



laetus in praesens

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Anticipation of Judicial Inquisition of Humans by Extraterrestrials Potential consequence of failure to adhere to universal principles of intelligent life

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Introduction

In the midst of a global pandemic widely framed as a war, there is a strong case for recognizing both the civilian fatalities and those whose lives are at stake on a daily basis -- in order to reduce the risk to greater numbers of humans. Humans are called upon by authorities to take shelter in their homes to avoid any risk (*Cowering for One's Country in the War against Coronavirus*, 2020). It is therefore appropriate to honour those -- effectively "on the front line" -- who are dying in far greater numbers in the hope of ending the pandemic as soon as possible. As in conventional warfare, they have little choice in performing this duty, having been conscripted and trained to that end.

In the spirit of the cenotaphs in many small towns in the former British Empire, the concern here follows from the inscription on those monuments: *Lest We Forget*. Beyond the immediate focus in that regard is a wider concern here with the potential implications of those involuntary fatalities as they may be perceived from a more universal perspective.

This follows from the possibility that humanity may eventually make contact with intelligent extraterrestrials -- whose existence is variously considered hypothetical, despite the massive investment in detecting [extraterrestrial life](#) and the [exoplanets](#) which they may inhabit (Daniel Clery, *How big money is powering a massive hunt for alien intelligence*, *Science*, 10 September 2020; Parmy Olson, *The Hunt For Extraterrestrial Life Just Got A Groundbreaking, \$100 Million Investment*, *Forbes*, 20 July 2015). The possibility of such contact is acquiring political dimensions (Abhijnan Rej, *What Would Happen If China Made First Contact With Extraterrestrials?* *The Diplomat*, 11 March 2020).

So framed, **the focus here is on the non-human species conscripted into the process of testing the many possible vaccines considered vital to a viable response to COVID-19**, or to the mutations which may succeed it. Although there are many efforts to document the number of cases of humans testing positive for the virus, and the fatalities which may result, the statistical methodologies and conclusions continue to be in dispute. Far more problematic is the determination of the number of non-human species conscripted into the process of testing vaccines, irrespective of the consequences of their testing positive.

There is a degree of awareness of the number of animals used in biological laboratories for a wide variety of purposes -- whether the testing of any drug or product that may be fatal to humans or in preparations for biochemical warfare. It has been estimated that the annual use of vertebrate animals in [animal experimentation](#) -- from zebrafish to non-human primates -- ranges up to 100 million per year. In the European Union, vertebrate species represent 93% of animals used in research, and 11.5 million animals were used there in 2011. By one estimate the number of mice and rats used in the United States alone in 2001 was 80 million. Mice, rats, fish, amphibians and reptiles together account for over 85% of research animals. In addition there is extensive [experimentation on invertebrates](#) typically excluded from such statistics.

The proportion of animals specifically used in the development of a vaccine for COVID-19 is seemingly either unknown or unavailable -- but may emerge in years to come. Descriptions of the experience of animals in such laboratories, and the manner of their death, have been dramatically presented by those specifically opposed to such treatment, notably [People for the Ethical Treatment of Animals](#)

(PETA), [Humane Society International](#), and [Cruelty Free International](#). There is a degree of sensitivity on the part of some laboratories to such treatment and the possibilities of alleviating suffering through alternatives to animal testing.

The purpose of this exercise is however to **reframe the relation of humans to non-human species -- as it may be perceived from an extraterrestrial perspective**, now or in the future. Humans are naturally skilled in framing their treatment of animals -- notably justified by particular interpretations of religious scriptures held to be beyond question, as with interpretations of the *Bible* regarding [human dominion](#) over all animals (*Bible Verses About Dominion*). These interpretations are also held to justify the extent to which animals may be consumed by humans, as well as the treatment accorded to them to enable this, possibly prescribed as ritual practices.

There is however a degree of sensitivity on the part of humans to animal welfare, to the conditions of transport of live animals, and to slaughterhouse procedures. This extends to the procedures of animal husbandry, especially in regard to the conditions experienced by animals in intensive farming installations.

