written this up, preliminary study, not a final study, in a book I published with Elsevier. It is called *Intelligence and Human Progress: The Story of What Was Hidden in Our Genes*. It really is fundamentally a book on how we have made cognitive progress, stressing the theme that there is a spinoff of this for moral progress. That one of the reasons for us having a more elevated sense of morality is because of our cognitive advance. Moral reasoning has improved.

There is also a chapter, which shows how family affects vocabulary and it points out the way this handicaps young people. The lingering effect of vocabulary at the time they are trying to match themselves for the university. So it is not true that the genetic dominance of IQ variance means that your family background is a null factor. It weakens, but it has sufficient kick that it can give you some disadvantages in later life.

Jacobsen: This sets more nuance to the ways family history burdens or benefits you.

Flynn: Yes, if you come from a family where the vocabulary is less than adequate, your vocabulary will be less than adequate. Now, going to school and encountering the wider world will slowly replace that family effect with your current environment, but the vocabulary handicap can still be quite significant by the age of 17, when you graduate from high school.

I am also doing some other work with climate change.

Jacobsen: Why don't we veer into that a bit?

Flynn: I have finished a book on climate change, but I have not placed it for publication at this time. I am primarily a moral philosopher. Psychology is a sideline for me. I thought, "My heavens, I might at least confront probably the chief moral issue of our time." So I have written a little book looking into the science of climate change. Our climate will change. What we are doing is not going to stop it. There was a book called *Gaia* written by James Lovelock. It

describes the Earth being like a total system. He has now become very pessimistic. He figures we are going to go past the point of no return.

I wanted to see if there were alternatives that we could imagine. There is another way. If we were rational enough, we could probably limit climate change over the next generation until alternative, clean sources of energy come online. I wanted to investigate the science and at least propose something a little less gloomy than the climate scientists. They are all about ready to throw in the towel. James Hansen, in Britain, he's one of the heroes in the environmentalist movement, is pessimistic. Of course, the environmentalists have all turned against him.

That's what I am doing currently. I am trying to publish my book on climate change, exploring whether you can identify intelligence with 'g', looking into the influence of cognitive ability on morality, and I am interested in finding a new way of partitioning IQ variance. Those are the main things. I hope by another month or two to have that cleaned up. After that point, I hope to begin an important book, which is on teaching political philosophy. It would be how to teach it without boring students. As I said, my main work is moral and political philosophy, but morals in particular.

Jacobsen: Besides survival, what moral imperative do we have to protect the environment?

Flynn: I think that comes down to a fundamental question, "Is there any objectivity to our moral ideals?" The answer to that is, "No. Either you empathize with humanity or you do not. If you empathize with humanity, you feel an imperative." Now, that does not mean you cannot use reason against your opponents. Most of them are, or would at least claim, that they share this bond with humanity and would try and make a case that what we are doing makes no difference.

That leads directly from ethics to science. If what we are doing makes no difference, then there is no moral choice, is there? However, if science shows there are important choices that could be made, then you have to take a stand. Either you possess humane ideals and think all human beings are worthy of moral concern. Or you think this will not happen for 20 years. I am 80 now, so I do not think I will live to see the consequences, and assume I have no grandchildren – so to hell with everyone. Moral imperatives arise out of moral commitments. If you have no commitment that gives you a bond with humanity, I cannot open your mouth and thrust one down your throat.

I wrote about this in a book called *Fate and Philosophy* that came out about three years ago. It is on three problems: 'what is good?', 'what is possible?', and 'what exists?' To me, that book is the most important book that I have ever written: *Fate and Philosophy*. It is my stand on fundamental philosophical problems, but it is written for the general public. I published a more specialized book, but more for a philosophical audience. It is entitled *How to Defend Humane Ideals*. It came out with Nebraska Press. It is a specialized look at this question of objectivity and ethics. However, *Fate and Philosophy* describes everything in more popular language.

I published a book in 2010 called the *Torchlight List*, and it is to encourage students to read widely, which most of them do not. Compared to my generation, even our best graduates do not read widely in literature and history. In the first chapter, I give some personal background.

Jacobsen: In terms of geography, culture, and language, where does your family background reside? How do you find this influencing your development?

Flynn: I was raised as an American-Irish Catholic. For my father, like so many Irish, Catholicism was a badge of patriotism. In terms of his beliefs, he only believed in the fundamentals, which means whatever he found convenient. (Laughs) He was a good man, but he did not care much about the infallibility of the pope. As I studied, I lost my faith. I began to realize I only believed in God because everyone around me believed in God.

But my background was in Washington, D.C., I was born there. My father settled there as a newspaper man about the time of World War I. My mother came from upstate New York. She had been a school teacher. I was raised there with my brother and first cousins. At that time, the Irish extended family was still important, and my first cousins were really like brothers and sisters.

It influenced me in the sense that having been deeply committed to Catholicism's version of humane ideals, once I lost my faith, I began to wonder what sort of rational justification I could give for my ideals. That became a large part of my scholarly life. Note my book: *How to Defend Humane Ideals: Substitutes for Objectivity?*

As for Psychology, I got onto that through moral philosophy. I was writing what later became *How to Defend Humane Ideals*. I worked on it for many years. When I was writing a chapter on how to argue with racists, I stumbled on Arthur Jensen – who obviously was not a racist, but thought he had scientific evidence that blacks, on average, were genetically inferior. And then, of course, I thought, "Well, I have certainly got to look into that." I wrote a book called *Race, IQ, and Jensen*, which came out in 1980, in which I put the contrary view.

In researching that book, I was looking at publishers' manuals and stumbled upon IQ gains over time. That, of course, became an avocation for me (laughs), for the next 30 years. You had to do more than acknowledge that the gains were there. You had to alter the theory of intelligence to accommodate them. I did that in my book *What is Intelligence?*, which came out in 2007 with Cambridge. And I have published other books on this topic. It was all an accident. I had no idea I would be interested in the theory of intelligence. I came to it through moral philosophy.

Jacobsen: Even with that background, and the deep influence of Catholicism, what do you consider a pivotal moment?

Flynn: It was a pivotal moment for me leaving Catholicism. I won an essay contest at the age of 11. As an award, they gave me the *World Book Encyclopedia*. In reading it, I found there was a more scientific explanation of the world. The other thing was going to the University of Chicago,

which gave me the ‘Great Books’ curriculum. It encouraged you to believe that if you are interested in fundamental problems, they were usually cross-disciplinary, and that if you were incisive enough, you could read across disciplines and get a good amateur competence. Of course, I needed that when I went into psychology because I had never taught a psychology course or read a psychology text. However, I was good at math. I saw no reason why I could not chart IQ gains over time, and make the changes in the theory of intelligence that were necessary.

I would say three things: strong moral commitments, the break with Catholicism, and the University of Chicago.

Jacobsen: At present, you hold the position of Emeritus Professor at the University of Otago in Dunedin, New Zealand. What responsibilities and duties does this imply to you?

Flynn: Yes, although I will be 80 in April, I will teach two courses this coming semester. Of course, I will have the rest of the year to do my writing.

Emeritus professor here means that you are still active. So even though I am retired, I am employed by the University of Otago. You can employed at many levels. Two courses is about a 4/5ths load. They like my research. So I am Emeritus Professor jointly with political studies and psychology. I was head of the Political Studies Department for 30 years. We emphasized moral and political philosophy among other things. I teach one course in political studies entitled *The Good Society and the Market*. I teach another in psychology entitled *Justice, Race, and Class*.

Jacobsen: With regards to your main area of research in psychology, intelligence and IQ mean different things. Intelligence stands for a general attribute. IQ stands for scores given based on tests designed to penetrate this attribute through inference of performance.

Flynn: Yes, it may be either a better or worse measurement, of course. I mean, there is no measure that cannot be abused, and Arthur Jensen was well aware of that.

Jacobsen: With that, how would you define intelligence? How would you differentiate it from IQ?

Flynn: You have that more formally in my book *What is Intelligence?* I do not think it needs too careful a definition. It is essentially a matter that one person is more intelligent than another in a certain cultural setting. In the sense that when they confront important problems in that culture, they either learn to solve quicker or better. Arthur Jensen wrote a good article on this using Robinson Crusoe, who was on his island. Unless he had another person, he could not estimate his own intelligence. He could make statements about memory. For example, he either forgot things or he did not; he could learn things like manual dexterity. But only when Friday arrived did he say, “My heavens, Friday is learning everything I learned faster than I did, and he is better at it.” (Laughs) That is a first step to saying who is more intelligent.

When cognitive problems are terribly important, if you can learn what you need to learn to solve those problems quicker, or in the same amount of time you solve them better, that, I think, is a good working definition of intelligence. Now, that still leaves it culturally relative. If you were in the Australian outback, the problem that would interest you is finding water when it is scarce. That would mean, your mapping ability is terribly important. Today, if you are not a London cab driver, you do not much care about mapping ability.

Jacobsen: You have mentioned the late Dr. Arthur Jensen a few times. He published a well-cited and famous, or – by many individual's account – infamous, paper published in 1969 by the late entitled 'How Much Can We Boost IQ and Scholastic Achievement?', which sparked a controversy around the topic of race and IQ.

Flynn: It created a storm of controversy. Rather than assembling evidence to attack the position, they attacked the man. That's why I wrote my book *Race, IQ, and Jensen*, which you will find saying, "This is ridiculous. There is no reason to think Arthur Jensen is a racist. Let's look at the evidence. We can either show he is wrong evidentially or he is not." I feel the evidence shows that it is more probable that blacks have genes roughly equivalent to whites for what we call 'intelligence'. If you want to see my most recent updating of that thesis, you would want to read, not only the old book *Race, IQ, and Jensen*, but also *Where Have All the Liberals Gone?*. It came out with Cambridge in 2008, and it has four chapters on black Americans.

Jacobsen: In addition, and following that controversy, those arguing for heredity more than environment provided further momentum for the opposing side with works by Dr. Charles Murray…

Flynn: Yes, I know Charles Murray. Murray has never stated any definite position on the genetic comparisons of the two racial groups. He has been much more cautious than Jensen. What he wrote, in the minds of many, influenced them to believe that he agreed with Jensen, but he has never stated that. He did bring forward many of Jensen's arguments saying, "We have to acknowledge there is a powerful case here."

The Bell Curve was not fundamentally about race, genes, and IQ. It was saying, "Let's look at the present situation and see how IQ effects your life prospects." There's no doubt that even if black and whites have the same genes for IQ, blacks are doing worse academically. And he was exploring the consequences of an IQ test in predicting academic performance.

I had two debates with Murray. You can find them on the internet. One was in New York. Another was in Washington, D.C., hosted by the American Enterprise Institute. The one in New York was Cognos I think, but you can find them on the internet – if you type in 'Flynn, Murray, race, and IQ'. The second debate was better because we had rehearsed our arguments better.

[End of part one of interview]

ABSTRACT

Second part of a two-part comprehensive interview with Emeritus Professor of Political Studies and Psychology at the University of Otago in Dunedin, New Zealand on the main subjects of his research: Jensen, Eysenck, and Rushton; black improvements in IQ corresponding to educational gains; moral commitment to the truth; environment, genetics, and the interplay in the development of IQ; activities associated with the highest level of general ability; TED talk entitled 'Why our IQ levels are higher than our grandparents'; differential IQs of generations based on the Flynn Effect occurring over significant periods of time; future work; meaning of the paraphrase 'system of jurisprudence uses the concept of praise and blame'; responsibility of academics to culture and society; moral and general influences; advice for young academics interested in moral and political philosophy; and worries and hopes for concepts in psychology having practical implications for the larger culture and societies in general.

Keywords: Academics, Dr. James Flynn, Emeritus Professor, environmental influence, Eysenck, genetics, Intelligence, IQ, Jensen, jurisprudence, moral imperatives, moral philosophy, New Zealand, political philosophy, Political Studies, Psychology, TED, University of Otago.

Jacobsen: Recounting in the earliest part of this conversation about Jensen and Eysenck – and Rushton – passing, what is the current state of this debate?

Flynn: I think the current state of the debate is in my 2008 book, although stuff keeps coming out. But the current status of the debate must take this into account: I showed along with Bill Dickens that blacks had erased 5 points of the old 15-point IQ gap. Therefore, the improvement in the black environment is paying dividends. Even now, you could hardly claim blacks are living in an equivalent environment to whites. Maybe, the other 10 points will go. As scientists, we have to hedge our bets until the evidence is in, don't we?

I think that eventually blacks may close that gap.

Jacobsen: A third of a standard deviation is quite a bit…

Flynn: Yes, it is quite significant. They were one standard deviation behind. Now, they are two-thirds behind. This is reflected in the Nation's Report Card. They gained the same amount of ground in academic performance. I published an article in the journal *Intelligence* earlier this year. They gave a whole issue of *Intelligence* to the Flynn Effect. In the summary article there, I point out the correspondence between the black IQ gains and the black educational gains.

Now, the bad news is that until blacks perform better for IQ, which predicts their performance at university, they will have grave difficulty matching whites. You cannot say, "These IQ gaps do

not count." They count for a lot in terms of your life prospects. The good news is, there is no reason to think they are genetically crippled.

Jacobsen: Even though as scientists we must stay open to the data, what do you consider a knockdown, or very strong, argument for your position?

Flynn: I know of no "knockdown" argument. You do not have to be a scientist to be open to more data. (Laughs) But it helps to have a strong commitment – moral commitment, to the truth. It is easy for any of us, and this includes me as well as Jensen, to dig yourself into a hole where you have fought so long for a particular point of view on a controversial issue that your mind is closed without your being fully aware of it. So good science would say that would never happen, but it is good to also have a strong moral resolve and say, "I could be wrong."

One of the things, which impressed me most, about Arthur Jensen is his quoting Ghandi's, 'I will never say anything in public, which does not match what I believe private.' There are plenty of people on the Left who have closed minds on the race and IQ issue. That is, their attachment to the notion of equality is so strong that they will not look at evidence.

It cuts both ways. You can either have progressive or regressive views, and essentially your reputation and your work become married to a position, so that you are not willing to look at further evidence. I would like to think that every social scientist has a professional concern about methodology but it also helps to have some moral stamina with regards to these things too.

Jacobsen: For the long-running and ongoing discussion about environment, genetics, and their interplay in the development of IQ, within your and others' research, how much does the environment play a role in development of IQ compared to genetics?

Flynn: That is a question that can only be answered differentially according to the cognitive ability. The environment plays a much more powerful role in vocabulary than in, say, arithmetic. Even when your genetic promise is fulfilled in arithmetic, that will not happen without a good environment. The best performance comes when high ability and high-quality environment reinforce one another.

Now, you also have to look at environment when it does not correlate with genes. That is what we look at when we want to assess how much your environmental background has handicapped you. Do not think that simply because your environment may someday match your genes, it has not done much to handicap you.

If your environment does not fully match genetic promise, and that can still be true of vocabulary at the age of 18, you will be handicapped on the SAT. Maybe, at the age of 35, you have a match between your cognitive environment and vocabulary, but your life is pretty much on its own railway track by that time.

Further, there is every reason to believe that someone can upgrade their environment beyond their genetic promise even in later life. If you want to upgrade your cognitive competence at any age, exercise your mind by reading and thinking. This upgrading of your environment will pay dividends. It is very possible my old professor Leo Strauss did not think of anything else except political philosophy from the time he woke until the time he went to bed. I expect that he created an incredible mental environment, which is not advised if you wish to be sane, and that this probably upgraded his genetic talent even further. As practice upgrades a musician's talent, you can shoot above your genetic promise through cognitive exercise.

Jacobsen: That does tie into a point, which I have thought about for some time. It deals with the highest levels of ability tending towards certain activities…

Flynn: That depends, doesn't it? I think you should select the activities that are important for you? Let's say you are a person at about the 84th percentile for verbal intelligence. But let's say you want to write a great novel and that you immerse yourself in great literature and develop your vocabulary, seeking out friends that challenge you verbally. You could say, "That will not improve your intelligence. It only improves your capacity to write a great novel." So what, that is what you want, isn't it? You do not want to necessarily upgrade your intelligence for block design, Raven's progressive matrices, or object assembly. You want to enhance your intelligence with a specific purpose in mind.

Yet, people are strange. They say, "How can I upgrade my IQ?" I ask them, "Why do you not want something more important? What keeps you up at night? What problems do you want to solve? What do you really want to do? Why do you not upgrade that?" That is what is important for anyone who is not IQ-obsessed. All these people joining Mensa because they have high IQs. It might give you a sense of self-esteem, but I would trade 10 IQ points to be a better moral philosopher. And I actually know how to upgrade my environment as a moral philosopher. I know the things to read and think about to improve.

Jacobsen: Back to the present, you did a TED Talk entitled 'Why our IQ levels are higher than our grandparents' a short time ago.

Flynn: It has done pretty well, moving up to around 1,700,000 hits. It does about as well as academics do. It cannot compete with Stephen Hawking. It cannot compete with John Dawkins [Richard Dawkins?] at Cambridge – who questions the existence of God, and everyone in the world listens to it. But for an academic talk, it did pretty well.

Jacobsen: You stated, "If you scored people a century ago against modern norms they would have an average IQ of 70, if you score us against their norms we would have an IQ score of 130." You ask, "Does this mean our ancestors were on the verge of mental retardation?" Conversely, you ask, "Or are we all on the verge of being gifted?" You offer a third alternative. For those that have not seen the video, what is that third alternative?

Flynn: This is something everything goes crazy about. How could our ancestors be so stupid, or how could we be so intelligent? In the talk, I think I hit upon the solution. It is one thing to compare a 70 against current norms when that person has never been exposed to the modern world. It is another thing to score a 70 against current norms if you are living here and have been exposed to the modern world, and cannot make sense of it.

Yes, against current norms, people had a 70 back in 1900 because they did not live in a world that was visually rich, did not have the current level of formal education, lacked cognitive challenging work for 30% of people. So not being exposed to that modern world makes the IQ of 70 quite understandable. To compare it to someone who has an IQ of 70 today, who has been exposed to modernity, and does not have the innate talent to take it in, is such an obvious mistake. They were not feeble-minded. They were simply not modern.

Cognitive progress by generations over time has a tremendous influence. The environment – over a 100 years – has been enormously potent. When you say the environment is limited, you mean that its role today is limited in differentiating the two environments you and I have, when both of us are immersed in modernity. There is a different perspective there. Over time environment is virtually the only thing influential in terms of raising human competence. At a given time, if you and someone else came from much the same family, had much the same schooling, then genetic differences come into their own, but over time we have been upgraded by environment.

I made two mistakes in the TED talk. One was not meant to be there at all. I mentioned an Islamic father who does not kill his daughter for being raped. In defense, he says, “It is not in the Quran.” I should have made him say, “It is not in our family code of honor” – because there is no passage in the Quran to that effect. But many people in Islamic countries have inherited a traditional morality that dictates family honor. The other mistake I made, and I cannot imagine how I made it, was attributing the final quote to Dickens rather than Kipling.

The pressure is unusual. I always speak extemporaneously, but here the time limits are strict. You have a text in advance. I find it easier to either read a speech or to speak extemporaneously – instead of pretending to read extemporaneously and stick to a text. (Laughs) Here you must speak extemporaneously, but not deviate from a fixed text.

That reference to the Quran, I was not implying that the passage was in the Quran. I was merely implying that for someone to give up their inherited code of honor, they would need something like the Quran to override it. Since you are speaking quickly, you do not read in the necessary qualifications. I had a number of Islamic scholars saying, “There is no such passage in the Quran.” I have had to e-mail them back saying, “I know that. I know that.” I tell them I meant the code of honor, not the Quran, but one would need something like the Quran to override the code of honor.

Jacobsen: What about future work?

Flynn: In the future, I have other books, which I would like to write. I want to write a book on the way we mis-educate students for critical intelligence in higher education. I published a book in 2012 entitled *How to Improve Your Mind: 20 Keys to Unlock the Modern World*. It gives the education for critical intelligence which universities do not provide, but I still want to look at the universities in detail and show the way in which they are going astray.

Also, I feel insulted that I do not know in detail how to keep merchant bankers from bringing the world down into chaos every 20 years. I want to look at the behavioral problem involving the incentive system that would keep these guys from doing it.

Finally, I have a "law" book, which I want to write looking into the way the system of jurisprudence uses the concepts of praise and blame. Most immediately, I want to write on the way to teach political philosophy.

Jacobsen: What do you mean by 'system of jurisprudence uses the concept of praise and blame'?

Flynn: In my book *Fate and Philosophy*, it has a section on 'Free Will'. Half the time the law acts as if it believes in free will, "You did this. You were wicked. We are going to punish you for punishments sake." Other times, it says, "No one is responsible for a divorce breaking down. We will have no-fault divorce." I am not necessarily saying there is an inconsistency in treating divorce that way. I may be better for the kids, but I would like to look at the use of praise and blame in the law – see if we can be consistent about it.

Jacobsen: If any, what responsibility do academics and researchers have for contributing to society and culture?

Flynn: They have to be people that care about society and culture. There is nothing about being an academic that gives you better empathy with humanity than a carpenter. But if they have that, they have an unusual responsibility to weigh in on areas where informed opinion can carry society with it. If most American academics had not lost faith in the Vietnam War, heaven knows the consequences would have been. If only people who are knowledgeable could come to a common opinion about climate change, we could do something about it.

Unfortunately at present, they are in sad disarray. Although, the more expert you are, the more likely you are to take it seriously. There are certain issues, foreign policy issues in particular – where the weight of opinion by the decision-makers is heavily influenced by the people who write the editorials in the New York Times.

Jacobsen: Who most influenced you morally? Why them? Can you recommend any books or articles by them?

Flynn: I have a list of them in *Fate and Philosophy* at the end of the book. I say, “You ought to try and be humane. Here are 20 people I admire.” They range from Hillel to Jesus Christ to Martin Luther King to Eugene Victor Debs.

Jacobsen: What advice do you have for young academics interested in moral and political philosophy?

Flynn: They will not be interested in it, unless it becomes a near obsession for them. Educate yourself widely because you cannot solve the basic problems of moral and political philosophy without a good grounding in the social sciences. Also, reading literature widely is helpful.

Jacobsen: What worries and hopes do you have for the study of concepts in psychology, e.g. Intelligence, having practical implications for the larger culture and societies in general?

Flynn: Hard to tell, I am not a professional psychologist. I do not have too much insight into what psychologists are doing. I see no reason why psychology should not clarify the potentialities of human autonomy, despite the influence of genes. I have hopes that will happen, but a hope based on faith more than any survey of the work psychologists are doing.

A Theory of Categories for Analyzing and Unifying Various Bundles of Important or Interesting Concepts

Ronald K. Hoeflin

Introduction

I intended to focus exclusively on theories of truth here, but past experience has shown that when I limit myself to one topic, intelligent but not overly imaginative readers, not seeing the wider implications, take a dismissive, so-what attitude. So to circumvent such an annoying reaction I have decided to cover a wider range of topics as follows:

Part Zero: The Development and Gist of This Theory of Categories

Part One: Theories of Truth

Part Two: Peano's Axioms for Number Theory

Part Three: Aristotle's Categories

Part Four: Parts of Speech

Part Five: Episodes in Homer's *Odyssey*

Part Six: Types of Personality

Part Seven: Religion: A Definition

I have performed over 4,000 of these analyses, with these six among the more important and interesting ones, although they merely scratch the surface of the huge depth of this theory.

Part Zero: The Development and Gist of This Theory of Categories

At age 7 I decided my goal should be to "know everything".

At age 12 I collected basic concepts in such disciplines as astronomy (names of all the planets and their moons), geography (names of all the countries of the world), chemistry (names of all the chemical elements), history (names of all the emperors of the Western Roman Empire), anatomy (names of all the bones of the human body), and mathematics (names of all the higher numbers: thousand, million, billion, trillion, quadrillion, quintillion, etc., plus a list of the first 2001 digits of pi, of which I memorized the first 201).

At age 24 I came across and read Stephen Pepper's 1942 book titled *World Hypotheses*, which contained the unusual idea that any metaphysical system, in order to be orderly and coherent, should be based on a central guiding principle he called a root metaphor. The categories of a metaphysical system emerge from an analysis of its root metaphor, analogous to length, breadth, and height emerging from the analysis of a cube, or latitude, longitude, and altitude from the analysis of a sphere, the cube and sphere being like root metaphors for the rectangular and spherical coordinate systems in geometry. Root metaphors also help elucidate the distinctive theory of truth for each metaphysical system. In the middle of the book he suggested that the four major metaphysical systems might be unified by a single root metaphor, but in the last chapter he argued that such a comprehensive synthesis would fail because some of the theories of truth are inherently incompatible.

At age 44 I won an essay competition in which I unified several basic theories of truth, which solved the central problem in *World Hypotheses.*

At age 62 my theory of categories had gradually evolved from 4 to 13 categories (the prize-winning paper was at the 5-category stage). To show the power of this more elaborate theory, I listed all the theories of or perspectives on truth mentioned in the 1995 *Oxford Companion to Philosophy*, which by coincidence were 13 in number, and showed how they could be organized into a unified theory by means of my theory of categories.

At age 69 I had prior to this searched for lists of categories in philosophy reference books such as the 8-volume 1967 *Encyclopedia of Philosophy*, as well as general reference books such as *Bartlett's Familiar Quotations.* In 2013 at age 69 I read *Isaac Asimov's Book of Science and Nature Quotations* and noticed that nearly all the quotes I selected could be analyzed into 13 categories. This gave me the idea of compiling an encyclopedia of categories using quotation books as a nearly inexhaustible source of examples.

At age 76 I completed the 13-volume encyclopedia of categories on which I'd been working for 7 years, with a slim 14th volume designated Volume 0 containing a 3-page introduction to the entire opus, followed by a 60-page autobiography. This was the end of my childhood, obviously somewhat grandiose 69-year-long odyssey to "know everything." That turn of phrase reminds me that along the way I read Homer's *Odyssey*, which I found had exactly 13 episodes, culminating in Odysseus slaying the suitors of his wife, whom he'd left 20 years

previously to fight in the Trojan War. Those 13 episodes I sought, successfully I think, to unify by means of my 13 categories. So maybe Homer was wiser than we knew!

There is a reason why my 13 categories are so versatile. These categories were derived from the core idea In Stephen Pepper's final book titled *Concept and Quality*, published in 1967, where he devised his own metaphysical system that he dubbed "selectivism," which he said was based on the root metaphor of a goal-seeking purposive act, or more generally a "selective system," and he remarked (p. 17) that this was "the act associated with intelligence." Pepper's remark gave insight into how my long-standing interests in both philosophy and in intelligence could be regarded as closely interconnected. The basic structure of a purposive act or selective system is a feedback loop, which is the mechanism by which we interact with reality. We bounce our ideas off the world, typically through trial and error or careful experiment, to find out how it responds to our actions, giving us information about reality, the principal focus of philosophy, as well as our own nature, which includes our intelligence.

The feedback loop can be analyzed into 13 factors, corresponding to the 13 categories of my theory, in a very straightforward way. There is the self as an agent or drive-bearer, D; the world or reality as a collection of goal objects, G; our anticipation, A, of how our actions will affect the world; and the quiescence of this act, Q, when the world informs us through our perceptions how well we have succeeded in anticipating its response to our actions, or in other words how satisfying the outcome was, how truthful our anticipations were. We can represent the feedback loop by drawing a circle and inscribing in it a square, tilted on one corner. We then can put D, A, G, and Q at the corners of the square, with D at the top, A on the left, G on the bottom, and Q on the right. We get six more factors from the binary links between each pair of these four main factors: DA, AG, GQ, and QD along the four edges of the square, and DG and AQ across its middle. The circle or square unifies these ten interior factors, a unity that becomes an eleventh factor, U. The failure or negation, N, of this unity, as by failing to achieve a goal, becomes a twelfth factor. And there is a thirteenth factor, a subordinate drive factor, D', when we renew the initial drive, or when we start a new drive. These subordinate drives are analogous to a child's relationship to its parents, or a student's to its teacher. Larger structures, such as Whitehead's 51 categories, result from combinations of the 13 basic categories.

This theory provides insights into the rationale underlying various previously mysterious groups of concepts, such as Aristotle's ten categories; the 13 personality factors featured in the first (1990) edition of the book *Personality Self-Portrait*, and Peano's axioms for number theory as described by Bertrand Russell in his 1919 book, *Introduction to Mathematical Philosophy* (pp. 5-6). Russell lists three "primitive ideas" for the axioms: 0, successor, and number. He should have included a fourth primitive idea: property. One finds that Peano's five axioms link these primitive ideas in binary pairings. The four primitive ideas correspond to our four main factors: "0" is a drive factor, D, since 0 initiates the natural numbers: 0, 1, 2, 3, etc.; "successor" is anticipatory, A, since it leads us to anticipate that each natural number has a successor, e.g., the successor of 3 is anticipated to be 4; "number" corresponds to our goal-object factor, G, since numbers are the basic goal objects of number theory; and "property," a word that appears in several of Peano's axioms, is a quiescence factor, Q, since every statement about numbers purports to tell us some property of numbers, a quiescence factor because it reveals quiescent

information (if true) about numbers that satisfies our quest for knowledge about numbers, or (if false) fails to provide such information, and thus disappoints our quest for the quiescent satisfaction of understanding numbers. It was by tinkering with Peano's axioms that I discovered the need for the inner spokes of the feedback loop, DG and AQ, as shown, in the case of the DG connection, by the fact that Peano's first axiom, "0 is a number," links "0," a drive factor, D, as noted above, with "number," a goal-object factor, G, as also noted above; and, in the case of the AQ connection, as shown by the fact that the second clause of the fifth axiom links "successor," an anticipatory factor, A, with "property," a quiescence factor, Q.

People use these categories instinctively, as birds build nests, spiders build webs, or bees build honeycombs, without any training, apparently because all organisms, including *homo sapiens,* must grasp the geometrical structure of reality as revealed by the feedback loop in order to cope with reality, a knack evidently built into their DNA through the trials and errors of biological evolution over eons of time.

Mistakes are to be expected, as when a bird puts a twig in the wrong place when building a nest, or someone uses faulty grammar, e.g., the wrong part of speech. The basic parts of speech — nouns, pronouns, adverbs, adjectives, conjunctions, interjections, prepositions, articles, and numerals — can be correlated with the categories because in converting thoughts to words we must think in terms of the feedback loop. The detailed correlations of parts of speech with categories has a few stumbling blocks that I have not fully resolved yet, notably the fact that there are 13 categories but only at most ten parts of speech in even the more ambitious lists, so that we need to find three additional parts of speech in order for each part of speech to correspond to each category, if indeed a satisfactory one-to-one correlation exists. If indeed grammarians have overlooked three parts of speech, this would represent a major "mistake" on their part. Finally, notice that even a genius like Russell clearly overlooked property as a primitive idea for number theory!

Part One: Theories of Truth

The Oxford Companion to Philosophy (1995) in its article "truth" mentions ten theories of or perspectives on truth, followed by references to articles in this *Companion* on various specific theories of truth, of which three were apparently too minor to be mentioned in the main article on truth. These thirteen concepts of truth can be listed as follows in the order in which they appear (numberings added): (1) correspondence, (2) semantic, (3) coherence, (4) pragmatic, (5) substantive, (6) deflationary, (7) redundancy, (8) prosentential, (9) performative, (10) sophistical, (11) double truth, (12) logical truth, and (13) subjective truth.

Here is my suggested classification of these aspects of truth in terms of the symbols I use for the 13 principal categories:

D: (13) Subjective truth

DA: (4) Pragmatic truth

A: (12) Logical truth

AG: (9) Performative truth

G:: (8) Prosentential truth

GQ: (1) Correspondence truth

Q: (10) Sophistical truth

QD: (3) Coherence truth

DG: (11) Double truth

AQ: (2) Semantic truth

U: (5) Substantive

N: (6) Deflationary

D': (7) Redundancy

D: (13) Subjective truth, ascribed by the *OCP* to Kierkegaard in his *Concluding Unscientific Postscript*, can be classed in D since it is said to involve "a commitment to believe, in the face of 'objective uncertainty', in matters which cannot be demonstrated or verified, such as the existence of God" (*OCP*, p. 857). A "commitment" to believe is a drive, D, to believe.

DA: (4) Pragmatic truth, advocated foremost by the American philosophers Peirce, James, and Dewey, can be classed in DA since in *The Meaning of Truth: A Sequel to Pragmatism*, James "urges a connection between what is true and what is useful, pointing out, for instance, that a mark of a successful scientific theory is that it enables us, through associated developments in technology, to manipulate nature in ways hitherto unavailable to us" (OCP, p. 882). Here the "us" who are enabled are agents or drive-bearers, D, while the enabling hitherto "unavailable" to us is anticipatory, A, of those achievements thereby enabled.

A: (12) Logical truth is ascribed to Rudolf Carnap, notably in his book *The Logical Syntax of Language*, and we are told that "Finally, and perhaps most commonly, 'logical truth' may mean 'truth that is true in virtue of some result in a sound logical system'"; yet even in the absence of a logical system we have no trouble agreeing with the logical truth that "If some men are Greeks, then some Greeks are men" (OCP, p. 510). We can classify this perspective on truth in A since it can be anticipated, A, that such an assertion is true without resorting to the examination of actual Greeks or men as goal objects, so that the anticipation alone is sufficient to establish truth in such instances.

AG: (9) Performative truth, ascribed to P. F. Strawson in the article "Performative Theory of Truth" in Paul Edwards' *Encyclopedia of Philosophy*, published in 1967, is said to hold that "the truth-predicate ["is true"] has a performative function, enabling speakers to express their agreement with one another" (OCP, p. 882). Thus, from this perspective, to say that such-and-such "is true" is to coax the hearer to agree, in anticipation, A, that the hearer as goal object, G, will be influenced accordingly, just as one coaxes a boulder into position with a lever.

G: (8) Prosentential truth, detailed by Dorothy Grover in a book titled *The Prosentential Theory of Truth*, "holds that the truth-predicate 'is true' only exists in order to effect economy of expression" (OCP, p. 882). According to Kirkham in his book *Theories of Truth*, "Just as the pronoun 'she' can simply take the place of its antecedent, as it does in 'Mary loved Dad, but she hated Mom', so too 'thatt' [i.e., 'that is true'] can simply take the place of its antecedent," as when John says "Snow is white" and Mary responds "Thatt" [i.e., "That is true"] (*Theories of Truth*, p. 326). This approach to truth can be classed in G because just as pronouns are stand-ins for nouns and refer to the same goal objects, G, as those nouns (e.g., "she" and "Mary" refer to the same goal object), by the same token a prosentence like "Thatt" can be regarded as a stand-in for the sentence "'Snow is white' is true," both referring to the same situational goal object, G, namely that snow is white.

GQ: (1) Correspondence truth, whose "clearest advocate has perhaps been J. L. Austin" (OCP, p. 881), is described in Austin's essay "Truth" (*Philosophical Papers*, p. 122) as follows: "A statement is said to be true when the historic state of affairs to which it is correlated by the demonstrative conventions . . . is of a type with which the sentence used in making it is

correlated by the descriptive conventions." The two key concepts here are "demonstrative" conventions and "descriptive" conventions. The former picks out a goal object, G, and the latter picks out the quiescent qualities, Q, that attach to that object. In the statement "That apple is red and juicy" the demonstrative conventions pick out which goal object, G, is meant by "that apple," while the descriptive conventions pick out what quiescent qualities, Q, are meant by "is red and juicy." The statement is true if the descriptive factors, here redness and juiciness, in fact apply to the demonstrative factor, here the apple in question.

Q: (10) Sophistical truth is ascribed to the ancient Greek Sophists, presumably including, for example, Gorgias and Protagoras but also to the modern theorist Stephen P. Stich in his book *The Fragmentation of Reason.* It is said to hold that "we literally should not care whether our beliefs are true or false, but rather whether they enable us to achieve more substantive goals such as happiness and well-being" (OCP, p. 882). We can classify this view in Q since happiness and well-being are quiescent satisfactions, Q.

QD: (3) Coherence truth is ascribed notably to F. H. Bradley, whose *Essays on Truth and Reality* "contains the classic statement of a coherence theory of truth" (OCP, p. 102). This perspective on truth can be classed in QD since it holds that truth "consists in a relation which truth-bearers have to one another, such as a relation of mutual support amongst the beliefs of an individual or a community" (OCP, p. 881). Here "mutual support amongst the beliefs" amounts to mutual agreement, which is a quiescent satisfaction, Q, while the "individual" or "community" that experience this agreement consists of agents or drive-bearers, D.

DG: (11) Double truth is ascribed to the medieval Islamic philosopher Averroes, "who, in his *Decisive Treatise*, tried to justify a double standard of truth for the masses and truth for the philosopher," as in the issue as to the "immortality of the soul" (OCP, p. 205). This conception of truth can be classed in DG because, in the example of immortality, the masses tend to think in concrete terms, so that eternal life would involve God's reassembly of our physical body, a focus on goal objects, G, while the philosopher tends to think of humans more abstractly as agents or drive-bearers, even if disembodied, which involves a focus on the drive factor, D. Double truth would then allow both factors, D and G, to contain their respective share of the truth, one emphasized by the masses and the other by philosophers.

AQ: (2) Semantic truth is ascribed notably to Alfred Tarski, "who was particularly concerned to overcome the semantic paradoxes to which talk of truth gives rise in natural languages, such as the liar paradox" (OCP, p. 820). The liar paradox can be illustrated by the assertion "This statement is a lie," which seems to be false if it is true and true if it is false. Tarski proposed that the truth-predicate "is true" should only be applied to a lower-level language by a higher-level one. He "believed that the method could not be extended to provide a definition of truth for any natural language, such as English" (OCP, p. 821). We can classify this perspective on truth in AQ because, regardless of what solution to the paradoxes one chooses, such paradoxes involve the anticipation, A, that an assertion like "This statement is a lie" must be either true or false, followed by the quiescent solution to the problem by noticing that one cannot define truth or falsity in a natural language such as English or Greek, so that the statement is neither true

nor false unless one somehow manages to construe it as involving a lower-level language and a higher-level language.

U: (5) Substantive truth "takes truth to be a real and important property of the items…that the theories take to be the primary bearers of truth," (*OCP,* p. 882), whether these truth-bearers be sentences, statements, propositions, or what have you. The chief substantive theories of truth are the correspondence, coherence, and the pragmatic. We can classify substantive theories in general in DAGQD, which we designate by U, since these three were classified in GQ, QD, and DA, respectively. Probably the performative perspective on truth should also be considered a substantive theory, since its classification by us in AG would complete the circuit of the feedback loop, DAGQD. The feedback loop is substantive because we find it in all our encounters with the substances in nature.

N: (6) Deflationary truth downplays the importance of truth as a serious philosophical issue. It typically includes those theories we classified in the nodes D, A, G, and Q, as well as D'. Those approaches to truth that are so dismissive as to be classified by us into one of the nodes, D, A, G, Q, or D', can be regarded as taking a fragmentary view of truth, as in the name of Stich's book, *The Fragmentation of Reason*, and such fragmentation ignores, disrupts, or negates, N, the smooth flow of events as we proceed from D to A to G to Q, and back again to D.

D': (7) Redundancy truth, ascribed to Frank P. Ramsey in his essay "Facts and Propositions" (in his collection of essays *Foundations*) might be classed in D'. For according to Ramsey "'It is true that Caesar was murdered' means no more than that Caesar was murdered, and 'It is false that Caesar was murdered' means no more than that Caesar was not murdered." He adds that "It is true that" and "It is false that" or the like "are phrases which we sometimes use for emphasis or for stylistic reasons, or to indicate the position occupied by the statement in our argument" (*Foundations*, p. 44). If we take kissing the Pope's ring by analogy, one might kiss is not just as an empty gesture but "for emphasis," as to emphasize one's allegiance to the Pope as leader of the Roman Catholic Church, or "for stylistic reasons," as part of the usual ritual in greeting the Pope, or "to indicate the position occupied by the statement in our argument," in this case by the Pope in our religious beliefs. The ring is a stand-in for the Pope and the spiritual beings he represents, just as we can speak of "the Crown" when referring to a specific King. [Editor's Note: see synecdoche] The Pope and King would be full-fledged agents or drive-bearers, D, while the crown and the ring would be stand-ins for them, thus serving as subordinate agents or drive-bearers, D', that serve the same functions, albeit in a more muted fashion, as the actual Pope and King, such as in the functions of emphasis, style, or position. My *Encyclopedia of Categories* performs this sort of analysis for thousands of concepts other than those mentioned in this essay.

Part Two: Peano's Axioms for Number Theory

This was the first 10-category example I discovered (in 1993). In his *Introduction to Mathematical Philosophy* (1919) Bertrand Russell remarked (p. 4): "That all traditional pure mathematics can be derived from the natural number is a fairly recent discovery, though it had long been suspected." Russell says Giuseppe Peano reduced "the theory of the natural numbers" to just "three primitive ideas," namely "0, number, [and] successor," and "five primitive propositions," or axioms, somewhat simplifying the nine axioms that Peano first published in 1889. Russell's version is as follows:

(1) 0 is a number.

(2) The successor of any number is a number.

(3) No two numbers have the same successor.

(4) 0 is not the successor of any number.

(5) Any property which belongs to 0, and also to the successor of every number which has the property, belongs to all numbers.

If we construe "property" as a fourth primitive idea, the primitive ideas will correspond to D, A, G, and Q, and the primitive propositions or axioms link these primitive ideas in pairs, yielding the following ten-category analysis:

D: 0

DA: Axiom 4

A: Successor

AG: Axioms 2 and 3

G: Number

GQ: Axiom 5C

Q: Property

QD: Axiom 5A

DG: Axiom 1

AQ: Axiom 5B

D: 0 can be classed in D because, like the first domino in a row of dominoes, the fall of which causes all the others to fall one by one, it energizes or drives, D, the whole process (e.g., counting) that creates the successive natural numbers, namely the positive integers 1, 2, 3, etc.

A: Successor can be classed in A because a successor is a number that is anticipated, A, to follow another number that it is the successor of, as the successor of 3 is anticipated to be 4.

G: Numbers can be classed in G because they are the basic goal object, G, for number theory, as celestial bodies are the basic goal objects for astronomy.

Q: Property can be classed in Q since numerical properties like being even or odd are quiescent properties, Q, of equations like x = 2y or x = 2y + 1, respectively, x being always even in the equation x = 2y and always odd in the equation x = 2y + 1, where y is any natural number such as 1 or 2 or 3 or so forth.

Then the axioms fall into place because they connect these four primitive ideas in pairs:

DA: Axiom 4: 0 is not the successor of any number can be classed in DA because it links the primitive idea of 0, which we classed in D, with the primitive idea of successor, which we classed in A, since "successor of any number" is simply another way of saying "successor."

AG: Axioms 2: The successor of any number is a number can be classed in AG because it connects the primitive idea of successor, which we classed in A, with the primitive idea of number, which we classed in G. And Axiom 3: No two numbers have the same successor likewise links numbers, which we classed in G, with successor, which we classed in A.

GQ: Axiom 5C: Any property…belongs to all numbers links the primitive idea of property, which we classed in Q, with the primitive idea of number, which we classed in G.

QD: Axiom 5A: Any property which belongs to 0 can be classed in QD because it links the primitive idea of property, which we classed in Q, with the primitive idea of 0, which we classed in D.

AQ: Axiom 5B: Any property which belongs…to the successor of every number which has the property can be classed in AQ since it links the primitive idea of successor, which we classed in A, with the primitive idea of property, which we classed in Q.

Part Three: Aristotle's Categories

After discovering how to build a ten-category structure through my investigation of Peano's axioms, I immediately tried to apply the lesson to the most famous ten-category structure of all, Aristotle's categories. These can be found in Chapter 4 of his essay titled *Categories* (1b25-2a4) as follows (numberings added): "Expressions which are in no way composite signify: (1) substance, (2) quantity, (3) quality, (4) relation, (5) place, (6) time, (7) position, (8) state, (9) action, or (10) affection. To sketch my meaning roughly, examples of substance are 'man' or 'the horse', of quantity such terms as 'two cubits long' or 'three cubits long', of quality such attributes as 'white', 'grammatical'. 'Double', 'half', 'greater', fall under the category of relation; 'in the market-place', 'in the Lyceum', under that of place; 'yesterday', 'last year', under that of time. 'Lying', 'sitting', are terms indicating position; 'shod', 'armed', state; 'to lance', 'to cauterize', action; 'to be lanced', 'to be cauterized', affection." Aristotle coined the word "category," meaning literally "down in the agora" or "down in the market-place," perhaps around 350 B.C., since he lived from 384 to 322 B.C He was evidently alluding to the variety of goods available for purchase in a market-place, which would seem to require some method of classification, leading to his categories as the most general possible system of classification.

My suggested classification of these ten categories is as follows:

D:	(1) Substance	a man or horse
DA:	(8) State	shod or armed
A:	(4) Relation	double, half, or greater
AG:	(9) Action	to lance or cauterize
G:	(5) Place	in the market place or in the Lyceum
GQ:	(10) Affection	lanced, cauterized
Q:	(3) Quality	white or grammatical
QD:	(2) Quantity	two cubits long or three cubits long
DG:	(7) Position	lying or sitting
AQ:	(6) Time	yesterday or last year

D: Substance can be classed in D since men and horses are agents or drive-bearers, D, meaning they initiate activities. In the *Metaphysics* (1035b14-15) Aristotle says explicitly "the soul of animals (for this is the substance of a living being) is their substance."

DA: Shod can be classed in DA since to be shod or armed is to be an agent or drive-bearer, D, that has equipment that is anticipated, A, to serve a purpose, as when a man is armed for battle or a horse is shod for travel.

A: Relation can be classed in A since to be double, half, or greater specifies what is anticipated, A, of something, as when one anticipates that the enemy's army will be double the size of one's own.

AG: Action can be classed in AG since to lance or cauterize is to treat a wound as goal object, G, in anticipation, A, of bringing it to greater health.

G: Place can be classed in G since to be in the market place or in the Lyceum is to be a goal object, G, in a specific location.