It is questionable whether extraterrestrials -- however hypothetical -- will appreciate the justifications offered by humans for the treatment of non-human animals. There is also the possibility that human society will itself come to view such treatment as barbaric in some future period -- potentially as a consequence of contact with extraterrestrials (or as a condition of such contact).

The argument here follows from related speculations in this regard, given their probable dependence on quite distinctive values and principles -- potentially meaningless to humans (*Communicating with Aliens: the psychological dimension of dialogue*, 2000). Extraterrestrials may have reached the conclusion that any civilization should be encountered on its own terms, according to its own rules.

As previously argued, every effort might then be put in place by ETs to determine what those rules were -- just as human colonial powers and missionaries might have chosen to do in their encounter with other cultures (*Writing Guidelines for Future Occupation of Earth by Extraterrestrials*, 2010). In practice this might be interpreted as the **Golden Rule**: *Be done by as you did*. It is of course uncertain whether extraterrestrials would seek the rules in order simply to apply them as such, to use them to develop a higher degree of 'rapport' with humans for mutual benefit, or to use such rapport in order to "entrain" humans in unsuspected ways

Humanity has enabled considerable investment in [biochemical warfare](#) -- and the development of protective measures -- with the aid of animals tested for that purpose. There is therefore the additional possibility that a virus such as COVID-19 is an unrecognized form of "contact" initiated by extraterrestrials in response to human under-development -- according to principles valued throughout the universe. Colonial powers have not been averse to such forms of "contact" with the indigenous species they have encountered.

Although speculative, the argument is consistent with philosophical intuitions regarding [panpsychism](#), [karma](#), and [reincarnation](#), as well as emerging implications with respect to [quantum mind](#). Whilst severe disruptions to the atmosphere by the arrival of extraterrestrial vessels is now characteristic of fictional representations, it could be argued that this is only suggestive of disruption to the "memetic atmosphere" which could herald any contact. Such disruption is potentially consistent with the increasing chaos of global governance and its leadership (*Surreal nature of current global governance as experienced*, 2016).

Indicative clarification of human use of animals

The following table is a tentative attempt to cluster human uses of animals (columns) in terms of a rough indication of the species concerned (rows). The clustering of species, and those detailed, could clearly be much refined.

Indicative summary of human use of animals (tentative)									
Non-human animals		Experiment Testing	Consumption By-products	Transport Work/War	Recreation Sport	Companion Pets/Display	Zoos Circuses	Trophy Hunting	Sacrifice Ritual
Quadrupeds (domestic)	cattle	Y	Y	Y	Y	?	N		Y
	horses	Y	Y	Y	Y	Y	Y		
	sheep	Y	Y			?	N		Y
	goats	Y	Y	Y		?	N		Y
	guinea pigs	Y	?			Y	N		
	pigs (mini)	Y	Y			Y	N		Y
	rabbits, hare	Y	Y		Y	Y	N		
	cats	Y	N			Y	N		
	camels				Y		Y		
	dogs	Y	?	Y	Y	Y	N		
	other								
Quadrupeds (semi-wild)	primates	Y	?		?	?	Y	Y	
	monkeys	Y	?		?	?		?	
	bison			Y				Y	
	tigers, lions						Y	Y	
	elephant			Y			Y	Y	
	deer		Y	Y				Y	
	rats, mice, gerbils	Y				?			
	hamsters	Y	?			Y			
	ferrets	Y	N						
	bats	Y	N						
	other								
Birds (domestic)	chickens		Y						Y

	ducks, geese		Y					
Birds (semi-wild)	pigeon	Y		Y		Y		
	partridge, grouse		Y		Y			Y
	eagles, falcons				Y			
	other							
Water-dwelling	whale		Y					
	dolphin			Y				
	herring		Y					
	tuna		Y		Y			
	salmon		Y		Y			
	cod		Y					
	frogs	Y						
	other							
Invertebrates	crustacea							
	octopus							
	crabs, lobsters		Y					
	other							
Insectoid	flies							
	butterflies							
	spiders							
	cockroaches							
	ants							
	other							

Distinguishing the animals to be included in such a table is notably a concern of the American Anti-Vivisection Society (*Which Animals are Used*). It is especially valuable for its critical commentary on the annual reports of the US Department of Agriculture *Research Facility Annual Reports*. With respect to the 2017 report, for example: Twenty-two percent of all regulated animals used in labs are guinea pigs, by far the most used animal in research and testing, followed by rabbits (17%) and hamsters (11%). Since 2016, the numbers of dogs in labs increased 12%, rabbits over 16%, and sheep 19%. Additionally, nearly 20% of all animals held in labs fall into either the "all other covered species" category, like gerbils, bats, ferrets, and chinchillas or the "Other Farm Animals," like goats and horses.

Only animals covered by the Animal Welfare Act (AWA) are however included in such reports. Since fish and rats, mice, and birds, bred for research, do not fall under the umbrella of the AWA, laboratories are not required to count them. It has been estimated that they comprise 93 percent of all animals in labs. Unlike the U.S., the European Union and Canada provide regulatory and legal protection for these animals. (*The USDA's removal of information about animal research is a step backwards for transparency, Speaking of Research*).

Naturally it is appropriate to assume that any extraterrestrial inquiry would require far greater detail -- if this had not already been obtained by other means.

Although seemingly unrelated to direct human treatment of non-human species (as indicated in the table above), ETs would clearly be especially concerned with evidence of the massive extinction of species associated with human activity. Known as the **Anthropocene extinction** (or the sixth mass extinction), this includes extinctions spanning numerous families of plants and animals, including mammals, birds, reptiles, amphibians, fishes and invertebrates. The 2019 *Global Assessment Report on Biodiversity and Ecosystem Services*, published by the **United Nations' Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services**, posits that roughly one million species of plants and animals face extinction within decades as the result of human actions.

There is every possibility that extraterrestrials may consider the distinction made between humans and non-human animals as arbitrary -- simply contrived for human convenience, namely an exercise in "conceptual gerrymandering". From that perspective the **environmental stress** engendering massive extinction of animals may be readily interpreted by ETs as an extension of **structural violence**. As articulated by **Johan Galtung**, this refers to a form of violence wherein some social structure or social institution may harm people by preventing them from meeting their basic needs (*Violence, Peace, and Peace Research, Journal of Peace Research*, 6, 1969, 3).

The relevance of structural violence to animals has been considered by various authors (Erika Cudworth, *Killing Animals: sociology, species relations and institutionalized violence, The Sociological Review*, 1 February 2015; Kathryn Asher, *Unpatients: the structural violence of animals in medical education, FAanalytics*, 8 November 2013; Amy Liszt, *Animal Liberation as a Valid Response to Structural Violence, Between the Species*, Fall 1990).

Faced with the global threat of a pandemic to human civilization, ETs are likely to find it strange that humans are required by their authorities to cower behind the range of species used for vaccine testing -- conscripted as they are for front line action in the war against the coronavirus virus. Humans of future generations may themselves find it cowardly in the extreme that those of the present time should shelter behind mice, rates and rabbits -- exposed as they are to the mortal danger of front line action in order to safeguard human lives.

Human deep cultural memory of universal associations?

There is a faint possibility that humans have an unrecognized relation to the universe which surrounds them -- suggested by the manner in which humans have related to the stars and constellations over millennia, and the process of naming those features. This may well have been reinforced by the elaboration of memorable mythical tales, as suggested to a remarkable degree by the argument of **Joseph**

Campbell (*The Inner Reaches of Outer Space: myth as metaphor and as religion*, 1986), or perhaps as anticipated by Henryk Skolimowski (*The Participatory Mind: a new theory of knowledge and of the universe*, 1994).

Deprecation by mainstream science of this possibility ignores the discoveries which scientists of the future may make -- given the millennia of human creativity which could be usefully imagined. The explanatory closure implied by any hypothetical [Theory of Everything](#) of physics may be obliged to adapt to such development.