GQ: Affection can be classed in GQ since lanced or cauterized is what we say of a wound as goal object, G, that has the quiescent manifestation, Q, of having been lanced or cauterized, e.g., a slice mark or a burn mark.

Q: Quality can be classed in Q since what is white or grammatical is a quiescent manifestation, Q, as when we perceive or notice that a fence is white or that a sentence is grammatical.

QD: Quantity can be classed in QD since a quantity of, say, three inches on a straight line is measured by marking a starting point as an initial quiescent manifestation, Q, followed by a drive, D, to put a second mark one inch further along the line. This second mark then serves as a quiescent manifestation, Q, from which a second repetition of the same act of measurement is performed. This procedure is repeated until a distance or quantity of three inches along the line has been reached, the crucial factors being the linking of Q and D three times in succession.

DG: Position can be classed in DG since lying or sitting are performed by some agent or drive-bearer, D, who is occupying a specific goal object, G, such as a bed or chair.

AQ: Finally, time can be classed in AQ since to have been wounded in a battle yesterday or last year leads one to anticipate, A, when in time the quiescent manifestation, Q, of this wound occurred.

Part Four: Parts of Speech

German philosopher Arthur Schopenhauer in *The World as Will and Representation* (vol. I, p. 477 of the Dover English edition) wrote that he had "had to reject Kant's doctrine of the categories, just as he himself had rejected that of Aristotle, I will introduce by way of suggestion a third method of reaching what is intended" by the concept of categories. In the next paragraph he says that this third method is to use the "parts of speech," which he lists as "a substantive [i.e., a noun] or an adjective, a verb or an adverb, a pronoun, a preposition, or some other particle." This list of only six parts of speech is a bit skimpy by more recent standards. *The New Columbia Encyclopedia* (1979) lists them in its article "parts of speech" as "noun, verb, adjective, adverb, interjection, preposition, conjunction, and pronoun. Some grammarians add articles and numerals." The classification of these parts of speech in terms of our present categories is somewhat flexible, depending on the sentence one chooses to use as one's ideal model. To make the analysis more complete, I will add three hypothetical new parts of speech to bring the total up to thirteen to match the number of our categories, but the final three I will put in brackets to indicate their hypothetical nature. My model sentence will be this one: "(1) He (2) quickly (3) ran (4) through (5) the (6) dark (7) room (8) and (9) yelled six times (10) "Ouch!" (11) as he was bitten (12) by vicious (13) guard dogs." My suggested classification is as follows:

D: (1) He (pronoun)

DA: (2) Quickly (adverb)

A: (3) Ran (verb)

AG: (4) Through (preposition)

G: (7) Room (noun)

GQ: (6) Dark (adjective)

Q: (10) Ouch! (interjection)

QD: (8) And (conjunction)

DG: (5) The (article)

AQ: (9) Yelled six times (numeral)

U: (11) As he was bitten (positive)]

N: (12) By vicious (negative)]

D': (13) Guard dogs (subordinative)]

D: (1) He (pronoun) can be classed in D since “he” refers to an agent or drive-bearer, D.

DA: (2) Quickly (adverb) can be classed in DA since what is done “quickly” is done by the person designated as “he,” namely an agent or drive-bearer, D, while his doing something quickly is done in anticipation, A, of reaching a goal more promptly.

A: (3) Ran (verb) can be classed in A since running is done in anticipation, A, of getting somewhere in a hurry.

AG: (4) Through (preposition) can be classed in AG since this preposition reveals the anticipation, A, of a goal object, G, to be arrived at—namely a dark room.

G: (7) Room (noun) can be classed in G since a room can be regarded as a typical goal object, G.

GQ: (6) Dark (adjective) can be classed in GQ since what is dark refers to a room as goal object, G, with the quiescent manifestation, Q, of having the visual appearance of being dark.

Q: (10) Ouch! (interjection) can be classed in Q since this word expresses the quiescent manifestation, Q, of pain being felt.

QD: (8) And (conjunction) can be classed in QD since a conjunction typically links the quiescent completion, Q, of some activity, in this case running through a dark room, followed by the drive, D, to mention a subsequent activity, namely being bitten by vicious dogs.

DG: (5) The (article) can be classed in DG since this word refers to the room as goal object, G, from the perspective of any observers as agents or drive-bearers, D, such as the runner or possibly the dogs.

AQ: (9) Yelled six times (numeral) can be classed in AQ since the yelling is an audible quiescent manifestation, Q, while the number six leads one to anticipate, A, how many times the runner was bitten by the dogs, resulting in the yelling.

U: (11) As he was bitten (positive) can be classed in U because these words express the completed positive unity, U, of the runner’s having been bitten six times by the dogs. “Positive” would be the name of the proposed eleventh part of speech.

N: (12) By vicious (negative) can be classed in N since being vicious amounts to a trait of the dogs that would be considered negative by anyone but a sadist. “Negative” would be the name of the roosed twelfth part of speech.

D’: (13) Guard dogs (subordinative) can be classed in D’ since to be a guard dog would be the subordinate status assigned to the dogs. “Subordinative” would be the name of the thirteenth part of speech.

Another possibility would be to take the three traditional sentence-ending punctuations—period, question mark, and exclamation point—as representing three parts of speech, since even a sentence is a part of a larger body of speech just as a single word is. A sentence ending in a period would correspond to the "positive" part of speech proposed above, since it refers to some positive state of affairs as a positive unity, U. A sentence ending in a question mark would correspond to the "negative" part of speech proposed above, since it suggests a negation, N, in one's knowledge that the question seeks to have one informed about. And a sentence ending in an exclamation point would correspond to the "subordinative" part of speech proposed above, since to exclaim about something in a sentence suggests the excitement of formulating a drive to continue the old action or start a new one by a subordinate agent or drive-bearer, D'.

Part Five: Episodes in Homer's *Odyssey*

After reading *The Seven Basic Plots* by Christopher Booker, I embarked on the project of reading Homer's *Odyssey* in order to add his adventures as a set of categories for my category-collecting project, since Booker had mentioned the number of adventures but without sufficient detail for me to classify them. At the end of the story, Odysseus shoots an arrow through twelve ax handles in order to strike a target, as witnessed by his wife's suitors. The twelve ax handles symbolize the twelve adventures he had struggled through in his ten-year travels after the Trojan War back to his home on the island of Ithaca. After several years, I no longer had ready access to my notes on the book, so I looked online for a synopsis of the episodes or adventures and found one at:

http:://wiki.answers.com/Q/What_are_the_12_adventures_of_Odysseus:

"First, they arrive at Ismarus, the land of the Cicones. They sack the city, killing the men and taking the women and treasure as bounty. They are later attacked by the Cicones. Second, They arrive in the Land of the Lotus-eaters. Here, his men eat lotus flowers. The flowers cause the men to lose their desire to return home, so Odysseus must force them back to the ship. Third, at the Cyclops' cave, his men escape being eaten only by Odysseus blinding the one-eyed Polyphemus (son of Poseidon). He does so by claiming that his name is "No One." When Polyphemus screams, he says that "No One" is attacking him, so his fellow cyclopes do not come to his rescue. As a result, Poseidon threatens Odysseus with much suffering and the ultimate loss of his men. Fourth, King Aeolus gives Odysseus and his men a place to stay for about a month. Upon their departure, Aeolus puts winds in a bag and gives them to Odysseus, instructing him not to open it. The crew get close to Ithaca, but while Odysseus sleeps, they open the bag of winds and are flown back towards Aeolia. Fifth, at the Land of the Laestrygens, giant cannibals eat all but one of Odysseus' ships. Sixth, at Aeaea, the enchantress Circe turns Odysseus' scouting party into pigs. But Hermes, the messenger of the gods, gives Odysseus an herb against a similar fate. Odysseus sleeps with Circe and convinces her to turn the pigs back into men. She does so, but only after they have stayed on her island for a year. She tells Odysseus that he must go see Tiresias in the Underworld before continuing his journey. Seventh, Odysseus meets with the blind prophet Tiresias in the Underworld. He encounters lost family and friends. Tiresias warns him of the dangers that lie ahead. Eighth, Odysseus and his men sail past the Sirens, who sing songs to lure passing crews and ships to their deaths. Odysseus orders his men to fill their ears with wax and to tie him to the mast of the ship, so that he may hear the songs but will not be able to succumb to their seduction. Ninth, Odysseus must choose between sailing by either Scylla, a six-headed monster, or Charybdis, a giant whirlpool. Taking Circe's advice, he sails by Scylla, who devours only six of his men and allows them to pass. Tenth, They go to Thrinacia, the home of the sacred cattle. Before docking the ship, he forces his men to swear an oath forbidding them from eating the cattle. However, after their food supply depletes, the men begin to kill and eat the sacred cattle. Angered, the gods punish Odysseus and his men. After this adventure, Odysseus is the last man standing and must float away on the branch of a fig tree (his men and ship were all destroyed by the gods). Eleventh,

Odysseus goes to Ogygia, home of Calypso. She keeps him captive for seven years. She gives him a raft but it is soon destroyed by Poseidon, who is still angry with him because of the death of his cyclops son. Twelfth, Odysseus floats to Scheria, where he is taken in by the princess and king. He tells them his story and they agree to help him by providing him with one of their best ships to return to Ithaca. And thirteenth, Odysseus finally returns home only to find that his house is full of suitors for his wife. He must prove himself and soon, after his victory against the suitors, must show his identity."

The same web site then summarizes the locations of these episodes as follows:

- Island of Ismarus
- Island of the Lotus - Eaters
- Island of Cyclops
- Island of King Aeolus
- Island of Laestrygonians
- Island of Circe
- Underworld
- Island of Sirens
- Scylla and Charybdis
- Island of the Sun
- Island of Calypso
- Island of Nausica
- Island of Ithaca (where Odysseus kills his wife's suitors)

Here is my suggested classification:

D: (2) Lotus-eaters

DA: (9) Choosing between Scylla and Charybdis

A: (4) The winds of Aeolus

AG: (1) Ismarus: sack city, kill men, rape women

G: (5) Giant cannibals

GQ: (10) Sacred cattle of Apollo

Q: (3) Cyclops

QD: (8) Sirens

DG: (11) Calypso

AQ: (7) A prophet predicts Odysseus's future

U: (12) Tells story, gets help

N: (13) The suitors on Ithaca

D': (6) Circe

D: (2) Lotus-eaters can be classed in D since eating lotus flowers causes the men to lose the desire to return home, a desire being a drive, D.

DA: (9) Choosing between Scylla and Charybdis can be classed in DA since choices occur in the DA phase, where one must try to find whichever alternative can be anticipated, A, to resolve one's desire or drive, D, in the optimum or least unsatisfactory way.

A: (4) The winds of Aeolus can be classed in A since yjr winds were anticipated, A, to drive the ships in a desired direction but ended up driving them in the opposite direction.

AG: (1) Ismarus: sack city, kill men, rape women can be classed in AG since it involves a typical piratical activity in which the pirates anticipate, A, obtaining the goal objects, G, they desire, but end up being driven off and losing their booty.

G: (5) Giant cannibals can be classed in G since they end up converting most of Odysseus's men into food, a goal object, G.

GQ: (10) The sacred cattle of Apollo are used for food by Odysseus's men, where food is a goal object, G, while eating them is intended to yield the quiescent satisfaction, Q, of ending hunger.

Q: (3) Cyclops can be classed in Q since Odysseus and his men escape by blinding the Cyclops, which makes it impossible for him to see them as a visual quiescent manifestation, Q.

QD: (8) Sirens can be classed in QD since their singing is a quiescent manifestation, Q, that lures men to their doom, their desire to approach the sirens amounting to a drive, D, to do so.

DG: (11) Calypso can be classed in DG since her holding Odysseus captive for seven years amounts to her desire or drive, D, keep him as a goal object, G.

AQ: (7) A prophet predicts Odysseus's future can be classed in AQ since the prediction leads to an anticipation, A, while the fulfillment of the predictions amounts to the quiescent satisfaction, Q, of the prophecies.

U: (12) Tells story, gets help can be classed in U since it finally yields the completion of Odysseus's journey, which is the unity, U, of his oft-thwarted efforst to get home to his wife.

N: (13) The suitors on Ithaca pose the last obstacle to Odysseus's journey, since they could disrupt or negate, N, his reacquiring his wife and his land.

D': (6) Circe can be classed in D' since she turns many of Odysseus's men into pigs, which are subordinate agents or drive-bearers, D'.

Part Six: Personality Types

In the first edition (1990) of their book *Personality Self-Portrait* John M. Oldham and Lois B. Morris discuss thirteen personality factors derived from the personality disorders section of the DSM-III-R (*Diagnostic and Statistical Manual of the American Psychiatric Association,* third edition revised. They regarded each "disorder" as simply an exaggeration of ordinary personality factors. These disorders and their normal variants can be listed as follows, listed in the order in which they appear in the book's table of contents, but with my own numberings):

1A: Conscientious style	1B: Obsessive-compulsive disorder
2A: Self-confident style	2B: Narcissistic disorder
3A: Devoted style	3B: Dependent disorder
4A: Dramatic style	4B: Histrionic disorder
5A: Vigilant style	5B: Paranoid disorder
6A: Sensitive style	6B: Avoidant disorder
7A: Leisurely style	7B: Passive-aggressive disorder
8A: Adventurous style	8B: Antisocial disorder
9A: Idiosyncratic style	9B: Schizotypal disorder
10A: Solitary style	10B: Schizoid disorder
11A: Mercurial style	11B: Borderline disorder
12A: Self-sacrificing style	12B: Self-defeating disorder
13A: Aggressive style	13B: Sadistic disorder

My suggested classification is as follows:

D: 2: Self-confident/narcissistic

DA: 11: Mercurial/borderline

A: 5: Vigilant/paranoid

AG: 13: Aggressive/sadistic

G: 12: Self-sacrificing/self-defeating

GQ: 4: Dramatic/histrionic

Q: 7: Leisurely/passive-aggressive

QD: 1: Conscientious/obsessive-compulsive

DG: 3: Devoted/dependent

AQ: 8: Adventurous/antisocial

U: 6: Sensitive/avoidant

N: 10: Solitary/schizoid

D': 9: Idiosyncratic/schizotypal

D (2): Self-confident/narcissistic people can be classed in D since they have sufficient confidence in themselves to manage their own affairs through their self-initiated drives, D.

DA (11): Mercurial/borderline people can be classed in DA since they are often torn between alternative means that might be anticipated, A, to resolve their drives, D.

A (5): Vigilant/paranoid people can be classed in A because they are wary of various dangers that they anticipate, A, might occur to thwart them.

AG (13) Aggressive/sadistic people can be classed in AG since they are willing to confront or attack an obstacle or enemy in anticipation, A, of defeating such a goal object. G.

G (12): Self-sacrificing/self-defeating people can be classed in G since they will let themselves be used as goal objects, G, by others without regard to their own wishes or needs.

GQ (4) Dramatic/histrionic people can be classed in GQ since they want to show themselves off as goal objects, G, such that what they show of themselves affects others n a dramatic way, as an actor would affect an audience.

Q (7): Leisurely/passive-aggressive people can be classed in Q since they are focused on their own quiescent satisfactions, Q, as in eating a meal or reading a book in a leisurely way without regard to the impatience of others.

QD (1): Conscientious; obsessive-compulsive people can be classed in QD because they are focused on the completion of a task such that its quiescent satisfactions, Q, will seem right to observing agents or drive-bearers, D, even if this requires repeated self-corrections.

DG (3): Devoted/dependent people can be classed in DG since they view themselves as servants of a person or cause, where they themselves are goal objects, G, while the presiding person or cause provides the central drive, D, they wish to serve.

AQ (8): Adventurous/antisocial people anticipate, A, quiescently satisfying experiences, Q, from their adventures, even if those adventures are antisocial in their nature, as in the commitment of a crime.

U (6): Sensitive/avoidant people can be classed in U since I noticed that in taking this test, without any knowledge of what personality factors it was testing for, I scored a perfect 100% on the questions that pertain to being sensitive, whereas all my other twelve factors ranged from 0% to 56%, a result that makes me an almost perfect exemplar of the sensitive type. A sensitive person would be aware of all aspects of reality, including all phases of the feedback loops by which that reality is grasped. This hyper-awareness would lead to a desire to organize that diversity into a unity, U. So as noted in Part Zero I recognized a desire to “know everything” by age 7, collected basic concepts in major disciplines by age 12, then discovered at age 24 Pepper’s *World Hypotheses*, where the categories in each coherent metaphysical system were said to derive from and be untied, U, by an underlying root metaphor, with the possibility of unifying all metaphysical systems under a single root metaphor. That ultimate unity was supplied by the root metaphor in Pepper’s final book, *Concept and Quality,* out of which the present theory of categories arose.

N (10): Solitary/schizoid people can be classed in N since they regard their affairs as separate from those of others, and this separation amounts to a negation, N, of any concern with the affairs of others as having any significant relevance to their own.

D’ (9): Idiosyncratic/schizotypal people can be classed in D’ since they are prepared to think for themselves and launch their own individual projects or ideas, even if they seem strange to others, projects that amount to subordinate drives, D’, compared to those that preoccupy most others in the community.

Part Seven: Religion: A Definition

The following is my own definition of religion, which may not please most people but at least it represents my honest opinion. It illustrates how even a single concise sentence can contain all thirteen of our categories. "(1) Religion: (2) People (3) desperately (4) clutching (5) at (6) straws (7) to avoid (8) facing (9) their (10) utter (11) and (12) inevitable (13) doom." Suggested classification:

D: (2) People

DA: (3) Desperately

A: (4) Clutching

AG: (5) At

G: (6) Straws

GQ: (7) To avoid

Q: (8) Facing

QD: (11) And

DG: (10) Utter

AQ: (12) Inevitable

U: (1) Religion

N: (13) Doom

D': (9) Their

D: (2) People can be classed in D since they are agents or drive-bearers, D.

DA: (3) Desperately can be classed in DA since it links the drive word "people" and the anticipatory word "clutching," A.

A: (4) Clutching can be classed in A since this word anticipates, A, something that is clutched.

AG: (5) At can be classed in AG since it links the anticipatory word "clutching," A, and the goal-object word "straws," G.

G: (4) Straws can be classed in G since they are goal objects, G.

GQ: (5) To avoid can be classed in GQ since these words link the goal-object word “straws,” G, and the quiescent word “facing,” Q.

Q: (6) Facing can be classed in Q since what is faced presents a quiescent perception, realization, or insight, Q.

QD: (11) And can be classed in QD since in the expression “utter and inevitable” the word “and” links the quiescent manifestation, Q, expressed by the first word, “utter,” followed by the drive, D, to utter the second word, “inevitable.”

DG: (10) Utter can be classed in AQ since what is utter is seen by an agent or drive-bearer, D, as an exhaustive terminus or end, which is a goal object, G.

AQ: (12) Inevitable can be classed in AQ since what is inevitable can correctly be antici-pated, A, to lead without fail to a specific quiescent outcome, Q, as night inevitably follows day.

U: (1) Religion can be classed in U since this word specifies the complete theme of the definition, a definition that proceeds through and unifies all the other twelve factors making up religion as expressed by the other words of this definition.

N: (13) Doom can be classed in N since this word refers to the ultimate negation, N, of human and all other forms of life, including any consciousness they may have.

D’: (9) Their can be classed in D’ since this word refers to each and every person as a subordinate agent or drive-bearer, D’, subordinate, e.g., by virtue of inevitably ceasing to exist.

The Metaphysics of Mathematics: A Categorial Analysis

Ronald K. Hoeflin

Introduction

This paper is "metaphysical" by virtue of being based on a theory of categories derived from Stephen C. Pepper's 1967 book *Concept and Quality: A World Hypothesis,* which presented a metaphysical theory he called selectivism. Selectivism proposed that all facts could be analyzed in terms of a selective system or more concretely a purposive act, which Pepper said "is the act associated with intelligence" (*CQ,* p. 17). Pepper conceived of this act as a feedback loop consisting of four primary categories: a drive, D, such as thirst or hunger; an anticipatory set, A, namely the means, such as the tools and techniques, by which one anticipates satisfying one's drive; a goal object, G, such as food or water, by which one's drive may be satisfied; and a quiescence, Q, by which one experiences the satisfaction of one's drive, such as the quenching of thirst or the satisfaction of hunger. The quiescence can consist of positive, negative, or neutral experiences, the negative ones amounting to an experience that does not satisfy one's drive, as when one accidentally drinks salt water to satisfy a thirst drive.

Over a period of years I elaborated these four categories into 13 categories, consisting of the basic four, D, A, G, and Q; six binary connections, DA, AG, GQ, and QD around the periphery of the feedback loop, plus DG and AQ across its center; a successful unification, U, of these ten categories by which they attain a satisfaction of one's goal; a negation, N, of these ten categories by which they fail to satisfy one's goal; and a subordinate agent or drive-bearer, D', which is like a pupil's relationship to its teacher or a child's relationship to its parents, by which the original drive may be continued or replaced by some new or modified drive.

I found that a sufficiently elaborate quotation can be analyzed into all 13 of these categories, and this suggested to me the idea of creating an encyclopedia of categories for which dictionaries of quotation on specific topics or from specific thinkers could supply a nearly inexhaustible source of examples. But of course I welcomed examples from any source. However, I tended to favor examples that could be analyzed into all 13 of my categories.

The present paper focuses on examples from mathematics: specifically their axioms, their theorems, and even in one case their unproven conjectures. These examples span the entire history of mathematics from ancient times to the present.

Eudlid's Postulates for Geometry

Book One of *Euclid's Elements* contains his five postulates for geometry, and the following translation can be found on page 2 of Volume 10 of *The Great Books.* The numberings in brackets have been added here for purposes of subsequent analysis:

POSTULATES

Let the following be postulated:

1. [1] To draw a straight line [2] from any point to any point.

2. [3] To produce a finite straight line [2] continuously in a straight line.

3. (5) To describe a circle [6] with any center and distance.

4. [7] That all right angles [8] are equal to one another.

5. [9] That, if a straight line falling on two straight lines [10] make the interior angles on the same side less than two right angles, [11] the two straight lines [12] if produced indefinitely, [13] meet on that side on which are the angles less than the two right angles.

Suggested classification:

D: [1] To draw a straight line

DA: [2] From any point to any point.

A: [3] To produce a finite straight line

AG: [4] Continuously in a straight line

G: [5] To describe a circle

GQ: [6] With any center and distance

Q: [7] That all right angles

QD: [8] Are equal to one another

DG: [9] That if a straight line falling on two straight lines

AQ: [10] Make the interior angles on the same side less than two right angles

U: [13] Meet on that side on which are the angles less than two right angles

N: [12] If produced indefinitely

D': [11] The two straight lines

My justification of these classifications:

D: [1] To draw a straight line can be classed in D since these words indicate a drive, D, to draw a straight line.

DA: [2] From any point to any point can be classed in DA since these words indicate that the drive, D, to draw a straight line is anticipated, A, to go from any point to any other point.

A: [3] To produce a finite straight line can be classed in A since these words indicate the anticipation, A, of being able to draw a straight line of finite length.

AG: [4] Continuously in a straight line can be classed in AG since these words indicate that the finite straight line that is drawn would have no gaps in it.

G: [5] To describe a circle can be classed in G since a circle is a goal object, G, that one is to draw.

GQ: [6] With any center and distance can be classed in GQ since the “any center” indicates that any point can be used as the center of a circle as goal object, G, that one draws, while “any distance” indicates that the radius of the circle can be a straight line of any length.

Q: [7] That all right angles can be classed in Q since these words refer to any right angle as a quiescent manifestation, Q.

QD: [8] Are equal to one another can be classed in QD since “one another” refers to any two right angle as quiescent manifestations, Q, while their being “equal” to one another indicates that there is no obstacle to the drive, D, to show that any two right angles are equal.

DG: [9] That if a straight line falling on two straight lines can be classed in DG since “if a straight line *is made to* fall on two straight lines,” then the italicized words “is made two” that are implicit in the word “falling” refer to a drive, D, to make a straight line fall on two other straight lines, while these two other straight lines are the goal objects, G, of this drive.

AQ: [10] Make the interior angles on the same side less than two right angles can be classed in AQ since these words indicate the anticipation, A, that the two right angles on the same side, when combined, will add up *less than* two right angles, i.e., a straight line of 180^0, as their quiescent manifestation, Q.

U: [13] Meet on that side on which are the angles less than two right angles can be classed in U since this meeting would amount to a unification, U, of the three straight lines in the shape of a triangle.

N: [12] If produced indefinitely can be classed in N since “indefinitely” indicates “without limit in their length,” which is a negation, N, of any limitation in their length.

D’: [11] The two straight lines can be classed in D’ since these lines as subordinate drive, D’, since one exerts a drive, D, to extend them as far as necessary for them to meet, and these drives can be regarded as “subordinate” to the main drive of drawing the first straight line so that it intersects the two other straight lines.

Fermat's Last Theorem

In the Wikipedia article "Fermat's Last Theorem" this theorem is said to have been first mentioned in 1637 by the French mathematician Pierre de Fermat (1607-1665) when he was probably just 29 years of age and hence probably not the last theorem he devised. He claimed to have a proof of the theorem that was too large to include in the margins of the book he mentioned the theorem in, but it took 358 years for a successful proof to be found, by Andrew Wiles, a proof first formally published in 1995. Wikipedia describes the theorem as follows (numberings added for subsequent analytical purposes): "(1) In number theory, Fermat's Last Theorem…states that (2) no (3) three (4) positive (5) integers (6) a, b, and c (7) satisfy (8) the equation (9) $a^n + b^n = c^n$ (10) for any integer value (11) of n (12) greater than (13) 2,"

Suggested classification :

D: (2) No

DA: (3) Three

A: (4) Positive

AG: (5) Integers

G: (6) a, b, and c

GQ: (7) Satisfy

Q: (8) The equation

QD: (9) $a^n + b^n = c^n$

DG: (11) Of n

AQ: (10) For any integer value

U: (1) Fermat's Last Theorem

N: (12) Greater than

D': (13) 2

My justifications of these classifications are as follows:

D: (2) No can be classed in D since this word can be elaborated to mean “one can find no,” where “one” refers to an agent or drive-bearer, D, who exerts a drive to find the subsequently specified numerical relationships.

DA: (3) Three can be classed in DA since in the expression “no three positive” the word “three” links the drive word “no,” D, and the anticipatory word “positive,” A.

A: (4) Positive can be classed in A since this word leads one to anticipate, A, that the numbers mentioned next must each be greater than 0.

AG: (5) Integers can be classed in AG since in the expression “positive integers a, b, and c” the word “integers” links the anticipatory word “positive,” A, and the goal-object words “a, b, and c,” G.

G: (6) a, b, and c can be classed in G since these letters refer to positive integers as goal objects, G, that one is to specify or find.

GQ: (7) Satisfy can be classed in GQ since in the expression “a, b, and c satisfy the equation” the word “satisfy” links the goal-object words “a, b, and c,” G, and the quiescent words “the equation,” Q.

Q: (8) The equation can be classed in Q since this equation indicates a quiescent manifestation, Q, that is to be satisfied by any three appropriate positive integers.

QD: (9) $a^n + b^n = c^n$ can be classed in QD since if specifies a numerical rela-tionship that one is to exert the drive, D, to satisfy such that the quiescent manifes-tation, Q, of the equality holding true is satisfied.

DG: (11) Of n can be classed in DG since n refers to some positive integer as goal object, G, that one is to exert a drive, D, to find such that it satisfies the equa-tion $a^n + b^n = c^n$.

AQ: (10) For any integer value can be classed in AQ since these words lead one to anticipate, A, being able to find such an integer value as quiescent manifes-tation, Q, such that all the other specified conditions are met.

U: (1) Fermat’s Last Theorem can be classed in U since these words unify, U, all the foregoing portions of the theorem.

N: (12) Greater than can be classed in N since a number that is “greater than” the specified number, in this case 2, negates, N, choosing any numerical value for n that is *not* greater than 2.

D’: (13) 2 can be classed in D’ since this number is intended to elicit the drive to find a number that is greater than 2, which is a *subordinate* drive, D’, because it is just one of various other drives that must be jointly satisfied in order to satisfy the overall conditions of this theorem.

Four Color Theorem

In the Wikipedia article "Four Color Theorem," this theorem is described as follows (numberings added for later analytical purposes): "(1) In mathematics, the four color theorem, on the four color map theorem, states that, (2) given (3) any (4) separation (5) of (6) a plane (7) into (8) contiguous regions, (9) producing a figure called a map, (10) no more than four colors are required (11) to color the regions of the map (12) so that no two (13) adjacent regions have the same color." "Adjacent" means a boundary line, not a mere point. This theorem was first discovered on October 23, 1852, by Francis Guthrie while trying to color the map of counties of England, who brought the conjecture to the attention of the famous mathematician Augustus de Morgan. A proof that 5 colors are sufficient to color a map was found in the 1800s, but a proof that 4 colors are sufficient was not found until 1976 by Kenneth Appel and Wolfgang, who employed a computer to color all possible configurations. The computer proof met with resistance from the mathematical community because no human could check all the possible configurations by hand, but most mathematicians now accept this sort of proof.

Suggested classification:

D: (2) Given

DA: (3) Any

A: (4) Separation

AG: (5) Of

G: (6) A plane

GQ: (7) Into

Q: (8) Contiguous regions

QD: (9) Producing a figure called a map

DG: (11) To color the regions of the map

AQ: (10) No more than four colors are required

U: (1) The four color theorem

N: (12) So that no two

D': (13) Adjacent regions have the same color

My justifications for these classifications are as follows:

D: (2) Given can be classed in D since the one who gives exerts a drive, D, to give, while whoever takes what is given also exerts a drive, D, to take.

DA: (3) Any can be classed in DA since in the expression "given any separation" the word "any" links the drive word "given," D, and the anticipatory word "separation," A.

A: (4) Separation can be classed in A since a separation leads one to antici-pate, A, separate regions formed by the separation.

AG: (5) Of can be classed in AG since in the expression "separation of a plane" the word "of" links the anticipatory word "separation," A, and the goal-object words "a plane," G.

G: (6) A plane can be classed in G since a plane can be regarded as a goal object, G, e.g., the flat surface of a sheet of paper.

GQ: (7) Into can be classed in GQ since in the expression "a plane into contig-uous regions" the word "of" links the goal-object words "a plane," G, and the quies-cent words "contiguous regions," Q.

Q: (8) Contiguous regions can be classed in Q since contiguous regions would be observable quiescent manifestations, Q, as in the 48 contiguous states of the United States.

QD: (9) Producing a figure called a map can be classed in QD since what is "called a map" would be an observable quiescent manifestation, Q, while "producing a figure" would involve a drive, D, to produce the figure.

DG: (11) To color the regions of the map can be classed in DG since "to color" can be regarded as involving a drive, D, to color the regions of the map, while "the regions of the map" refers to goal objects, G, such as the 48 contiguous U.S. states regarded as 48 goal objects on a map.

AQ: (10) No more than four colors are required can be classed in AQ since these words lead one to anticipate, A, that the quiescent manifestation, Q, that four colors would be sufficient to color a map such that no two adjacent regions would have the same color.

U: (1) The four color theorem can be classed in U since these words refer to a theorem that unifies, U, all the foregoing portions of the theorem's description.

N: (12) So that no two can be classed in N since these words negates, N, the notion that two adjacent regions would have to have the same color if one were limited to just four colors in painting the map.

D': (13) Adjacent regions have the same color can be classed in D' since these words can be regarded as referring to the painting of such adjacent regions as involving subordinate drives, D', since the failure to make two adjacent regions have different colors would represent an inadequate drive for creating a map within the constraints of this theorem. Up until 1976 this theorem would have been called a mere conjecture, like Goldbach's conjecture.

Godel's Incompleteness Theorem

Merriam-Webster's Collegiate Dictionary, 11th edition, defines "Godel's theorem (which it spells without the German umlaut over the "o") as follows (numberings added for purposes of later analysis here): "(1) Godel's theorem \gō-dəlz, gər-, gœ-\ *n* [Kurt *Gödel* (1906-1978) American (Austrian-born) mathematician] (1933) a theorem in advanced logic: (2) in any logical system as complex as or more complex than the arithmetic of the integers (3) there (4) can (5) always (6) be found (7) either (8) a statement (9) which can be shown to be (10) both true and false (7') or (11) a statement whose truth or falsity (12) cannot be deduced (13) from other statements in the system—called also Godel's incompleteness theorem."

Suggested classification:

D: (3) There

DA: (4) Can

A: (5) Always

AG: (6) Be found

G: (8) A statement

GQ: (9) Which can be shown to be

Q: (10) Both true and false

QD: (7) Either…or

DG: (2) In any logical system as complex as or more complex than the arithmetic of the integers

AQ: (11) Or a statement whose truth or falsity

U: (1) Godel's (incompleteness) theorem

N: (12) Cannot be deduced

D': (13) From other statements in the system

My justifications for the foregoing classifications:

D: (3) There can be classed in D since this word can be construed as meaning “one notices that there,” where “one” refers to an agent or drive-bearer, D, who does the noticing.

DA: (4) Can can be classed in DA since in the expression “there can always” the word “can” links the drive word “there,” D, and the anticipatory word “always,” A.

A: (5) Always can be classed in A since the word leads one to anticipate, A, that what is proposed next never fails to hold true.

AG: (6) Be found can be classed in AG since in the expression “always be found a statement” the words “be found” link the anticipatory word “always,” A, and the goal-object words “a statement,” G.

G: (8) A statement can be classed in G since such a statement can be regarded as a goal object, G.

GQ: (9) Which can be shown to be can be classed in GQ since in the expression “a statement which can be shown to be both true and false” the words “which can be shown to be” link the goal-object words “a statement,” G, and the quiescent words “both true and false,” Q.

Q: (10) Both true and false can be classed in Q since these words describe a an observable intellectual quiescent manifestation, Q, analogous to saying that a rubber ball can be shown to be “both black and white,” where being “both black and white” is an observable visible quiescent manifestation, Q.

QD: (7) Either…or can be classed in QD since these words serve as conjunctions which link the quiescent manifestation, Q, of one statement’s truth or falsity in arithmetic, and the drive, D, to add an alternative assertion about the truth or falsity of a statement in arithmetic.

DG: (2) In any logical system as complex as or more complex than the arithmetic of the integers can be classed in DG since these words refer to a logical system as a goal object, G, concerning which one can exert the drive, D, to establish that it has the requisite complexity.

AQ: (11) Or a statement whose truth or falsity can be classed in AQ since here the “statement” is an anticipation, A, while its “truth or falsity” is a quiescent manifestation, Q.

U: (1) Godel’s (incompleteness) theorem can be classed in U since these words refer to a unified conception, U, of what is possible regarding the truth or falsity of statements in arithmetic.

N: (12) Cannot be deduced can be classed in N since these words refer to a negation, N, of what can be deduced.

D': (13) From other statements in the system can be classed in D' since these words can be regarded as referring to those other statements as subordinate agents or drive-bearers, D', subordinate because their status as axioms for the system from which all other true statements supposedly can be deduced is dubious and "drive-bearers" because one is expected to exert the drive to think of it as a basic truth or axiom of the system from which all other truths in the system can be deduced.

The system is "incomplete' in the sense that one can always add any statement whose truth or falsity cannot be deduced from the axioms of the system to the list of axioms, but this list would grow infinitely large, showing that one can never attain a list of axioms sufficient complete to be used to deduce the truth or falsity of every conceivable statement in the system. Somewhere in the 1967 *Encyclopedia of Philosophy* edited by Paul Edwards it is mentioned that a logician named Gerhard Gentzen showed that if one could have a set of axioms greater than aleph-null in size (the set of natural numbers), then the axioms would be complete enough to prove the truth or falsity of any statement in arithmetic, but as of 1967 no one seemed to know what such a huge set of axioms would look like. I will have to leave this problem to professional logicians to deal with, since it would be too time-consuming to delve into further here.

Goldbach's Conjecture

The Wikipedia article on Goldbach's conjecture, which was proposed by Christian Golabach to the famous mathematician Leonhard Euler in a letter dated June 7, 1742. The conjecture had various interpretations that the Wikipedia article goes through in agonizing detail, but at the beginning of the article the conjecture is presented in a crystal-clear form as follows (numberings added): "(1) Goldbach's conjecture: (2) every (3) even (4) whole (5) number (6) greater than (7) 2 (8) is (9) the sum (10) of (11) two (12) prime (13) numbers." A prime number, as every school child knows, is any integer (whole number) that is evenly divisible (i.e., divisible without any remainder) by itself or 1. An example would be the even number 8, which is the sum of the prime numbers 3 and 5. This conjecture has been checked by computer for every even number up to 4×10^{18} (i.e., up to 4,000,000,000,000,000,000, i.e. 4 quintillion). But a mathematical proof of this conjecture for all even numbers has not been found. My suggested classification of the words of the conjecture as given by Wikipedia is as follows:

DA; (2) Every

A: (3) Even

AG: (4) Whole

G: (5) Number

GQ: (8) Is

Q: (9) The sum

QD: (10) Of

D: (11) Two

DG: (13) Numbers

AQ: (12) Prime

U: (1) Goldbach's conjecture

N: (6) Greater than

D': (7) 2

My justifications of these classifications are as follows:

DA: (2) Every can be classed in DA since if we formulate this as meaning “we as agents or drive-bearers, D, can legitimately anticipate, A, that every even number of the type described is covered by this conjecture.

A: (3) Even can be classed in A since what is even is anticipated, A, to be evenly divisible by 2, meaning there is no remainder after such a division.

AG: (4) Whole can be classed in AG since in the expression “even whole number” the word “whole” links the anticipatory word “even,” A, and the goal-object word “number,” G.

G: (5) Number can be classed in G since a number can be regarded as g mathematical goal object, G.

GQ: (8) Is can be classed in GQ since in the expression “number is the sum” the word “is” links the goal-object word “number,” G, and the quiescent word “sum,” Q.

Q: (9) Sum can be classed in Q since a sum is the quiescent outcome or satisfaction, Q, of the addition described.

QD: (10) Of can be classed in QD since in the expression “sum of two” can be classed in QD since “is” links the quiescent word “sum,” Q, and the drive word “two,” D.

D: (11) Two can be classed in D since this word puts in place the drive, D, to add two numbers of the type described, namely that the two numbers are each prime numbers.

DG: (13) Numbers can be classed in DG since a number is a goal object, G, that is connected to the drive, D, to add just two of the numbers in question, namely prime numbers.

AQ: (12) Prime can be classed in AQ since this word leads one to anticipate, A, a number that has the quiescent manifestation, Q, of being evenly divisible only by itself or 1.

U: (1) Goldbach’s conjecture can be classed in U since this phrase encompasses or unifies, U, the entire proposal or conjecture that is being made.

N: (6) Greater than can be classed in N since these words negate, N, the notion that the two even whole numbers being added can be less than 3.

D’: (7) 2 can be classed in D’ since this number amounts to a subordinate agent or drive-bearer, D’, since it adds a restriction on the main drive, the restriction being that the even numbers under consideration must exclude the even whole numbers 2, 0, -2, -4, -6, -8, etc., and this restriction amounts to a subordinate drive.

Mathematics, Definition of

Merriam-Webster's Collegiate Dictionary, 11th edition, defines "(1) mathematics" as follows (numberings added for purposes of subsequent analysis): "(2) the science of (3) numbers and (4) their operations, (5) interrelations, (6) combinations, (7) generalizations, and (8) abstractions and of (9) space configurations and their (10) structure, (11) measurement, (12) transformations, and (13) generalizations."

Suggested classification:

D: (3) Numbers

DA: (4) Operations

A: (5) Interrelations

AG: (6) Combinations

G: (9) Space configurations

GQ: (13) Generalizations (for space configurations)

Q: (7) Generalizations (for numbers)

QD: (8) Abstractions

DG: (10) Structure

AQ: (11) Measurement

U: (1) Mathematics

N: (12) Transformations

D': (2) The science

My justifications for the foregoing classifications are as follows:

D: (3) Numbers can be classed in D since they typically are derived from the natural numbers 1, 2, 3, etc., which themselves exhibit a sort of drive, D, to proceed consecutively through these numbers.

DA: (4) Operations can be classed in DA since operations are performed on numbers as drives, D, in anticipation, A, of yielding other numbers, as by the various arithmetical operations addition, subtraction, multiplication, and division.

A: (5) Interrelationships can be classed in A since these enable one to anticipate, A, numbers by virtue of their interrelationships with one another, as when we anticipate, A, the number 5 as the successor of the number 4, by virtue of their interrelationship among the natural numbers.

AG: (6) Combinations can be classed in AG as when we anticipate, A, the goal-object number 7 as the answer to the combination of 5 + 2.

G: (9) Space configurations can be classed in G since they amount to goal objects, G, such as circles, squares, triangles, etc.

GQ; (13) Generalizations (for space configurations) can be classed in GQ since these generalizations amount to quiescent manifestations, Q, pertaining to space configurations as goal objects, G, as when we say the area of a circle is always anticipated, A, to be the quiescent outcome πr^2.

Q: (7) Generalizations (for numbers) can be classed in Q since when we say that for every prime number there is a higher prime number (a prime number being defined as a number evenly divisible only by itself and 1.

QD: (8) Abstraction can be classed in QD since “to abstract” is defined in *Merriam-Webster’s Collegiate Dictionary*, 11th edition, as “to consider apart from application to or association with a particular instance” and we can say that a mathematical theorem such as the Pythagorean Theorem is typically arrived at by seeing that it holds in many particular instances and hence should hold in every instance, although this is not necessarily true and hence a proof is required to assure us of the truth of the theorem. So the quiescent manifestation, Q, of seeing that the Pythagorean Theorem holds in many instances leads to the drive, D, to try to prove that it should hold in every instance, even though one cannot examine all of the infinite number of instances to which it would pertain, hence its being ab-stracted from a need to examine every instance, which would be impossible.

DG: (10) Structure can be classed in DG since one can see the structure of something, such as the Eiffel Tower, by looking at it from a distance, where the Eiffel Tower is a goal object, G, while looking at it would involve a drive, D, to look at it.

AQ: (11) Measurement can be classed in AQ since a measurement, as of a person's waist, enables one to anticipate, A, what length a belt, say, as quiescent manifestation, Q, would be needed to fit the person in question.

U: (1) Mathematics can be classed in U since this word encompasses or unifies, U, all the foregoing portions of the definition of mathematics.

N: (12) Transformations can be classed in N since, for example, when the shape of a person is distorted by a curved mirror, the image in the mirror would be transformed or changed from what it normally looks like when the mirror is not curved, the transformation thus being at least a partial negation, N, of the normal look.

D': (2) The science can be classed in D' since mathematics is just one of many sciences and hence a subordinate agent or drive-bearer, D', compared to all the rest, since a science involves a drive to investigate the subject matter of that science, and it is subordinate by virtue of not providing us with all the answers we might desire to have to our questions about reality. A more radical example would be the transformation of a speaking human face to a speaking animal face using CGE technology (computer-generated imaging), where virtually the entire human face would be negated except for the simulation of human speech.

Pythagorean Theorem

Merriam-Webster's Collegiate Dictionary, 11th edition, defines the Pythagorean theorem as follows (numberings added for purposes of later analysis): "(1) Pythagorean theorem *n* (1743): a theorem in geometry: (2) the square (3) of (4) the length (5) of (6) the hypotenuse (7) of (8) a right triangle (9) equals (10) the sum (11) of the squares of the lengths (12) of the other (13) two sides."

Suggested classification:

D: (2) The square

DA: (3) Of

A: (4) The length

AG: (5) Of

G: (6) The hypotenuse

GQ: (7) Of

Q: (8) A right triangle

QD: (9) Equals

DG: (10) The sum

AQ: (11) Of the squares

U: (1) Pythagorean theorem

N: (12) Of the other

D': (13) Two sides

My justifications of these classifications:

D: (2) The square can be classed in D since to square something indicates a drive, D, to square something (i.e., multiply it by itself).

DA: (3) Of can be classed in DA since in the expression "the square of the length" the word "of" links the drive words "the square," D, and the anticipatory words "the length," A.

A: (4) The length can be classed in A since these words indicate the quan-tity that one is anticipated, A, to square.

AG: (5) Of can be classed in AG since in the expression "the length of the hypotenuse" the word "of" links the anticipatory words "the lngth," A, and the goal-object words "the hypotenuse," G.

G: (6) The hypotenuse can be classed in G since this side of a right triangle can be regarded as a goal object, G.

GQ: (7) Of can be classed in GQ since in the expression "the hypotenuse of a right triangle" the word "of" links the goal-object words "the hypotenuse," G, and the quiescent words "a right triangle," Q.

Q: (8) A right triangle can be classed in Q since the words refer to the obser-vable quiescent manifestation, Q, of a right triangle, i.e., a triangle one angle of which is a 90-degree angle.

QD: (9) Equals can be classed in QD since in the expression "x equals y" the word "equals" links the quiescent manifestation, Q, of the quantity x, while the con-firmation of its equality with y involves a drive, D, to confirm such an equality.

DG: (10) The sum of the squares can be classed in DG since "the sum" involves a drive, D, to add quantities up to yield a sum, while "the squares" refers to the goal objects, G, that this sum is a drive to add up, while the word "of" links this drive with this pair of goal objects.

AQ: (11) Of the lengths can be classed in AQ since in the expression "(the squares) of the lengths" the lengths in question are anticipated, A, to be squared (i.;e., multiplied by themselves) while the result of squaring these two lengths is a quiescent manifestation, Q.

U: (1) The Pythagorean theorem… can be classed in U since these words unify, U, the foregoing parts of the theorem.

N: (12) Of the other can be classed in N since these words negate, N, the notion that the length of the hypotenuse is one of the two sides to be squared.

D': (13) Two sides can be classed in D' since these other two sides amount to subordinate agents or drive-bearers, D', "subordinate" to the hypotenuse, and "drive-bearers" by virtue of involving the drive to square them and add them together.