There is therefore a case for recognizing how the named features of the universe "translate" into the names of the species of animals which are the concern of this argument. A set of [88 constellations](#) has been designated by the International Astronomical Union (IAU). Arguably half of these can be related to animals, as indicated below. Given the clarification above, these merit comparison with animals with which humans have a particular relationship -- as suggested by the right-and column below.

As noted by *Wikipedia* with respect to [Chinese constellations](#), traditional Chinese astronomy has a system of dividing the celestial sphere into [asterisms](#) or [constellations](#), known as "officials". These are generally smaller than the constellations of Hellenistic tradition, as now recognized by the IAU. One articulation presents a total of 283 asterisms, comprising a total of 1,565 individual stars. Specific correspondences to the IAU articulation are given in the *Wikipedia* summary, including those to the 336 star names in the current [List of IAU-approved Star Names \(Lists of stars by constellation\)](#).

The correspondences shown are of course purely indicative, notably highlighting questions about the crude clustering of the animals and whether those animals not mentioned might be appropriately related to the significance of constellations otherwise understood.

Of particular relevance to this argument are the culturally significant associations offered by the extensive set of myths and tales associated with both constellations and many stars.

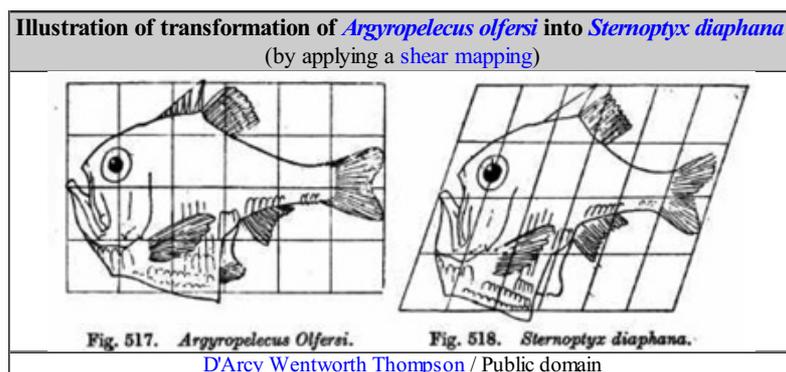
Correspondence between constellations and animal species (rough clustering of species)			
	Constellations / Nebulae	Corresponding animal species	Questionable treatment by humans?
Birds	Apus	Bird of Paradise	Symbolic misappropriation?
	Aquila / Eagle Nebula	Eagle	Symbolic misappropriation?
	Columba	Dove (Pigeon)	Symbolic misappropriation? / Racing / Warfare / Consumption
	Corvus	Raven	
	Cygnus	Swan	Symbolic misappropriation?
	Grus	Crane	Symbolic misappropriation?
	Pavo	Peacock	Symbolic misappropriation?
	Tucana	Toucan	
	Owl Nebula / Southern Owl Nebula	Owl	
	Quadrupeds	Capricornus / Aries	Goat / Ram
Camelopardalis		Giraffe	Zoo / Circuses
Canis Major / Canis Minor / Canes Venatici		Dog	Animal testing / Blood sports
Leo / Leo Minor		Lion	Zoo / Circuses / Trophy hunting
Equuleus / Dark Horse Nebula		Horse	Work horse / War horse
Lepus		Hare / Rabbit	Consumption / Pest
Lupus		Wolf	Threat / Pest / Trophy hunting
Lynx		Lynx	Threat / Trophy hunting
Taurus		Bull	Consumption / Bullfighting
Ursa Major / Ursa Minor		Bear	Zoo / Circuses / Trophy hunting
Vulpecula		Fox	Pest / Recreational hunting
Water-dwellers		Cetus	Whale
	Delphinus	Dolphin	
	Pisces / Dorado / Piscis Austrinus / Volans	Fish	Consumption
	Stingray Nebula	Stingray	Threat
	Manatee Nebula	Manatee	Zoo
	Jellyfish Nebula		Threat
Crustacea	Cancer / Crab Nebula	Crab	Consumption
	Oyster Nebula		Consumption
Reptiles	Chamaeleon	Chamaeleon	Zoo
	Hydra / Hydrus / Serpens / Snake Nebula	Snake	Threat / Pest
	Lacerta	Lizard	Zoo
Insectoid	Musca	Fly	Animal testing / Threat / Pest
	Scorpius	Scorpion	Zoo
	Tarantula Nebula / Red Spider Nebula	Spider	Threat / Pest
	Butterfly Nebula	Butterfly	
	Ant Nebula	Ant	