Zermelo's Axioms for Set Theory

In the late 1800s mathematicians tried to develop set theory as a basis for mathematics, but certain paradoxes for set theory were discovered. In 1908 Ernst Zermelo devised a set of seven axioms for set theory that were thought to evade the paradoxes. An eighth axiom was added in 1921 and 1922 by Fraenkel and Skolem, respectively, working independently, and a ninth axiom was added by John von Neumann in 1925. These axioms are spelled out in the article "Set theory" in *The Encyclopedia of Philosophy* (vol. 7, pp. 424-425). The numberings of the axioms are those given in the *EoP*, while the names for them are taken from the article "set theory" in *The Cambridge Dictionary of Philosophy* (pp. 837-838). The wordings for Axioms 1 through 6 are taken from the *EoP*, while (for the sake of greater clarity) the wordings for Axioms 7 through 9 are taken from the *CDP.* The symbol ø stands for the null or empty set, and ε stands for "is a member of the set."

> Axiom 1, the Axiom of Extensionality: "Two sets are equal if they contain the same members."
>
> Axiom 2, the Axiom of Pairing: "For any two different objects (sets) *a, b*, there exists the set {*a,b*} which contains just *a* and *b.*"
>
> Axiom 3, the Axiom of Separation: "For a set *s* and a "definite" predicate P, there exists the set s_p which contains just those *x* ε *s* which satisfies P."
>
> Axiom 4, the Axiom of Union: "For any set *s* there exists the union of the members of *s*—that is, the set containing just the members of the members of *s.*"
>
> Axiom 5, the Power Set Axiom: "For any set *s*, there exists the power set of *s*—that is, the set whose members are just the subsets of *s.*"
>
> Axiom 6, the Axiom of Infinity: "There exists the set Z with the properties (*a*) ø ε Z, and (*b*) if *x* ε Z, then {x} ε Z."
>
> Axiom 7, the Axiom of Choice: "For any set of non-empty sets, there is a set that contains exactly one member from each."
>
> Axiom 8, the Axiom of Replacement: "If *A* is a set, and every member *a* of *A* is replaced by some *b,* then there is a set containing all the *b*'s."
>
> Axiom 9, the Axiom of Foundation: "which guarantees that sets are formed in a series of stages called the *iterative hierarchy* (begin with some non-sets, then form all possible sets of these, then form all possible sets of the things formed so far, then form all possible sets of these, and so on)."

The author of the *Encyclopedia of Philosophy* article “Set Theory,” Abraham A. Fraenkel, who himself contributed one of the axioms, just prior to his summary of the axioms mentions that “the membership relation e serves as the primitive concept of the system, possibly in combination with equality” (vol. 7, p. 424). Taking a clue from my analysis of Peano’s axioms, I will assume that the nodes D, A, G, and Q are occupied by the primitive ideas ø (the null or empty set, analogous to 0, zero, in Peano’s axioms), e (the membership relation, analogous to the successor relation for Peano’s axioms, ‘), { } (a set, analogous to number for Peano’s axioms), and R (or P) (relation, analogous to the primitive idea of property for Peano’s axioms, with P, a predicate, being used to designate a “one-term relation,” and R generally employed for two or more terms in a relation). What Fraenkel calls “equality,” = , would amount to a kind of two-term relation, along with < , for the left-hand term being “less than” the right-hand term, and > , for the left-hand term being “greater than” the right-hand term. I would suggest the following classification for each of the four primitive ideas and the dominant role or position for each of the nine axioms as follows:

D: ø, the null or empty set

DA: Axiom 7, the Axiom of Choice

A: e, the membership relation

AG: Axiom 1, the Axiom of Extensionality

G: { }, a set

GQ: Axiom 3, the Axiom of Separation

Q: P, a predicate

QD: Axiom 9, the Axiom of Foundation

DG: Axiom 8, the Axiom of Replacement

AQ: Axiom 2, the Axiom of Pairing

U: Axiom 4, the Axiom of Union

N: Axiom 5, the Power Set Axiom

D’: Axiom 6, the Axiom of Infinity

D: ø, the null or empty set, can be classed in D because, as with 0 in Peanao's axioms, it provides a starting point for the natural numbers, like the first domino in a row of falling dominoes. In the Axiom of Infinity it is correlated with the number 1, while {0} is correlated with the number 2, {{0}} correlates with the number 3, {{{0}}} correlates with the number 4, etc.

DA: Axiom 7, the Axiom of Choice, can be classed in DA because to choose a member from each non-empty set is like an agent or drive-bearer, D, choosing a tool such as a weapon in anticipation, A, of accomplishing something with it, e.g., warding off trouble.

A: e, the membership relation, can be classed in A since, e.g., x e S means we can anticipate, A, that x is a member or element of set S.

AG: Axiom 1, the Axiom of Extensionality, can be classed in AG because it links the concept of being a member of, which we just classified in A, with the concept of a set, which we will classify in G below, namely by indicating that having the same members means we can anticipate, A, that two sets as goal objects, G, are equal to one another.

G: { }, a set, can be classed in G since sets are the principal goal objects of set theory.

GQ: Axiom 3, the Axiom of Separation, can be classed in GQ because it links the concept of a set, which we classed in G, with the concept of a predicate P, which we can classify in Q since it holds that those members of the set that "satisfy" the predicate can be formed into a set of their own, where satisfaction is a quiescent concept, Q, as when water satisfies thirst for food satisfies hunger.

Q: P, a predicate, can be classed in Q since predicates "has fewer members than" provide quiescent information, Q, about the sets related to one another by the predicate.

QD: Axiom 9, the Axiom of Foundation, can be classed in QD because forming sets in iterative hierarchies involves a renewed drive, D, to construct the next hierarchy once the past one has reached a quiescent completion, Q.

DG: Axiom 8, the Axiom of Replacement, can be classed in DG since it involves constructing a new goal object, G, by replacing each of that set's members by another object, a task that is done by an agent or drive-bearer, D, in accordance with some desideratum or other, as when one switches from food goal objects to drink goal objects when the drive shifts from hunger to thirst.

AQ: Axiom 2, the Axiom of Pairing, can be classed in AQ because it refers to two "different" objects or sets such that there "exists" a set containing only the two of them, where being "different" seems to require a comparison to quiescently satisfy, Q, the claim that they are different, while the assertion that there "exists" a set with just these two different objects as members seems to amount to an anticipation, A., that we can invariably rely on.

U: Axiom 4, the Axiom of Union, can be classed in U because it unifies into a single coherent set all the elements of two diverse sets, just as we would like to consider the task of going

around the cybernetic loop from D to A to G to Q to D again as a coherent task that can be fused into a meaningful whole.

N: Axiom 5, the Power Set Axiom, can be classed in N because it requires us to analyze a set into each of its fragments or "subsets," if only temporarily, in order to unify those fragments into a power set.

D': Axiom 6, the Axiom of Infinity, can be classed in D' because it enables us to construct the sequence of sets 0, {0}, {{0}}, {{{0}}}, etc., that amount to an infinite set that can be correlated with the infinite set of natural numbers 1, 2, 3, etc. We can construe each successive member of this sequence as like a next generation, a subordinate agent or drive-bearer, D', in relation to the prior parent generation.

The Metaphysics of Physics: A Categorical Analysis

Ronald K. Hoeflin

Contents

1. Introduction

This paper is "metaphysical" by virtue of deriving its categories from Stephen Pepper's 1967 book *Concept and Quality*, in which he proposed a new metaphysical system he called "selectivism" based on the core idea of a selective system, or more concretely a purposive act, which he says is "the act associated with intelligence" (p. 17). It is associated with intelligence because we exercise our intelligence by means of the feedback loops that a purposive act consists of: we act on the world and it feeds back its reaction to us so that we can learn what actions lead to the satisfaction of our aims and which do not.

Pepper had just four categories for selectivism (*CQ*, p. 22): drives, D; anticipatory sets, A; goal objects, G (Pepper labeled these O, but I felt that this designation is too easily confused with the number 0), and quiescence, Q. In the search for food, for example, the search begins with a hunger drive, D, leads into anticipations, A, for what food one wants and how to obtain it; food items as goal objects, G; and the quiescence of the search for food in the quiescent satisfaction, Q, of one's hunger, or quiescent dis-satisfaction, if the search ended in failure. The feedback loop can be repeated many times in the search for complete satisfaction, as in the many bites of a meal to end the hunger drive.

We can elaborate Pepper's system to create thirteen categories as follows: Draw a circle to represent a feedback loop; inscribe a square in the circle to represent the four main categories at the points there the corners of the square hit the circle; link the four main categories into six binary groupings, namely the four peripheral connections, DA, AG, GQ, and QD, and the two linkages across the center of the circle or square, DG and AQ; these four binary connections plus the four primary categories give us ten niches for our categories so far; the circle or square provides a successful unification, U, of these internal categories, where U stands for an eleventh category; a failure to reach one's goal would amount to a negation, N, of the successful loop, a twelfth category; and when one completes a loop and must decide on whether to repeat it or to launch a new drive, there is a thirteenth category, a subordinate drive, D', analogous to a student's relationship to its teacher or a child's to its parents. With these thirteen categories we can analyze a remarkable range of items—in the present case fundamental aspects of physics.

2. Newton's Laws of Motion

Isaac Newton (1642-1727) listed three laws of motion in his *Principia (*Vol. I, p. 13, University of California Press ed., 1962). They as follows (numberings in parentheses added here for subsequent analytical purposes):

Axioms, or

(1) Laws of Motion

> Law I: (2) Every (3) object (4) continue (5) in its (6) state (7) of rest (8) or (5') state (9) of motion in a right line, (8') unless (10) it is compelled to change that state by forces impressed upon it.
>
> Law II: (11) The change of motion is proportional to the motive force impressed, and in the direction of the right line in which that force is impressed.
>
> Law III: To every action there is always opposed an equal reaction; or, (12) the mutual actions of two bodies upon each other (13) are always equal and directed to contrary parts.

Suggested classification:

> Law I:
>
> A: (4) Continues
>
> AG: (2) Every
>
> G: (3) Object
>
> GQ: (5) In its
>
> Q: (6) State
>
> QD: (8) Or; unless
>
> D: (10) It is compelled to change that state by forces impressed upon it
>
> DG: (7) Of rest
>
> AQ: (9) Of motion in a right line

Law II:

DA: (11) The change of motion is proportional to the motive force impressed, and in the direction of the right line in which the force is impressed.

Main heading:

U: (1) Laws of Motion

Law III:

N: (13) Always equal and directed to contrary parts

D': (12) The mutual actions of two bodies upon each other

My justifications for the foregoing classifications:

Law I:

D: (4) Continues can be classed in A since what continues is anticipated, A, to maintain whatever aspects of motion are said to continue.

AG: (2) Every can be classed in AG since this word leads one to anticipate, A, that the objects that are mentioned next always have the properties that are subsequently imputed to them.

G: (3) Object can be classed in G since a physical object such as a cannonball amounts to what we call a goal object, G.

GQ: (5) In its can be classed in GQ since "its" refers to the object as goal object, G, while what it "continues in" is its "state" as quiescent manifesta-tion, Q, namey of rest or of motion.

Q: (6) State can be classed in Q since the state of an object, such as its being at rest or in motion, is an observable quiescent manifestation, Q.

QD: (8) Or; unless can be classed in QD since "or" links the quiescent manifestation, Q, of the stats of being at rest, followed by the drive, D, to mention an alternative steady state, namely uniform motion in a given direction; and "unless" links the first part of Law I, specifying as a quiescent manifestation, Q, that the object remains in its state of rest or motion, to the final part of Law I, specifying as a drive, D, that a force may change the object's steady state of rest or motion so that it accelerates in a straight line or changes direction.

D: (10) It is compelled to change that state by forces impressed upon it can be classed in D since such compulsion and such forces amount to a drive factor, D.

DG: (7) Of rest can be classed in DG since what is at rest is a goal object, G, that an agent or drive-bearer, D, can gaze at without moving the direction of his gaze or seeing the object diminish or increase in apparent size.

AQ: (9) Of motion in a right line can be classed in AQ since steady motion in a straight line would enable one to see the quiescent manifestation, Q, of the steady motion of an object in one direction without anticipating, A, any change in the direction of that motion or in its speed along the straight line.

Law II:

DA: (11) The change of motion is proportional to the motive force impressed, and in the direction of the line in which the force is impressed can be classed in DA since "motive force" amounts to a drive factor, D, while the motion's being proportional and in the given direction enable one to anticipate, A, where the object will be after a given amount of time.

Main heading:

U: (1) Laws of motion can be classed in U since these words encompass or unify, U, all the aspects of these laws mentioned under this heading.

Law III:

N: (13) Always equal and directed to contrary parts can be classed in N since "contrary parts" implies a negation, N, in the direction and speed of one of the two bodies' motion in relation to the other body's direction and speed.

D': (12) The mutual actions of two bodies upon each other can be classed in D' since each body serves as a subordinate agent or drive-bearer, D', in relation to the other, each body having a drive by virtue of its inertia or tendency to move at a uniform speed in a given direction or to remain at rest, and each body being subordinate to the other by virtue of moving in an equal but opposite direction.

3. Olbers' Paradox

This paradox was named for the German astronomer who formulated it, Heinrich Wilhelm Olbers (1758-1840). Wikipedia describes the paradox as follows (numberings given in parentheses added her for subsequent analytical purposes): "(1) Olbers' paradox…(2) the argument (3) that (4) the darkness (5) of (6) the night sky (7) conflicts with (8) THE assumption of (9) an infinite (10) and (11) eternal (12) static (13) universe," due to the fact that every line of sight would end in the surface of a star, which would make the night sky look as bright as the surface of our sun.

Suggested classification:

D: (2) The argument

DA: (3) That

A: (4) The darkness

AG: (5) Of

G: (6) The night sky

GQ: (7) Conflicts with

Q: (8) The assumption of

QD: (10) And

DG: (9) An infinite

AQ: (11) Eternal

U: (1) Olbers' paradox

N: (12) Static

D': (13) Universe

My justifications for these classifications:

D: (2) The argument can be classed in D since an argument involves a drive, D, to put forward a point of view favoring that argument.

DA: (3) That can be classed in DA since in the expression "the argument that the darkness" the word "that" links the drive words "the argument," D, and the anticipatory words "the darkness," A.

A: (4) The darkness can be classed in A since this fact leads one to antici-pate, A, that the universe is not uniformly filled with stars to an infinite distance and past time.

AG: (5) Of can be cassed in AG since in the expression "the darkness of the night sky" the word "of" links the anticipatory words "the darkness," A, and the goal-object words "the night sky," G.

G: (6) The night sky can be classed in G since the night sky is filled with stars as its typical goal objects, G. (Even if there were intervening non-stellar objects such as planets, over an infinite time they would heat up to the brightness of a star.)

GQ: (7) Conflicts with can be classed in GQ since in the expression "the night sky conflicts with the assumption of" the words "conflicts with" link the goal-object words "the night sky," G, and the quiescent words "the assumption of," Q.

Q: (8) The assumption can be classed in Q since such an assumption leads to the imagining of the quiescent manifestation, Q, of stars so numerous and distributed so far both in space and time that they would make the sky entirely bright rather than dark.

QD: (10) And can be classed in QD since this word links the quiescent mani-festation, Q, of a preceding word or words, followed by the drive, D, to add some subsequent word or words.

DG: (9) An infinite can be classed in DG since what is infinite in space would invlve an agent or drive-bearer, D, looking at a stelar goal object, G, no matter how far in space and time it might be.

AQ: (11) Eternal can be classed in AQ since what is eternal is anticipated, A, to have presented its quiescent manifestation, Q, at some time in the past, no matter how far in the past.

U: (1) Olbers' paradox can be classed in U since these words embrace the unity, U, of this paradox in all the foregoing facets.

N: (12) Static can be classed in N since this word expresses the negation, N, of being in motion.

D': (13) Universe can be classed in D' since this universe, described as infinite, eternal, and static, is purely hypothetical and hence might not be real, hence a subordinate agent or drive-bearer, D', subordinate by virtue of being just one of many other hypothetical universes, and drive-like by virtue of revealing its nature in conformity with the assumptions Olbers has made on its behalf.

4. Einstein's Theory of Relativity

Albert Einstein (1880-1955) devised a special theory of relativity (1905) and expanded it to a general theory of relativity (1915), which are defined in *Merriam-Webster's Collegiate Dictionary,* 11th ed. (2003, 2009), as follows (numberings in brackets added here for subsequent analytical purposes): "[1] relativity…a theory which is based on the two postulates (1) that [2] the speed of light [3] in [4] a vacuum [5] is [6] constant and [7] independent of the source or observer and (2) that [8] the mathematical forms of the laws [9] of physics [10] are invariant in all inertial systems and which leads to the assertion of [11] the equivalence of mass and energy and of [12] change in mass, dimension, and time with increased velocity – called also special relativity, special theory of relativity; [13] an extension of this theory to include gravitation and other acceleration phenomena - called also general relativity, general theory of relativity."

Suggested classification:

Special Theory of Relativity:

A: (2) Speed of light

AG: (3) In

G: (4) A vacuum

GQ: (5) Is

Q: (6) Constant

QD: (8) The mathematical forms of the laws

D: (9) Of physics

DA: (10) Are invariant in all inertial systems

DG: (11) The equivalence of mass and energy

AQ: (12) Change in mass, dimension, and time with increased velocity

U: (1) Relativity

N: (7) [The velocity of light is] independent of source or observer

General Theory of Relativity:

D': (13) Extension of this theory to gravitation and other acceleration phenomena

My justifications of these classifications:

Special Theory of Relativity:

A: (2) The speed of light can be classed in A since this speed is anticipated to be always the same in a vacuum.

AG: (3) In can be classed in AG since in the expression "the speed of light in a vacuum" the word "in" links the anticipatory words "the speed of light," A, and the goal-object words "a vacuum," G.

G: (4) A vacuum can be classed in G since a vacuum can be regarded as a goal object, G. (Perhaps nowadays we would substitute the word "along the superstrings" for "in a vacuum," so that "superstrings would be the actual goal objects that Einstein had no inkling of.)

GQ: (5) Is can be classed in GQ since in the expression "a vacuum is constant" the word "is" links the goal-object words "a vacuum," G, and the quiescent word "constant," Q.

Q: (6) Constant can be classed in Q since to be constant can be regarded as an observable quiescent manifestation, Q.

QD: (8) The mathematical forms of the laws can be classed in QD since "forms" can be regarded as quiescent manifestations, Q, while "laws" can be regarded as akin to drives, since a law can be regarded as what the universe has a drive, D, for its components to conform to.

D: (9) Of physics can be classed in D since physics is what physicists investigate, and physicists are agents or drive-bearers with a drive, D, to investigate physical phenomena.

DA: (10) Are invariant in all inertia systems can be classed in DA since what is "invariant" is anticipated, A, not to change, while an "inertial system" can be regarded as having a drive, D, to maintain its inertial status, in particular a steady velocity.

DG: (11) The equivalence of mass and energy can be classed in DG since "energy" is what energizes drives, D, while "mass" is a primary characteristic of physical goal objects, G.

AQ: (12) Change in mass, dimension, and time with increased velocity can be classed in AQ since these words lead one to anticipate, A, the quiescent manifestation, Q, of these changes in mass, dimension, and time. (Mass increases, length in the direction of movement decreases, and time "dilates" with increasing speed—dilates so that at the speed of light time stands still. In one of his books Isaac Asimov says that if one could maintain an acceleration equivalent to one g (as if one were standing on the surface of the Earth) halfway to the Andromeda Galaxy and a deceleration of one g on the second half of the journey, one could reach the Andromeda Galaxy in just 28 years of subjective time for the passengers, and upon returning to Earth after 56 years of subjective time, 4 million years would have elapsed on Earth. Atomic clocks were put on

board capsules that astronauts used to circle the Earth at 18,000 miles per hour and upon their return to Earth after several circumnavigations the clocks showed that the astronauts were a few ten-thousandths of a second younger than they would have been if they had remained on Earth. Also, it is known that cosmic rays would disintegrate before reaching the surface of the Earth, except for the Einsteinian time dilation effect that enables them to reach the Earth's surface.)

> U: (1) Relativity can be classed in U since it encompasses and unifies, U, all of the foregoing aspects of motion.
>
> N: (7) [The velocity of light is] independent of source and observer can be classed in N since this independence amounts to a negation, N, of its dependence.

(Presumably photons "hitch a ride" on the ambient superstrings that are ubiquitous in a vacuum, which keep it at a steady 186,000 miles (or 299,000 kilometers) per second in a vacuum. Einstein admitted he could never fully understand photons despite a lifetime of studying them.)

General Theory of Relativity:

D': (13) Extension of this theory to gravitation and other acceleration phenomena can be classed in D' since these phenomena amount to additional drive phenomena subordinate, at least intellectually, to the more understandable non-acceleration phenomena. (The physicist Max Planck advised Einstein not to try to figure out these more exotic and difficult phenomena because they were too difficult and it would be hard to convince other physicists that he was right even if he succeeded in devising this more complex theory. But the new theory did successfully explain the changes in the planet Mercury's perihelion, i.e., its closest point to the Sun, as it circled the Sun, which no previous theory had managed to explain. An article about the general theory of relativity in *Scientific America* about 50 years ago compared about 17 different general theories of relativity that various scientists had devised by that time, including one by Kurt Gödel, the famous logician, and found that only two of them were still viable, logically and empirically, one of which was Einstein's.)

5. Heisnberg's Uncertainty Principle

Werner Heisenberg (1901-1976) proposed his uncertainty principle in a paper published in 1927. I found the summary of this principle given by Wikipedia more amenable to a clear analysis than the definition of "uncertainty principle" in *Merriam-Webster's Collegiate Dictionary,* 11th edition. The Wikipedia summary in its opening paragraph reads as follows (numberings added for subsequent analytical purposes): "In quantum mechanics, (1) the uncertainty principle (also known as Heisenberg's uncertainty principle) is (2) any of a variety of mathematical inequalities (3) asserting (4) a fundamental (5) limit (6) to (7) the accuracy with which the values for certain pairs of physical quantities of a particle, such as (8) position, x, (9) and (10) momentum, p, (11) can be (12) predicted (13) from initial conditions."

Suggested classification:

A: (3) Asserting

AG: (4) A fundamental

G: (5) Limit

GQ: (6) To

Q: (7) The accuracy with which the values for certain pairs of quantities of a particle, such as

QD: (9) And

DG: (8) Position, x

AQ: (10) momentum, p

D: (11) Can be

DA: (12) Predicted

U: (1) Uncertainty principle

N: (2) Any of a variety of mathematical inequalities

D':' (13) From initial conditions

My justifications for the foregoing classifications are as follows:

A: (3) Asserting can be classed in A since such an assertion leads one to anticipate, A, that what is asserted can be anticipated, A, to be true.

AG: (4) A fundamental can be classed in AG since in the expression “asserting a fundamental limit” the words “a fundamental” link the anticipatory word “asserting,” A, and the goal-object word “limit,” G.

G: (5) Limit can be classed in G since this limit can be regarded as a goal object, G, the limit involving Planck’s constant, a fundamental constant in quantum mechanics.

GQ: (6) To can be classed in GQ since in the expression “limit to the accu-racy with which” the word “to” links the goal-object expression “limit,” G, and the quiescent expression “accuracy with which,” Q.

Q: (7) The accuracy with which the values for certain pairs of quantities of a particle, such as can be classed in Q since accuracy is an observable quiescent manifestation, Q.

QD: (9) And can be classed in QD since in the expression “position, x, and momentum, p” the word “and” links the quiescent manifestation, Q, of the words “position, x,” and the drive, D, to add the words “momentum, p,”

DG: (8) The position, x can be classed in DG since in pinpointing the position of a particle, an agent or drive-bearer, D, observes the particle as goal object, G, in relation to other surroundings particles.

AQ: (10) Momentum, p can be classed in AQ since the momentum of, say, a particle as it heads toward a target enables one to anticipate, A, the force of the impact on the target as a quiescent manifestation, Q.

D: (11) Can be can be classed in D since these words can be elaborated to read “can by someone be,” where the someone is an agent or drive-bearer, D.

DA: (12) Predicted can be classed in DA since the one who makes such a prediction would be an agent or drive-bearer, D, while what is predicted would be an anticipation, A, of what would happen at a later point in time.

U: (1) Uncertainty principle can be classed in U since these words encom-pass or unify, U, all the foregoing aspects of this concept.

N: (2) Any of a variety of mathematical inequalities can be classed in N since an inequality is the negation, N, of an equality.

D’: (13) From initial conditions can be classed in D’ since these initial con-ditions amount to a subordinate agent or drive-bearer, D’, subordinate by virtue of being just one set of initial conditions versus an infinite variety of other initial conditions, and drive because they govern the relative uncertainty of the position momentum to be jointly measured.

6. Schrödinger's Equation

Erwin Schhrödinger (1887-1961) was an Austrian physicist whose famous equation is defined in *Merriam-Webster's Collegiate Dictionary,* 11th edition, as follows (numberings added for subsequent analytical purposes; the date in parentheses refers to the year when this phrase is said to have entered the English language): "(1) Schhrödinger equation…*n*…(1936): "(2) an equation (3) that (4) describes (5) the wave (6) nature (7) of (8) elementary particles (9) and (10) is fundamental (11) to the description of the properties (12) of all (13) matter."

Suggested classification:

D: (2) An equation

DA: (3) That

A: (4) Describes

AG: (5) The wave

G: (6) Nature

GQ: (7) Of

Q: (8) Elementary particles

QD: (9) And

DG: (10) Is fundamental

AQ: (11) To the description of the properties

U: (1) Schhrödinger equation

N: (12) Of all

D': (13) Matter

My justification of these classifications is as follows:

D: (2) An equation can be classed in D since it is said to “describe” the wave nature of fundamental particles, which puts it in the role of an agent or drive-bearer, D.

DA: (3) That can be classed in DA since in the expression “an equation that describes” the word “that” links the drive words “an equation,” D, and the antici-patory word “describes,” A.

A: (4) Describes can be classed in A since a description enables one to anticipate, A, the appearance of whatever is described.

AG: (5) The wave can be classed in AG since in the expression “describes the wave nature” the word “wave” links the anticipatory word “describes,” A, and the goal-object word “nature,” G.

G: (6) Nature can be classed in G since to have a wave “nature” is to be a wave-like goal object, G.

GQ: (7) Of can be classed in GQ since in the expression “nature of elemen-tary particles” the word “of” links the goal-object word “nature,” G, and the quiesa-cent words “elementary particles,” Q.

Q: (8) Elementary particles can be classed in Q since they manifest themselves as elementary by virtue of their observable quiescent properties, Q.

QD: (9) And can be classed in QD since this word links the quiescent mani-festation, Q, of preceding words, followed by the drive, D, to add subsequent words.

DG: (10) Is fundamental can be classed in DG since to say something is “fun-damental” is to liken it to a foundation, as in the foundation of a house or other building, which is a goal object, G, while “is” expresses the drive, D, to refer people to what one deems to be basic or fundamental.

AQ: (11) To the description of the properties can be classed in AQ since we earlier classed the word “describes” as anticipatory, A, while the “properties” that are here said to be described by the equation amount to quiescent manifestations, Q.

U: (1) Schhrödinger equation can be classed in D since this phrase embodies or unifies, U, all the foregoing components of the definition of this phrase.

N: (12) Of all can be classed in N since these words negate, N, any omissions.

D’: (13) Nature can be classed in D’ since matter can be regarded as the various subordinate agents or drive-bearers, D’, that the various elementary particles amount to, “subordinate” because they are the smallest pieces of matter we know of, and “drive-bearers” because the elementary particles exert drive-like force when they interact with other such particles.

7. Superstrings

In *Merriam-Webster's Collegiate Dictionary,* 11th edition, copyrighted in 2003 and again in 2009, we find the following definition (numberings added for subsequent analysis): "(1) superstring…(1982): (2) a hypothetical (3) string (4) observing (5) the rules (6) of (7) super-symmetry (8) whose (9) vibrations (10) manifest (11) themselves (12) as particles existing in ten dimensions (13) of which only four are evident." In 1995 Edward Witten proposed eleven dimensions (ten spatial and one temporal) in his so-called M-theory as a possible future integration of the five known superstring theories, each with ten dimensions (nine spatial and one temporal), but as of the year 2021 no completely satisfactory M-theory, commonly known as a "theory of everything," has been proposed. According to the Wikipedia article on Witten, "In 1990, he became the first physicist to be awarded a Fields Medal by the International Mathematical Union, awarded for his 1981 proof of the positive energy theorem in general relativity." Usually four Fields Medals are awarded to top mathematicians each four years, an average of one per year, so it is an award analogous to a Nobel Prize, but in mathematics, for which there is no Nobel Prize. So by 1995 Witten was already a famous physicist and mathematician.

Suggested classification:

DA: (4) Observing

A: (5) The rules

AG: (6) Of

G: (7) Supersymmetry

GQ: (8) Whose

Q: (9) Vibrations

QD: (10) Manifest

D: (11) Themselves

DG: (12) As particles existing in ten dimensions

AQ: (13) Of which only four are evident

U: (1) Superstring

N: (2) A hypothetical

D': (3) String

My justifications of these classifications:

DA: (4) Observing can be classed in DA since what observes the rules of supersymmetry are the superstrings as agents or drive-bearers, D, while the rules they observes enable physicists to anticipate, A, various physical phenomena.

A: (5) The rules can be classed in A since rules in physics enable one to anticipate, A, the various physical phenomena.

AG: (6) Of can be classed in AG since in the expression "The rules of super-symmetry" the word "of" links the anticipatory words "the rules," A, and the goal-object word "supersymmetry," G.

G: (7) Supersymmetry can be classed in G since it is said to have vibrations, which puts it in the category of goal objects, G, like superstrings. (The definition of "supersymmetry" is analyzed in the next section this paper.)

GQ: (8) Whose can be classed in GQ since in the expression "supersymmetry whose vibrations" the word "whose" links the goal-object word "supersymmetry," G, and the quiescent word "vibrations," Q.

Q: (9) Vibrations can be classed in Q since vibrations amount to observable quiescent manifestations, Q, analogous to the pitches of notes in music manifesting the vibrations of musical instruments in an auditory fashion.

QD: (10) Manifest can be can be classed in QD since a quiescent property such as vibrations, Q, manifest themselves to onlooking agents or drive-bearers, D. D: (11) Themselves can be classed in D since this word refers to how super-strings reveal themselves to observers as agents or drive-bearers, D, including other superstrings that manifest the effect of other superstrings by the reciprocal alterations in their own vibrations.

DG: (12) As particles existing in ten dimensions can be classed in DG since these particles can be regarded as agents or drive-bearers, D, as they can ush one another around, while the ten (or eleven) dimensions in which they exist can be regarded as goal objects, G, analogous to soup (particles) boiling in a pot (the dimensions).

AQ: (13) Of which only four are evident can be classed in AQ since these four dimensions are the ones we ordinarily observe without the aid of high-powered mathematical model, these ordinary observations or quiescent manifes-tations, Q, taking the form of length, breadth, width, and time in a rectangular coordinate system or latitude, longitude, altitude, and time in a spherical system.

U: (1) Superstrings can be classed in U since this word encompasses or unifies, U, all the other aspects of this definition of superstrings.

N: (2) A hypothetical can be classed in N since this word suggests that the existence of these numerous dimensions is possibly only an unreal projection of the human mind, hence a negation, N, of what is real.

D': (3) String can be classed in D' since a superstring is just one among many other sorts of strings, such as the ball of string that a kitten plays with, and hence can be regarded as a subordinate agent or drive-bearer, D', subordinate due to its existence among numerous other strings, and drive-bearer due to its ability to act on other parts of nature, chiefly other superstrings.

8. Matter

Merriam-Webster's Collegiate Dictionary, 11th edition, defines "matter" in the sense in which physicists use the word as follows (numberings added here for subsequent analytical purposes): "(1) matter…[definition] 2b: (2) material substance (3) that (4) occupies space, (5) has mass, and (6) is composed predominantly (7) of (8) atoms (9) consisting of (10) protons, neutrons and electrons, that (11) constitutes the observable (12) universe, and that (13) is interconvertible with energy."

Suggested classification:

D: (2) Material substance

DA: (3) That

A: (6) Is composed predominantly

AG: (7) Of

G: (8) Atoms

GQ: (9) Consisting of

Q: (10) protons, neutrons, and electrons

QD: (13) Is interconvertible with energy

DG: (4) Occupies space

AQ: (5) Has mass

U: (1) Matter

N: (12) Constitutes the observable

D': (13) Universe

My justifications for these classifications:

D: (2) Material substance can be classed in D since we can think of a material substance as what underlies or "stands under" (sub- = under, -stance = stands) material things, pushing aside non-material things in order to constitute the core of matter, and this pushing aside amounts to a drive character, D.

DA: (3) That can be classed in DA since in the expression "material substance that has such-and-such roles" the word "that" links the drive factor "material substance," D, and the anticipatory factor "has such-and-such roles," A.

A: (6) Is composed predominantly of can be classed in A since these words lead one to anticipate, A, a list of what material substance is composed predominantly of.

AG: (7) Of can be classed in AG since in the expression "is composed predominantly of atoms" the word "of" links the anticipatory words "is composed predominantly," A, and the goal-object word "atoms," G.

G: (8) Atoms can be classed in G since atoms amount to goal objects, G, in physics.

GQ: (9) Consisting of can be classed in GQ since in the expression "atoms consisting of protons, neutrons, and electrons" the words "consisting of" link the goal-object word "atoms," G, and the quiescent words "protons, neutrons, and electrons," Q.

Q: (10) Protons, neutrons, and electrons can be classed in Q since they exhibit the quiescent manifestations, Q, that distinguish these three subatomic particles from one another and from other items in the universe.

QD: (13) Is interchangeable with energy can be classed in QD since energy is what enables a drive factor, D, to push other items around, while what is interchangeable with energy is matter as characterized by its various quiescent manifes-tations, Q, such as occupying space, having mass, etc.

DG: (4) Occupies space can be classed in DG since we can think of the space that matter occupies as a goal object, G, while its occupying that space involves its drive, D, to push other items out of that space in order to occupy it.

AQ; (5) Has mass can be classed in AQ since to have mass leads one to anticipate, A, whatever properties as quiescent manifestations, Q, mass can have, such as gravitational attraction towards itself, or momentum when moving at various speeds.

U: (1) Matter can be classed in U since this is the concept that underlies and unifies, U, all the other defining factors mentioned above.

N: (12) Constitutes the observable can be classed in N since what is "observable" negates, N, what is not observable.

D': (13) Universe can be classed in D' since the observable universe is just a portion of the entire universe and hence can be construed to be a subordinate agent or drive-bearer, D', subordinate by virtue of being just a portion of the universe, and drive-like by pushing other objects around in a drive-like manner.

9. Energy

Merriam-Webster's Collegiate Dictionary, 11th edition, defines "energy" in the sense in which physicists use the word as follows (numberings added here for subsequent analytical purposes), "(1) energy…[definition] 3: (2) a fundamental (3) entity (4) of (5) nature (6) that is transferred between parts of a system (7) in the production of physical change within the system (8) and (9) usu[ally] (10) regarded (11) as (12) the capacity (13) for doing work."

Suggested classification:

AG: (2) A fundamental

G: (3) Entity

GQ: (4) Of

Q: (5) Nature

DG: (6) That is transferred between parts of a system

AQ: (7) In the production of physical change

QD: (8) And

D: (10) Regarded

DA: (9) Usually

A: (11) As

U: (1) Energy

N: (12) The capacity

D': (13) For doing work

My justifications for the forgoing classifications:

AG: (2) A fundamental can be classed in AG since in the expression “a funda-mental entity” the words “a fundamental” lead one to anticipate, A, the goal-object word “entity,” G.

G: (3) Entity can be classed in G since an entity is a thing or goal object, G.

GQ: (4) Of can be classed in GQ since in the expression “entity of nature” the word “of” links the goal-object word “entity,” G,. and the quiescent word “nature,” Q.

Q: (5) Nature can be classed in Q since nature, as in all the starry heavens, is characterized by an observable quiescent manifestation, Q.

DG: (6) That is transferred between parts of a system can be classed in DG since “that is transferred” involves a drive, D, to transfer, while “parts of a system” are goal objects, G.

AQ: (7) In the production of physical change can be classed in AQ since the”production” anticipates, A, the observable quiescent manifestation, Q, of the change.

QD: (8) And can be classed in QD since the quiescent manifestation, Q, of the words that precede it are followed by the drive, D, to add further words.

D: (10) Regarded can be classed in D since to regard something as something involves a drive, D, to do so.

DA: (9) Usually can be classed in DA since in the expression “regarded usually as” the word “usually” links the drive word “regarded,” D, and the anticipa-tory word “as,” A.

A: (11) As can be classed in A since this word leads one to anticipate, A, an explanation of what energy is usually regarded as, in this case the capacity for doing work.

U: (1) Energy can be classed in U since this is the concept that encompasses or unifies, U, all the other portions of this definition.

N: (12) The capacity can be classed in N since a capacity for doing something can be regarded as a preliminary negation, N, of actually doing it, as a gallon container has the capacity for holding a gallon of water because it is empty.

D’: (13) For doing work can be classed in D’ since these words can be regarded as referring to a subordinate agent or drive-bearer, D’, doing work being the drive aspect, while “for” doing work implying that the work has not yet begun and such a prelude to or preparations for doing work is subordinate to actually doing it.

The Metaphysics of Psychiatry: A Categorial Analysis

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Introduction

The categories were developed from the work of American philosopher Stephen C. Pepper (1891-1972), primarily his books *World Hypotheses* (1942) [1]and *Concept and Quality* (1967) [2]. I elaborated his categories from an original 4 (in 1968-1982) to eventually 13 (2006-now). The categories derive from a simple geometrical analysis of the feedback loops by which we become acquainted with reality. The basic 4 categories are labeled D (for a self as agent or drive-bearer), A (for the anticipatory tools and techniques by which we anticipate reality), G (for the things or goal objects of which reality consist), and Q (for the quiescent mani-festations, such as sights, sounds, feelings, etc.) by which the goal objects reveal their natures to us). Six categories consist of these 4 combined in pairs: DA, AG, GQ, QD, DG, and AQ). Finally, there is a category for unifying, U, these basic 10 categories, a category that negates, N, them because they do not yield a success-ful achievement or insight; and a subordinate agent or drive-bearer, D', such as the relation of a pupil to its teacher or of a child to its parent(s). This systemati-zation I have applied to many other fields of inquiry and compiled a 13-volume encyclopedia of categories. These five psychiatric analyses were an afterthought that may be used in an extension of my encyclopedia. Geometrically, one can think of the categories in terms of a square inscribed within a circle, both representing a feedback loop. The square tilted so as to balance on one corner, with D at the top corner, A at the left corner, G at the bottom corner, and Q at the right corner. The sides of the square correspond to DA, AG, GQ, and QD, while DG and AQ as diagonals across the center of the square. U corresponds to the entire circle or square by which the inner 10 categories are integrated; N is the negation of the completion of the loop; and D' is at the top of the square again, but begins a new loop, as if there were a metal spring with many loops. I have applied this structure to over 4,000 examples in my *Encyclopedia of Categories*[3], a Kindle edition of which is available on Amazon.

Asperger's Disorder

The phrase "Asperger's syndrome" is said to have entered the English language in 1989, according to *Merriam-Webster's Collegiate Dictionary,* 11th ed.,[4] where it is defined as "a developmental disorder resembling autism that is characterized by impaired social interaction, by restricted and repetitive behaviors and activities, and by normal language and cognitive development—called also *Asperger's disorder"*.

The following criteria for this disorder are listed as follows in the DSM IV (*Diagnostic and Statistical Manual of Mental Disorders,* 4th ed., 1994, p. 77, with numberings in brackets added here)[5]:

[1] Diagnostic criteria for 299.80 Asperger's Disorder

A. Qualitative impairment in social interaction, as manifested by at least two of the following:

[2] (1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction

[3] (2) failure to develop peer relationships appropriate to developmental level

[4] (3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)

[5] (4) lack of social or emotional reciprocity

B. Restricted repetitive or stereotyped patterns of behavior, interest, and activities, as manifested by at least one of the following:

[6] (1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus

[7] (2) apparently inflexible adherence to specific, nonfunctional

routines or rituals

[8] (3) stereotyped and repetitive mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

[9] (4) persistent preoccupation with parts of objects

[10] C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

[11] D. There is no clinically significant delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).

[12] E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social development), and curiosity about the environment in childhood.

[13] F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

Suggested classification:

D: (6) Restricted or abnormal patterns of interest

DA: (11) No delay in language development

A: (12) No delay in cognitive development

AG: (2) Impaired nonverbal behaviors such as poor eye-to-eye contact

G: (9) Preoccupation with parts of objects

GQ: (8) Odd mannerisms, as of fingers, hands, or the whole body

Q: (4) Lack of sharing of enjoyments, interests, or achievements

QD: (7) Apparently nonfunctional routines or rituals

DG: (10) Impaired social, occupational, or other important areas or functioning

AQ: (5) Lack of social or emotional reciprocity

U: (1) Asperger's syndrome in general

N: (13) Lack of criteria matching other pervasive developmental disorders

D': (3) Lack of age-appropriate peer relationships

These classifications can be explained or justified as follows:

D: (6) Restricted or abnormal patterns of interest can be classed in D because an interest specifies the areas toward which one's drives are pointed or oriented.

DA: (11) No delay in language development can be classed in DA since language involves use of words or symbols by which we signify areas of focus that we anticipate, A, may help satisfy our drives, D.

A: (12) No delay in cognitive development can be classed in A since cognition concerns knowledge, which is our means of anticipating, A, our environment.

AG: (2) Impaired nonverbal behavior such as eye-to-eye contact can be classed in AG since such behaviors anticipate, A, the goal objects, G, that we direct our attention to, such as another person's eyes.

G: (9) Preoccupation with parts of objects can be classed in G since such objects, although specific examples are not mentioned, evidently refer to goal objects, G, as when a makeup artist focuses on covering up facial blemishes.

GQ: (8) Odd mannerisms, as of fingers, hands, or the whole body can be classed in GQ since the fingers, hands, and whole body amount to bodily goal objects, G, while their mannerisms amount to the visible quiescent manifestations, Q, of such body parts.

Q: (4) Lack of sharing enjoyments, interests, or achievements can be classed in Q since enjoyments, etc., involve areas of quiescent satisfaction, Q.

QD: (7) Apparently nonfunctional routines or rituals can be classed in QD since a routine or ritual involves a quiescent manifestation, Q, such as the sound of the voice in prayer or the movement of the hands in making a sign of the cross across one's chest, that leads to the drive, D, to repeat that satisfaction.

DG: (10) Impaired social, occupational, or other important areas of functioning can be classed in DG since an "area" can be regarded as a set of goal objects, G, while what seems "important" can be regarded as referring to a set of drives, D.

AQ: (5) Lack of social or emotional reciprocity can be classed in AQ since reciprocity suggests that each party anticipates, A, the quiescent satisfactions, Q, to be expected from the other, as in kissing or hugging. For example, Temple Grandin, a noted authority on autism, who had Asperger's herself, could not tolerate hugging other people, as indicated in the movie about her life titled "Temple Grandin."

U: (1) Asperger's syndrome in general can be classed in U since it is the term that unifies, U, the entire gamut of other factors classified here.

N: (13) Lack of criteria matching other pervasive developmental disorders can be classed in N since this lack can be regarded as referring to a negation, N, of characteristics that might classify the person with Asperger's in another domain like schizophrenia, as by having delusions or hallucinations.

D': (3) Lack of age-appropriate peer relationships can be classed in D' since to have a companion who is much older or much younger would put the younger person in the role of a subordinate agent or drive-bearer, D'.

Male Orgasmic Disorder

In DSM IV (*Diagnostic and Statistical Manual of the American Psychiatric Association,* 4th ed., p. 509)[6] the following criteria for a diagnosis of male erectile disorder are given (numbers and letters in brackets added here):

[1] Diagnostic criteria for 302.74 for male orgasmic disorder

A. Persistent or recurrent in, or absence of, orgasm following a normal sexual excitement phase during sexual activity that the clinician,

[2] [a] taking into account the person's age,

[3] [b] judges to be adequate in terms of focus,

[4] [c] intensity, and

[5] [d] duration

B. The disturbance causes marked

[6] [a] distress or

[7] [b] interpersonal difficulty

C. The orgasmic dysfunction is

[8] [a] not better accounted for by another Axiom I disorder [such as depression, as mentioned on p. 508, with no further explanation of what "Axiom I" means) (except another Sexual Dysfunction)

[9] [b] and not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or

[10] [c] a general medical condition.

[11] [d] *Specify* type:

Lifelong Type

Acquired Type

[12] [e] *Specify* type:

Generalized Type

Situational Type

[13] [f] *Specify*:

Due to Psychological Factors

Due to Combined Factors

My guess is that Axis I refers to psychological factors like depression, Axis II to physical factors like the physical effects of a drug, and “combined factors” refers to a mixture of psychological and physical factors.

Suggested classification:

D: (4) No lack of adequate intensity during foreplay

DA: (13) Purely psychological or psychological plus physical factors to be considered

A: (11) Lifelong versus acquired factors to be considered

AG: (12) General versus situational factors to be considered

G: (9) This dysfunction is not due exclusively to a substance, e.g., a drug

GQ: (10) This dysfunction is not due exclusively to a general medical condition

Q: (6) This dysfunction causes distress

QD: (7) This dysfunction causes interpersonal difficulty

DG: (3) No lack of adequate focus during foreplay

AQ: (5) No lack of adequate duration during foreplay

U: (1) Male orgasmic dysfunction in general

N: (8) This dysfunction is not better explained by another Axis I disorder such as depression

D': (2) Age is not a factor that can explain this disfunction

D: (4) No lack of adequate intensity during foreplay can be classed in D since intensity can be regarded as a drive factor, D, since one would wish to rule out a low intensity of sexual desire due to such reasons as excessive indulgence in sex.

DA: (13) Purely psychological or psychological plus physical factors to be considered can be classed in DA since in exercising a drive, D, to eliminate this dysfunction, one tries to anticipate, A, whether the problem is purely psychologi-cal, as in depression, or a mixture of psychological and physical causes, such as depression due to a drug or a brain injury.

A: (11) Lifelong versus acquired factors to be considered can be classed in A since these factors involve what one should anticipate, A, regarding the prognosis for this dys-function, namely whether it will last for a lifetime or is subject to change under specific conditions.

AG: (12) General versus situational factors to be considered can be classed in GQ since these "factors" refer to particular versus general goal objects, G, that one considers when trying to anticipate, A, the cause or nature of this dysfunction.

G: (9) This dysfunction is not due exclusively to a substance, e.g., a drug can be classed in G since a substance amounts to what we call a goal object, G.

GQ: (10) This dysfunction is not due exclusively to a general medical con-dition can be classed in GQ since a general medical condition refers to some quies-cent manifestation, Q, of the body as goal object, G, such as a coma.

Q: (6) This dysfunction causes distress can be classed in Q since "distress" refers to a quiescent dissatisfaction, Q.

QD: (7) This dysfunction causes interpersonal difficulty can be classed in QD since "difficulty" refers to a quiescent dissatisfaction, Q, while "interpersonal' involves another person as an agent or drive-bearer, D, with whom this dissatisfac-tion is associated.

DG: (3) No lack of adequate focus during foreplay can be classed in DG since focus would involve that the person with this dysfunction as an agent or drive-bearer, D, has an adequate level of attention on his lover as goal object, G.

AQ: (5) No lack of adequate duration during foreplay can be classed in AQ since duration involves a temporal span during which one can anticipate, A, that an orgasm would normally occur.

U: (1) Male orgasmic dysfunction in general can be classed in U since these words encompass or unity, U, all the other criteria listed here.

N: (8) This dysfunction is not better explained by another Axis I disorder such as depression can be classed in N since these words negate, N, an Axis I explanation of this dysfunction, e.g., depression or other purely psychological factors.

D': (2) Age is not a factor that can explain this dysfunction can be classed in D' because being too young or too old puts one in the category of a subordinate agent or drive-bearer, D', compared to a normally functioning adult.

Nightmare Disorder

In DSM IV (p. 583)[7] the criteria for a diagnosis of Nightmare Disorder are given as follows [numberings and letterings in brackets have been added here]:

[1] Diagnostic criteria for 307.47 Nightmare Disorder

- Repeated awakenings from the major sleep period with detailed

  detailed recall of

[2] (a) extended and

[3] (b) extremely frightening dreams,

  usually involving threats to

[4] (c) survival,

- (d) security, or
- (e) self-esteem.

- On awakening from the frightening dreams, the person rapidly becomes:

[7] (a) oriented and

[8] (b) alert

  (in contrast to the

[7] (a') confusion and

[8] (b') disorientation

  seen in Sleep Terror Disorder and some forms of epilepsy).

[9] C. The dream experience, or the disturbance resulting from the awakening, causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

- The nightmares do not occur exclusively during the course of another mental disorder, e.g.,

  [10] (a) delirium,

  [11] (b) Posttraumatic Stress Disorder)

and are not due to the direct physiological effects of a

  [12] (c) substance (e.g., a drug of abuse, a medication) or

  [13] (d) a general medical condition.

Suggested classification:

QD: (6) Self-esteem is threatened

D: (4) Survival is threatened

DA: (5) Security is threatened

A: (7) Afterwards one awakens alert rather than confused

AG: (8) Afterwards one awakens oriented rather than disoriented

G: (12) Not due to a substance such as a drug or medication

GQ: (13) Not due to a general medical condition not a cause

Q: (3) Is extremely frightening

DG: (2) Details of an extended dream can be recalled

AQ: (9) The dream experience or disturbance of awakening from it causes significant distress or social, occupational, etc., dysfunction

U: (1) Nightmare disorder in general

N: (10) Delirium not an exclusive cause

D': (11) Posttraumatic Stress Syndrome not an exclusive cause

Explanatory justifications of the foregoing classifications:

QD: (6) Self-esteem is threatened can be classed in QD since “self-esteem” refers to a quiescent satisfaction, Q, while a threat involves a drive, D, to avoid or deal with the threat.

D: (4) Survival is threatened can be classed in D since survival involves the continued existence of the agent or drive-bearer, D.

DA: (5) Security is threatened can be classed in DA since security is attained by anticipating, A, dangers to the self as agent or drive-bearer, D.

A: (7) Afterwards one awakens alert rather than confused can be classed in A since confusion would signify an inability to anticipate, A, correctly.

AG: (8) Afterwards one awakens oriented rather than disoriented can be classed in AG since to be oriented is literally to know directions (e.g., the Orient is literally in the east), where to know is anticipatory, A, while the Orient is a geographically a goal object, G.

G: (12) Not due to a substance such as a drug or medication can be classed in G since a substance is a goal object, G.

GQ: (13) Not due to a general medical condition can be classed in GQ since a medical condition would affect one’s body as goal object, G, and the observable effect of the condition would be an observable quiescent manifestation, Q, such as fever or chills.

Q: (3) Is extremely frightening can be classed in Q since fright is a quies-cent dissatisfaction, Q.

DG: (2) Details of an extended dream can be recalled can be classed in DG since these details, dream images, would amount to goal objects, G, while recalling them would involve the dreamer as agent or drive-bearer, D.

AQ: (9) The dream experience or disturbance of awakening from it causes significant distress or social, occupational, etc., dysfunction can be classed in AQ since to recall a dream experience as unsettling would be anticipatory, while the distress or dysfunction resulting from this experience or disturbance would be a quiescent dissatisfaction, Q.

U: (1) The nightmare disorder in general can be classed in U since it en-compasses or unifies, U, all the criteria classified here.

N: (10) Delirium not an exclusive cause can be classed in N since this factor negates, N, delirium as a sufficient cause of the Nightmare Disorder.

D’: (11) Posttraumatic Stress Disorder can be classed in D’ since this disor-er recalls some episode in which one was particularly vulnerable or weak in relation to the disturbance that produced this disorder, and hence it refers to a past self that was a subordinate agent or drive-bearer, D’, compared to a self that could have withstand the disturbing event without succumbing to this disorder.

Posttraumatic Stress Disorder

DSM IV (pp. 427-9)[8] gives criteria for Posttraumatic Stress Disorder, which I have summarized below, with numbers in brackets added here:

[1] **Diagnostic Criteria for Posttraumatic Stress Disorder**

A. The person has been exposed to a traumatic event in which both of the following were present:

[2] (1) the person experienced, witnessed, or was confronted with an event or events that involved or threatened actual death or serious injury, or a threat to the physical integrity of self or others

[3] (2) the person's response involved intense fear, helplessness, or horror.

[4] **Note:** In children this may be expressed instead or agitated behavior

[5] B. The traumatic experience is persistently reexperienced in one (or more) of the following ways:

- Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.

[4] **Note:** In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.

(2) recurrent distressing dreams of the event

Note: In children, there may be frightening dreams without recognizable content.

- acting or feeling as if the traumatic event were recurring (in-

  cludes sense of reliving the experience, illusions, hallucina-

  tions, and dissociative flashback episodes, including those that

  occur on awakening or when intoxicated).

[4] **Note:** In young children, trauma-specific reenactment may

Occur.

- intense psychological distress at exposure to internal or external

  cues that symbolize or resemble an aspect of the traumatic event

- physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

[6] C. Persistent avoidance of stimuli associated with the trauma and

numbing of general responsiveness (not present before the

trauma), as indicated by three (or more) of the following:

- efforts to avoid thoughts, feelings, or conversations associated with the trauma

- efforts to avoid activities, places, or people that arouse recollections of the trauma

(3) inability to recall an important aspect of the trauma

(4) markedly diminished interest or participation in significant

activities

(5) feeling of detachment or estrangement from others

(6) restricted range of affect (e.g., unable to have loving feelings)

(7) sense of a foreshortened future (e.g., does not expect to have a

career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

[7] (1) difficulty in falling or staying asleep

[8] (2) irritability or outbursts of anger

[9] (3) difficulty concentrating

[10] (4) hypervigilance

[11] (5) exaggerated startle response

[12] E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

[13] F. The disturbance causes clinically significant distress or impairment In social, occupational, or other important area of functioning.

Suggested classification:

D: (2) The threat or danger posed by the trauma: A (1)

DA: (3) The response to that threat or danger, such as fear: A (2)

A: (10) Hypervigilance: D (4)

AG: (8) Anger: D (2)

G: (7) Difficulty falling or staying asleep: D (1)

GQ: (9) Difficulty concentrating: D (3)

Q: (11) Exaggerated startle response: D (5)

QD: (5) The traumatic experience persistently reexperienced: B (1)-(5)

DG: (13) Social, occupational, or kindred activities impaired: F

AQ: (12) Symptoms last at least one month: E

U: (1) Posttraumatic Stress Disorder in general

N: (6) Avoidance of stimuli reminiscent of the trauma: C (1)-(7)

D': (4) Effect of the trauma on children

Explanatory justification of the foregoing classifications:

D: (2) The threat or danger posed by the trauma: A (1) can be classed in D since such a threat energizes a drive, D, to alleviate the threat or danger apparently posed.

DA: (3) The response to that threat or danger, such as fear: A (2) can be classed in DA since responses to a threat or danger that energize one's drives, D, lead to responses that are anticipated, A, such as fear, that are anticipated, A, to deal with the danger, whether effectively or otherwise.

A: (10) Hypervigilance: D (4) can be classed in A since such vigilance is anticipated, A, to guard against danger.

AG: (8) Anger: D (2) can be classed in AG since anger is directed at some dangerous or threatening goal object, G, in anticipation, A, of dealing with it, as by attacking it physically.

G: (7) Difficulty falling or staying asleep: D (1) can be classed in G since in the sleep state a person is like an inert goal object, G.

GQ: (9) Difficulty concentrating: D (3) can be classed in GQ since to concen-trate is to observe a goal object, G, in an effort to keep track of its significant, e.g., threatening or dangerous, quiescent manifestations, Q.

Q: (11) Exaggerated startle response: D (5) can be classed in Q since to be startled is to suddeny become aware of some seemingly important, perhaps dangerous or threatening, stimulus or quiescent manifestations, Q.

QD: (4) The traumatic experience persistently reexamined: B (1)-(5) can be classed in QD since this phase leads back to the original drive, D, from renewed awareness of a potential danger or a threat as quiescent manifestation, Q.

DG: (13) Social, occupational, or kindred activities impaired: F can be classed in DG since these activities involve a drive, D, to deal with various goal objects, G, be they social or occupational or what not.

AQ: (12) Symptoms last at least one month: E can be classed in AQ since these words lead one to anticipate, A, that the quiescent manifestation, Q, of symptoms must last at east one month in order for them to be classed as involving Posttraumatic Stress Disorder.

U: (1) Posttraumatic Stress Disorder in general can be classed in U since this term unifies, U, all the other symptoms classed here under this heading.

N: (6) Avoidance of stimuli reminiscent of the trauma: C (1)-(7) can be classed in N since avoidance seeks to negate the noxious influence of the trauma.

D': (4) Effects of the trauma on children can be classed in D' since children are subordinate agents or drive-bearers, D', compared to adults.

Schizophrenia

DSM IV (*Diagnostic and Statistical Manual of the American Psychiatric Association,* 4th ed,, pp. 285-6)[9] gives the following criteria for a schizophrenia diagnosis (numbers in bracket added, and notes between the criteria listed under the A heading and the subsequent B heading have been omitted, as have the notes following the F heading, since they are relatively incidental rather than essential):

[1] Diagnostic Criteria for Schizophrenia

- *Characteristic symptoms:* Two (or more) of the following, each present for a significant period of time during a 1-month period (or less if successfully treated).

[2] (1) delusions

[3] (2) hallucinations

[4] (3) disorganized speech (e.g., frequent derailment or incoherence)

[5] (4) grossly disorganized or catatonic behavior

(5) negative symptoms, i.e.,

[6] (a) affective flattening,

[7] (b) alogia, or

[8] (c) avolition [lower-case letters (a), (b), and (c) added here]

[9] B. *Social/occupational dysfunction:* For a significant period of the time since the onset of the disturbance, one or more major areas of functioning such as work, interpersonal relations, or self-care are markedly below the level achieved prior to the onset . . . .

[10] C. *Duration:* Continuous signs of the disturbance persist for at least 6 months . . . .

[11] D. *Schizoaffective and Mood Disorder exclusion:* Schizoaffective Disorder and Mood Disorder with Psychotic Features have been ruled out . . . .

[12] E. *Substance/general medical condition exclusion:* The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition).

[13] F. *Relationship to a Pervasive Developmental Disorder:* If there is a history of Autistic Disorder or another Pervasive Developmental Disorder, the additional diagnosis of Schizophrenia is made only if prominent delusions or hallucinations are present for at least a month (or less if successfully treated).

Suggested classification:

QD: (6) Affective flatness

D: (8) Avolition

DA: (7) Alogia

A: (4) Disorganized speech

AG: (2) Delusions

G: (5) Catatonia

GQ: (3) Hallucinations

Q: (11) Schizoaffective and mood disorder exclusion

DG: (9) Social/occupational dysfunction

AQ: (10) Duration

U: (1) Schizophrenia in general

N: (12) Substance/general medical exclusion

D': (13) Relationship to Pervasive Developmental Disorder

Explanatory justification of these classifications:

QD: (6) Affective flatness can be classed in QD since it evidently indicates an absence of significant drive reaction, D, to significant quiescent satisfactions or dissatisfactions, Q, such as a display of laughter at a joke or of sadness at a tragedy.

D: (8) Avolition can be classed in D since volition is the drive, D, to act, while avolition would appear to indicate a relative absence of such drives.

DA: (7) Alogia can be classed in DA since logic would amount to selecting the means that can be rationally anticipated, A, to resolve one's desires or drives, D, while "alogia" evidently means the absence of the ability to make such rational selections.

A: (4) Disorganized speech can be classed in A since speech is one's means of enabling others to anticipate, A, what one thinks or wants, while disorganized speech would indicate confusion in one's2) ability to communicate one's thoughts or desires.

AG: (2) Delusions can be classed in AG since a delusion is a grossly incorrect anticipation, A, of reality, i.e., the goal objects, G, that make up the environment.

G: (5) Catatonia can be classed in G since a catatonic acts as if he or she were an inert goal object, G.

GQ: (3) Hallucinations can be classed in GQ since a hallucination is a quies-cent manifestation, Q, that purports to represent reality, i.e., goal objects, G, that are actually not real but mere mental figments.

Q: (11) Schizoaffective and mood disorder exclusion can be classed in Q since an affect or mood is an emotion or mood, which is a disorder when it is grossly inappropriate, as in laughing at a tragedy, where this exclusion tries to allow psychiatrists to distinguish this sort of defect from schizophrenia in general.

DG: (9) Social/occupational dysfunction can be classed in DG since to deal with other people socially or with an occupation involves a person as agent or drive-bearer, D, exhibiting an appropriate grasp of how to deal with such goal objects, G, as people in social interactions or other things in occupational interactions.

AQ: (10) Duration can be classed in AQ since duration involves the anticipa-tion, A, of quiescent manifestations, Q, of things in the past or future.

U: (1) Schizophrenia can be classed in U since it provides a unifying concept, U, for all of the other criteria that have been classified here.

N: (12) Substance/general medical exclusion can be classed in N since these exclusions negate, N, the classification of behaviors that are induced by substances such as drugs or medications, which are distinct from schizophrenic traits that are rooted in the person's own inner makeup.

D': (13) Relationship to Pervasive Developmental Disorder can be classed in D' since that disorder is first taken note of in childhood and hence focuses on those who are generally regarded as subordinate agents or drive-bearers, D', com-pared to adults.

Personality Disorders

DSM IV (p. 629)[10] lists the following ten relatively well established personality disorders (numbers in brackets added here), with more elaborate descriptions and diagnostic criteria given pages later:

[1] Paranoid Personality Disorder is a pattern of distrust and suspicious-Ness such that others' motives are interpreted as malevolent.[11]

[2] Schizoid Personality Disorder is a pattern of detachment from social relationships and a restricted range of expression.[12]

[3] Schizotypal Personality Disorder is a pattern of acute discomfort in close relationships, cognitive or perceptual distortions, and eccentric-cities of behavior.[13]

[4] Antisocial Personality Disorder is a pattern of disregard for, and viola-tions of, the rights of others.[14]

[5] Borderline Personality Disorder is a pattern of instability in interper-sonal relationships, self-image, and affects, and marked impulsivityy.[15]

[6] Histrionic Personality Disorder is a pattern of excessive emotionality And attention seeking.[16]

[7] Narcissistic Personality Disorder is a pattern of grandiosity, need for admiration, and lack of empathy.[17]

[8] Avoidant Personality Disorder is a pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation.[18]

[9] Dependent Personality Disorder is a pattern of submissive and cling-ing behavior related to an excessive need to be taken care of.[19]

[10] Obsessive-compulsive Personality Disorder is a pattern of preoccupation with orderliness, perfectionism, and control.[20]

The next paragraph is titled Personality Disorders Not Otherwise Specified and ends with mention of an eleventh disorder:

[11] Passive-Aggressive Personality Disorder is described pages later as

"a pervasive pattern of negativistic attitudes and passive resistance

to demands for adequate performance in social and occupational situ-

ations".[21]

In addition to these eleven personality disorders, two additional ones are mentioned in a book titled *Personality Self-Portrait*, by John M. Oldham and Lois B. Morris, published in 1990, four years prior to DSM-IV, namely:

[12] Self-defeating Personality Disorder, described in the Oldham-Morris

book as exhibited by one who Is "trapped in repetitive patterns of

soured pleasures and missed opportunities".[22]

[13] Sadistic Personality Disorder, described in the Oldham-Morris book as

exhibited by one who is "cruel, coldhearted, and ruthlessly intimidating".[23]

The self-defeating and sadistic personality disorders are not listed in the index to DSM-IV. They are named in the Oldham-Morris book.

The following chart shows how the personality disorders listed in DSM-IV (plus the two not listed there) are paired with normal personality traits in the various chapters of the Oldham-Morris book.

DSM-IV	O.-M. Chapter	Personality Disorder	Personality Trait
[1]	(8)	Paranoid	Vigilant
[2]	(13)	Schizoid	Solitary
[3]	(12)	Schizotypal	Idiosyncratic
[4]	(11)	Antisocial	Adventurous
[5]	(14)	Borderline	Mercurial
[6]	(7)	Histrionic	Dramatic
[7]	(5)	Narcissistic	Self-confident
[8]	(9)	Avoidant	Sensitive
[9]	(6)	Dependent	Devoted
[10]	(4)	Obsessive-compulsive	Conscientious
[11]	(10)	Passive-aggressive	Leisurely
[12]	(15)	Self-defeating	Self-sacrificing
[13]	(16)	Sadistic	Aggressive

The Odham-Morris book has a 104-item personality test in its opening pages (pp. 35-45)[24] with a scoring key whereby one can determine how strongly one scored on each of these thirteen factors. For example, the present writer scored 0% on the dramatic factor, 100% on the sensitive factor, and 10% to 56% on the remaining eleven factors.

Suggested classification:

D: [7](5) Narcissistic/Self-confident

DA: [5](14) Borderline/Mercurial

A: [1](8) Paranoid/Vigilant

AG: [13](16) Sadistic/Aggressive

G: [12](15) Self-defeating/Self-sacrificing

GQ: [6](7) Histrionic/Dramatic

Q: [11](10) Passive-aggressive/Leisurely

QD: [10] Obsessive-compulsive/Conscientious

DG: [9](6) Dependent/Devoted

AQ: [4](11) Antisocial/Adventurous

U: [8](9) Avoidant/Sensitive

N: [2](13) Schizoid/Solitary

D': [3](12) Schizotypal/Idiosyncratic

My explanatory justifications for these classifications are as follows:

D: [7] Narcissistic/Self-confident can be classed in D since the self-confident person relies on his own desires or drives for guidance, the self being the guiding agent or drive-bearer, D.

DA: [5] Borderline/Mercurial can be classed in DA since in the DA phase an agent is able or willing to think up diverse means that might be anticipated, A, to resolve his drives, D, readily flipping back and forth between one possible approach to a problem and another rather than sticking stubbornly to some traditional, tried and true solution, so that he or she may seem eccentric to others who are satisfied with the usual approaches.

A: [1] Paranoid/Vigilant can be classed in A since to be vigilant is to try to anticipate, A, various dangers, a wariness which, carried to extremes, amounts to the paranoid disorder.

AG: [12] Sadistic/Aggressive can be classed in AG since an aggressive person attacks goal objects, G, that are anticipated, A, to obstacles to his success, an aggressiveness that can amount to sadism if the feelings of others are totally ignored.

G: [13] Self-defeating/Self-sacrificing can be classed in G since a self-sacrificing person views his life as simply a goal object, G, that others may use as they please to attain their own goals, an approach that, carried to an extreme, may appear to be self-defeating, especially if there is no obvious rationale for the self-sacrifice.

GQ: [6] Histrionic/Dramatic can be classed in GQ since such a person, like an actor or actress, may make himself as goal object, G, provide the appearance or quiescent manifestations, Q, that fit a certain role or otherwise may provide entertainment or perhaps some more negative effect on others.

Q: [11] Passive-aggressive/Leisurely can be classed in Q since such a person is focused on his or her own quiescent satisfactions, Q, regardless of the dissatisfac-tions that others may experience from the leisureliness.

QD: [10] Obsessive-compulsive/Conscientious can be classed in QD since a person with these traits is focused on exerting the drives, D, needed to attain a certain quiescent satisfaction, Q, even if it requires numerous attempts.

DG: [9] Dependent/Devoted can be classed in DG since a person with this trait relies on the guidance or drives, D, of others to guide himself or herself as goal object, G, through life or some crucial portion of life.

AQ: [4] Antisocial/Adventurous can be classed in AQ since a person with this trait is focused on some quiescent satisfactions, Q, that is anticipated, A, to be more likely to occur if one is totally focused on one's own anticipations, regardless of how they may affect others, as when a Crusader is focused on capturing the Holy Land in anticipation, A, that his adventurous exploits

may lead to his future quies-cent satisfaction, Q, as a denizen of Heaven, regardless of how many people may suffer or die as a result.

U: [8] Avoidant/Sensitive can be classed in U since such a person is focused on the overall attainment of success by paying attention to all the phases of the feed-back loop, attentiveness to all relevant factors being his fundamental nature as a sensitive person. (I arrived at this classification by looking at my own scores on this test, where I scored 100% on the sensitive factor but only 0% to 56% on all the remaining twelve factors, since clearly I am focused on a comprehensive synthesis or unity, U, for all the factors or categories relevant to the completion of any task.)

N: [2] Schizoid/Solitary can be classed in N since such a person is wrapped up in his own goals, to the neglect onegation, N, of fitting in socially.

D': [3] Schizotypal/Idiosyncratic can be classed in D' since such a person is like a child who is focused on his own little world of idiosyncratic interests or hobbies that manifest his own drives as a subordinate agent or drive-bearer, D'.

Postscript

I did not have copies of DSM-5 (the fifth edition, 2013) when I performed these analyses on the personality disorders listed in DSM-IV (the fourth edition, 1994), nor did I have a copy of the second edition of the Oldham-Morris book (1995) when I did these analyses with their first edition (1990), but I felt that redoing my analyses in light of these additional editions, which I have subsequently obtained, would not significantly alter the gist of the analyses offered here.

Conclusion

The advantage of these analyses is that they provide a far more systematic and orderly way of organizing and understanding psychiatric disorders than has heretofore been available. Clarity of understanding is a goal that no one should regard as pointless.

References

1. Pepper, Stephen C. *World Hypotheses: A Study in Evidence.* Berkeley and Los Angeles, CA: University of California Press, 1942.
2. _____. *Concept and Quality: A World Hypothesis.* La Salle, IL: Open Court, 1967.
3. Hoeflin, Ronald K. *The Encyclopedia of Categories.* New York, NY: Self-published 2020.
4. *Merriam-Webster's Collegiate Dictionary.* 11th ed. Springfield, MA: Merriam-Webster, Inc., 2009.
5. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV.* 4th ed. Washington, DC: American Psychiatric Association, 1994, p. 77.
6. _____. p. 509.
7. _____. p. 583.
8. _____. pp. 427-9.
9. _____. pp. 285-6.
10. _____. p. 629.
11. _____. pp. 629 and 637.
12. _____. pp. 629 and 641.
13. _____. pp. 629 and 645.
14. _____. pp. 629 and 649-50.
15. _____. pp. 629 and 654.
16. _____. pp. 629 and 657.
17. _____. pp. 629 and 661.
18. _____. Pp. 629 and. 664.
19. _____. pp. 629 and 668-9.
20. _____. pp. 629 and 672-3.
21. _____. pp. 629 and 734.
22. Oldham, John M., and Lois B. Morris. *Personality Self-portrait: Why You Think, Work, Love, and Act the Way You Do.* [1st ed.,] p New York, NY: Bantam Books, 1990, p. 330.
23. _____. p. 354.
24. _____. pp. 35-45.

The Curious Quest for Absolute Knowing

Ken Shea

Once upon a time, a German gentleman, the precocious and occasionally naughty son of a pastor, wrote a book. Friedrich Nietzsche commences *Beyond Good and Evil: Prelude to a Philosophy of the Future* by making a few observations about the marquee philosophers throughout history. 'Gradually it has become clear to me what every great philosopher so far has been: namely, the personal confession of its author and a kind of involuntary and unconscious memoir; also that the moral (or immoral) intentions in every philosophy constituted the real germ of life from which the whole plant has grown'. Nietzsche elsewhere reckoned ‘contemplation without interest’ a ‘nonsensical absurdity’ and apprehended truth as ‘a movable host of metaphors, metonymies, and anthromorphisms: in short, a sum of human relations’. There are no facts *per se*, only interpretations. A 'drive for knowledge' is not, in the end, the father of philosophy for Nietzsche. But who, then, could the real father be? After all, Nietzsche informs the reader, 'every drive wants to be master - and it attempts to philosophize in *that spirit*'. Where would one even begin to look for the deeper intentions lurking behind *purported* truth? Should a lantern be cast out for wisdom or an adventurous spelunker commissioned in search of a 'will to power'? Does a Foucauldian power/knowledge penetrate the most seemingly smooth intercourse or could Gianni Vattimo's 'hermeneutics of suspicion' reveal a yet-unplumbed unconscious impulse? 'Every drive wants to be master - and it attempts to philosophize in *that spirit*'? If the outward spirit of knowing has been one of an earnest pursuit of truth, then few embody that search more roundly than the philosopher and mathematician Bertrand Russell.

The author of *The Philosophy of Logical Atomism*, Bertrand Russell, penned an entry in *The Philosophy of John Dewey*, an essay titled 'Dewey's New Logic'. Therein, Russell expresses reservations about John Dewey's pragmatism; Dewey himself, grudgingly, defines pragmatism in *Logic: The Theory of Inquiry* thus: ‘namely the function of consequences as necessary tests of the validity of propositions, *provided* these consequences are operationally instituted and are such as to resolve the specific problems evoking the operations’. Russell apparently looks askance at many notions Dewey treasures, e.g., 'inquiry', 'acquaintance', and 'warranted assertability', and characterizes the pragmatist Charles Sanders Peirce's notion of truth ('the opinion which is fated to be ultimately agreed to by all who investigate') as mere 'sociological prophecy', or a species of faith. Then again, Russell has told the reader upfront, at the beginning of the skeptical essay ‘Dewey’s New Logic’, that, 'In every writer on philosophy there is a concealed metaphysic, usually unconscious; even if his subject is metaphysics, he is almost certain to have an uncritically believed system which underlies his explicit arguments. Reading Dr. Dewey makes me aware of my own unconscious metaphysic as well of his'. The reader has to wait until the conclusion of the essay for Bertrand to delineate the perceived difference in ‘metaphysic’ underlying he and ‘Dr. Dewey’.

> 'For my part, I believe that too great emphasis upon the practical robs practice itself of its *raison d'etre*. We act, in so far as we are not blindly driven by instinct, in order to achieve ends which are not merely further actions, but have in them some element, however precarious and however transient, of rest and peace - not the rest and peace of mere quiescence, but the kind that, in the most intense form, becomes ecstasy. When what passes for knowledge is considered to be no more than a momentary halting-place in a process of inquiry which has no goal outside itself, inquiry can no longer provide intellectual joys, but becomes merely a means to better dinners and more rapid locomotion. Activity can supply only one half of wisdom; the other half depends upon a receptive passivity. Ultimately, the controversy between those who base logic upon "truth" and those who base it upon "inquiry" arises from a difference of values, and cannot be argued without, at some point, begging the question. I cannot hope, therefore, that anything in the above pages has validity except for those whose bias resembles my own, while those whose bias resembled Dr. Dewey's will find in his book just such an exposition as the subject seems to them to require' (Russell, *The Basic Writings of Bertrand Russell*, pages 205-206).

Proposed theoretical entities like truth, the self, language, number, mind, consciousness, metaphysics, and even ontology as such come under occasional scrutiny. Immanuel Kant is purported to have attempted to imperiously hypostatize the concept of mind in order to enthrone philosophy over other parts of culture. Eliminative materialists such as Daniel Dennett, Paul Churchland, W.V. Quine, Richard Rorty (cf. *Mind, Language, and Metaphilosophy*), and Gilbert Ryle appear relaxed about jettisoning ‘mind’ and ‘consciousness’ altogether by naturalizing those erstwhile conceptual confusions. The linguistic turn, which gathered steam predominantly in the last century, was apprehended by Richard Rorty to serve an analogous function to Platonism in antiquity, viz., to create a special domain only accessible to philosophers, or language-wielding humans at the very least. The thought is that life was so bleak in Plato’s time that acolytes were advised to noetically take refuge in another, Platonic realm, a theory of Forms, with transcendentals escaping time, change, chance, and contingency. The True, The Good, and The Beautiful blossomed like never before, spawning epistemology, ethics, and aesthetics. After Charles Darwin and the advances of the special sciences through the 19th and 20th centuries, philosophers panicked, Rorty surmised, and sought an area that could be their own privileged domain; hence the emphasis on philosophy of language concomitant with advances in the special sciences. In *Human, All Too Human*, Nietzsche discovers that, ‘The importance of language for the development of culture lies in the fact that, in language, man juxtaposed to the one world another world of his own, a place which he thought so sturdy that from it he could move the rest of the world from its foundations and make himself lord over it.’

With so much heady change afoot in the atmosphere, certitude was also, politely, courted through proximity to the special sciences. The distinguished British philosopher Bernard Williams canonized this coquettish tendency to partition science from the rest of culture with a ‘metaphysically materialist view of the world’ in a book titled *Ethics and the Limits of Philosophy*.

What Williams regards as ‘the absolute conception of the world’ basically aligns with scientific realism, i.e., ‘something that science ideally converges on’ (Putnam, ‘Bernard Williams and the Absolute Conception of the World’, *Renewing Philosophy*, page 105). On pages 138 and 139 of *Ethics and the Limits of Philosophy*, Williams strained to refine the following article of faith, what Bertrand Russell earlier called a sociological prophecy: ‘the notion of an absolute conception can serve to make effective a distinction between “the world as it is independent of our experience” and “the world as it seems to us”’. Williams goes on to explain that, ‘It does this by understanding “the world as it seems to us” as “the world as it seems peculiarly to us”; the absolute conception will, correspondingly, be a conception of the world that might be arrived at by any investigators, even if they were very different from us.’

One example of a peoples ‘very different from us’ could be the Aztecs. Some estimate that 20,000 people were sacrificed annually during the heyday of the Aztec Empire, and a new temple dedicated to Huitzilopochtli in the late 15th century could have required approximately 80,000 human sacrifices. Were the Aztecs ‘wrong’ in some higher, sublime ethical sense to pursue this course? Is there any way to criticize another culture, e.g., one ‘very different’ from our own culture, without being tragically ethnocentric? Hilary Putnam has written extensively on the entanglement of fact and value, an example of what the pragmatist John Dewey appreciated of a feather with ‘the whole brood and nest of dualisms which have, upon the whole, formed the “problems” of philosophy’ within the ‘spectator theory of knowledge’. Accordingly, Hilary goes about dissolving the so-called entanglement of fact and value by enlisting tenets of pragmatism and W.V. Quine’s ‘web of belief’, à la coherence theory of truth. Putnam’s foil is Bernard Williams, who more than anything yearned for two distinct kinds of truth, namely, (1) *ordinary* truth of ‘the world as it seems peculiarly to us’, and (2) the *absolute* truth of ‘the world as it is independent of our experience’. A neat division, indeed. Sensible appearance aside, such a division between *kinds* of truth is incoherent, says Putnam, who contends that Williams’s bizarre ‘anti-perspectivalism about physics’ undervalues the ‘entanglement of the factual and ethical’.

> ‘Consider, for example, the question as to whether we can condemn the Aztec way of life or, more specifically, the human sacrifice that the Aztecs engaged in. On Williams' view, the Aztec belief that there were supernatural beings who would be angry with the Aztecs if they did not perform the sacrifices was, as a matter of scientific fact, wrong. This belief we *can* evaluate [according to Williams]. It is simply false; and the absolute conception of the world, to the extent we can now approximate it, tells us that it is false. But we cannot say that the Aztec way of life was wrong. Yet the feature of the Aztecs' way of life that troubles us (the human sacrifice) and their belief about the world that conflicts with science were interdependent. If we can say that the Aztec belief about the gods was false, why can we not say that the practice to which it led was wrong (although, to be sure, understandable given the false factual belief)? If we are not allowed to call the practice wrong, why are we allowed to call the belief false? The so-called "absolute" and the ethical are just as entangled as the "factual" and the ethical' (Putnam, ‘The Absolute Conception of the World’, *Renewing Philosophy*, pages 105-106).

> 'Williams wants to acknowledge the entanglement of fact and value and hold on to the "absolute" character of (ideal) scientific knowledge at the same time. But there is no way to do this. It cannot be the case that scientific knowledge (future fundamental physics) is absolute and nothing else is; for fundamental physics cannot explain the possibility of *referring to* or *stating* anything, including fundamental physics itself. So, if everything that is *not* physics is "perspectival", then the notion of the "absolute" is itself hopelessly perspectival' (*ibid*., page 107).

Donald Davidson, who may be construed as a post-analytic philosopher of language following, slightly heretically, in Quine's footsteps and agreeing with Putnam on many points, attempted to dismantle the third 'dogma' of empiricism. You may remember that Quine impugned both (1) reductionism and (2) the analytic-synthetic distinction within 'Two Dogmas of Empiricism'. Davidson wants to question a so-called third 'dogma' of empiricism by critiquing the scheme-content distinction as such: 'In giving up the dualism of scheme and world, we do not give up the world, but re-establish unmediated touch with the familiar objects whose antics make our sentences and opinions true or false' (Davidson, 'On the Very Idea of a Conceptual Scheme', *Inquiries Into Truth and Interpretation*, page 198). Davidson reckons that by relinquishing 'dependence on the concept of uninterrupted reality, something outside all schemes and science', or brute facts lacking a principle of sufficient reason, one falls into the arms of what Quine thought of as ontological relativity and what Davidson calls conceptual relativity. Quine's notion of ontological relativity entails that there is a stage before one has a dynamic 'web of belief', i.e., the meta-ontological stage, during which ontological posits or ontological 'commitments' (e.g., belief in a literal deity or sociological prophecy) are somehow, maybe culturally or without full conscious awareness, submitted for inclusion in an idiosyncratic ontology. Once all the legwork in creating a web of belief in completed, new sensory data - what Quine insisted were sensory 'stimulations' - interact with the conceptual apparatus to make it all coherent; the idealist George Berkeley once made the comment that, 'nothing can be like an idea except an idea', and in a queer way Quine concluded something similar with the notion of ontological relativity. W.V. Quine did fancy himself a 'reluctant Platonist only in honest recognition of what have seemed to be the demands of science'.

The upshot of ontological or conceptual relativity is that, 'Reality itself is relative to a scheme: what counts as real in one system may not in another' (*ibid*., page 183). Donald Davidson perceives truth, meaning, language, and ontology as inextricably yoked - instead of straining for a skyhook, Davidson is prone to reaching for dictionaries. If one wishes, therefore, to understand a given scheme, then it will not do to fall back on another quasi-neutral or absolutist scheme, such a science or religion, which seeks to eliminate any theoretical entities that it cannot assimilate. The word 'quasi-neutral' is used because in stepping back one does not thus inhabit neutral territory, an Archimedean point; instead, one is located in another theory through which reality is being filtered, cf. Thomas Metzinger's *The Ego Tunnel*. 'It would be equally wrong to announce the glorious news that all mankind - all speakers of language, at least - share a common scheme and ontology', chirped Davidson, cautioning, with Richard Rorty and Hilary Putnam, against perspectives akin to Bernard Williams's absolutist position.

The ontological relativist, conceptual relativist, and pragmatist alike have abandoned the odyssey to fashion a shared vocabulary, once and for all, and forsaken a shared language that glues together the human community. Within the magisterial *Consequences of Pragmatism*, Richard Rorty appreciated the quest for absolute knowing as complete folly: 'It is not to be achieved by an attempt at commensuration, at a common vocabulary which isolates the common human essence of Achilles and the Buddha, Lavoisier and Derrida. Rather, it is to be reached, if at all, by acts of making rather than of finding - by poetic [cf. *poiesis*] rather than Philosophical achievement. The culture which will transcend, and thus unite, East and West, or the Earthlings and the Galactics, is not likely to be one which does equal justice to each, but one which looks back on both with the amused condescension typical of later generations looking back at their ancestors' (Rorty, *Consequences of Pragmatism*, page XXX). Donald Davidson has, moreover, made the astute point that any attempt to reconcile two distinct *weltanschauung* automatically entails language and at least three other factors, viz., 'the close relations between language and the attribution of attitudes such as belief, desire, and intention' (*ibid*., page 186). Davidson's view is that to translate from one conceptual scheme to another there needs to be a set of shared objects: 'A language may contain simple predicates whose extensions are matched by no simple predicates, or even by any predicates at all, in some other language. What enables us to make this point in particular cases is an ontology common to the two languages, with concepts that individuate the same objects' (*ibid*., page 192). Arguably, a less strict homology, or creative analogizing coupled with educated guesswork, could conceivably suffice to fulfill the translation work. The job certainly *becomes more* labor-intensive the more daylight there is between dissimilar languages and conceptual schemes: 'It seems unlikely that we can intelligibly attribute attitudes as complex as these [i.e., ascription of beliefs outside of our own web of belief] to a speaker unless we can translate his words into ours. There can be no doubt that the relation between being able to translate someone's language and being able to describe his attitudes is very close' (*ibid*., page 186).

In the absence of a single, reliable area of culture which can furnish a common matrix, what Michel Foucault called a 'grid of intelligibility' or what Thomas Kuhn called a 'disciplinary matrix', for harmonizing two or more languages, where can one turn for support? In bridging, on the one hand, a desire for translation and shared understanding with, on the other hand, an acknowledgement of the difficulties because of an unshared lexicon and scheme, Donald Davidson comes at the problem in this way: 'The dominant metaphor of conceptual relativism, that of differing points of view, seems to betray an underlying paradox. Different points of view make sense, but only if there is a common co-ordinate system on which to plot them; yet the existence of a common system belies the claim of dramatic incomparability. What we need, it seems to me, is some idea of the considerations that set the limits to conceptual contrast' (*ibid*., page 184). The 'limits to conceptual contrast' are the bounds established by focusing on shared, or at least analogous, ontological objects crystallized out of meta-ontology that can be put into words, wherefrom translation can begin, cf. Kuhnian in/commensurability, B.L. Whorf's 'The Punctual and Segmentative Aspects of Verbs in Hopi'. Davidson juggles the concerns of ontology, language, conceptual relativity, and intertranslation thus: 'Studying the criteria of translation is therefore a way of focusing on criteria of identity for conceptual schemes'.

Quine and Davidson did arrive at similar points in that Davidson's anxiety about 'a common co-ordinate system on which to plot' mirrors something Quine said in *Ontological Relativity*: 'The background language gives the query sense, if only relative sense; sense relative in turn to it, this background language. Querying reference in any more absolute way would be like asking absolute position, or absolute velocity, rather than position or velocity relative to a given frame of reference'. Quine's coherence theory of truth permitted him to maintain, simultaneously peering out and *making* the world *From a Logical Point of View*, that, 'the totality of our so-called knowledge or beliefs, from the most casual matters of geography to the profoundest laws of atomic physics or even of pure mathematics and logic, is a man-made fabric which impinges on experience only along the edges.' Paradoxically, the extra latitude afforded by treating 'so-called knowledge or beliefs' as strands of a web of belief permitted treating abstract mathematical objects like numbers and sets as actual entities, e.g., in order to compensate for the underdetermination of empiricism and physical theory, cf. Quine-Putnam indispensability argument. Shouldn't philosophers of language take a page out of the physicists' tried-and-true playbook and avail themselves of relativity, eschewing absolutes in light of a contingent frame of reference and in acknowledgement of thousands of languages pulsing through a polyglot network of societies? Reference or language shouldn't be expected to operate in a more absolute sense than physics, which has the benefit of contextualizing, essentially limiting, the discussion to a 'given frame of reference', implies Quine.

The late and more pragmatic Wittgenstein of the *Philosophical Investigations*, the iteration of Wittgenstein applauded by the pragmatist Richard Rorty, bonded with Quine and Davidson over relativity. Language games and *lebensform* are now intimately related: 'The word "language-game" is used here to emphasize the fact that the speaking of language is part of an activity, or of a form of life'. Straightforwardly rendering contrasting forms of life into an 'absolute' matrix founders due to the absence of a 'common vocabulary which isolates the common human essence of Achilles and the Buddha, Lavoisier and Derrida'. George Santayana, in fact, penned an essay titled 'The Absence of Religion in Shakespeare', published in *Interpretations of Poetry and Religion*, wherein the Spanish poet-philosopher lyrically claimed that within Shakespeare's plays there is 'no fixed conception of any forces, natural or moral, transcending our mortal energies'. One is told that Shakespeare's stage is consistently enlivened 'without a philosophy and without a religion': contingency and precarity are totalizing. Philosophy as a literary genre, which is to suggest storytelling, is a welcome possibility. 'Literature began to set itself up as a rival to philosophy when people like Cervantes and Shakespeare began to suspect that human beings were, and ought to be, so diverse that there is no point in pretending that they all carry a single truth deep in their bosoms' (Rorty, 'Philosophy as a Transitional Genre', *Philosophy as Cultural Politics: Philosophical Papers, Volume 4*, page 93). Friedrich Nietsche's perspectivism coupled with Quine's ontological relativity and Davidson's conceptual relativity could actually enhance, rather than blunt, objectivity. 'There is *only* a perspective seeing, *only* a perspective "knowing"; and the *more* affects we allow to speak about one thing, the *more* eyes, different eyes, we can use to observe one thing, the more complete will our "concept" of this thing, our "objectivity," be' (Nietsche, Third Essay, Section 12, *On the Genealogy of Morals*, page 555). Perspectivism for enhanced objectivity? Shakespeare as future 'philosopher'?

Works Consulted

Churchland, Paul, Churchland, Patricia. *On the Contrary: Critical Essays, 1987-1997.* Cambridge, Massachusetts. The MIT Press. 1998.

Davidson, Donald. *Inquiries into Truth and Interpretation.* New York, New York. Oxford University Press. 1984.

Feyerabend, Paul. *Farewell to Reason*. London, England. Verso Books. 1987.

Kuhn, Thomas. *The Structure of Scientific Revolutions*. Chicago, Illinois. University of Chicago Press. 1996.

Lakatos, Imre. Musgrave, Alan. *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science*. London, England. Cambridge University Press. 1976.

Metzinger, Thomas. *Being No One: The Self-model Theory of Subjectivity.* Cambridge, Massachusetts. The MIT Press. 2004.

Metzinger, Thomas. *The Ego Tunnel: The Science of the Mind and the Myth of the Self*. New York, New York. Basic Books. 2009.

Morick, Harold. *Challenges to Empiricism*. Belmont, California. Wadsworth Publishing Company. 1972.

Nietzsche, Friedrich. *Basics Writings of Nietzsche.* New York, New York. Random House. 1992.

Nietzsche, Friedrich. *Philosophy and Truth: Selections from Nietzsche's Notebooks of the Early 1870s.* Amherst, New York. Humanity Books. 1979.

Putnam, Hilary. *Reason, Truth and History.* New York, New York. Cambridge University Press. 1981.

Putnam, Hilary. *Renewing Philosophy.* Cambridge, Massachusetts. Harvard University Press. 1992.

Quine, Willard Van Orman. *From a Logical Point of View.* Cambridge, Massachusetts. Harvard University Press. 1980.

Quine, Willard Van Orman. *Ontological Relativity and Other Essays.* New York, New York. Columbia University Press. 1969.

Rorty, Richard. *Consequences of Pragmatism.* Minneapolis, Minnesota. University of Minnesota Press. 1986.

Rorty, Richard. *Objectivity, Relativism, and Truth.* New York, New York. Cambridge University Press. 1991.

Rorty, Richard. *Philosophy as Cultural Politics.* Cambridge University Press. New York, New York. 2007.

Russell, Bertrand. *The Basic Writings of Bertrand Russell.* New York, New York. Simon and Schuster. 1961.

Vattimo, Gianni. *Dialogue with Nietzsche.* New York, New York. Columbia University Press. 2006.

Vattimo, Gianni. *A Farewell to Truth.* New York, New York. Columbia University Press. 2014.

Wittgenstein, Ludwig. *Major Works*. New York, New York. HarperCollins Publishing. 2009.

Tathata

As I crawled along the streets beneath the stars

for eternity one day,

I chatted with God's God's … God —

actually just an infinite regress of Demiurges

— who was now on trial again at the Many-World's Court,

for crimes against humanity;

"Mazel tov!," I said to God,

and then I prayed for Her and to Her.

Oy! I reminded God of Her sins against me and my family.

"Would you care for a glass of wine?," I asked Her, — "before facing the firing squad, again."

"L'chaim!"

May-Tzu

"Mortals are immortals and immortals are mortals, the one living the others' death and dying the others' life." — Heraclitus

‘Prais’d be the fathomless universe,
For life and joy, and for objects and knowledge curious’

-Walt Whitman