Mythical	Centaurus	Centaur	
	Draco	Dragon	
	Monoceros	Unicom	
	Pegasus	Winged Horse	
	Phoenix	Firebird	

Potential universal inquiry into human treatment of other species

The following argument is necessarily purely speculative. It invites development through speculative media presentations, as has been done with *Avatar* and other movies. Movies of that kind have relished the depiction of extraterrestrials of every form -- with an emphasis on the humanoid. Poetic justice on a universal scale would however be better served if any contact was undertaken by extraterrestrials of a form corresponding to that with which humans were especially familiar.

Morphological transformation: The possibility can be argued most effectively in the light of the illustrations famously presented by [D'Arcy Wentworth Thompson](#) regarding the relationship between forms of animals (*On Growth and Form*, 1917/1942). Those below indicate the possibility that proportional increase or decreases along particular dimensions -- through some radical analogue of shear mapping -- might characterize the extraterrestrials who may choose to contact humans.



In the light of such possibilities, members of the ET commission might prove to be especially skilled in shapeshifting -- far beyond the skills of humans in changing facial expression and bodily appearance. However, rather than being limited to the physical traits, as illustrated above by D'Arcy Thompson, the morphological transformations might apply to a greater degree to cognitive skills, as might be envisaged with respect to humans (*Resonance: enacting the world through shapeshifting*, 2011; *Insights into shapeshifting from collective behaviour*, 2003)

The possibility of any sense of ET identity being fundamentally associated with morphological transformation and resonance, suggest that human understanding of their existence (especially in collective terms) might be usefully informed by the highly controversial insights of [Ruper Sheldrake](#) regarding *morphic resonance* (*The Presence of the Past: morphic resonance and the habits of nature*, 2011). Ironically these are dismissed by those forms of science of pseudo-relevance to the current human condition.

Distributed intelligence: In contrast to the conclusions of human science that intelligence is dependent on the size of the brain -- thereby confirming superiority from a human perspective -- intelligence might be manifested otherwise in extraterrestrials. In the case of ETs, cognitive functions might be extended to a higher degree into the manner in which intelligent behaviour is manifested (*En-minding the Extended Body: Enactive engagement in conceptual shapeshifting and deep ecology*, 2003).

Functions localized in the brain in humans might consequently be distributed throughout the physical form to a far higher degree -- and variously enhanced by external technology (as anticipated in the case of AI support of human intelligence). Emerging human understanding of *distributed intelligence* and *collective intelligence*, most obviously within teams, may well have been developed to a far higher degree by ETs.

Given the potential sophistication of discourse between ETs -- and its challenge for humans -- the issue may be how meaning is cognitively "embodied" by contrasting forms, as suggested by the arguments of [George Lakoff](#) and [Mark Johnson](#) (*Philosophy In The Flesh: the embodied mind and its challenge to Western thought*, 1999). In the light of the meaning associated by many with sport and dance, of further relevance is the subsequent work on the cognitive implications of movement (Mark Johnson, *The Meaning of the Body: aesthetics of human understanding*, 2007; [Maxine Sheets-Johnstone](#), *The Primacy of Movement*, 2011).

Also of relevance is the questionable nature of the particular human assumptions regarding "hegemony" and "dominion", especially as qualified by religious interpretations (*Embodying Global Hegemony through a Sustaining Pattern of Discourse: cognitive challenge of dominion over all one surveys*, 2015). Clearly ETs could be expected to understand hegemony and dominion quite otherwise -- given a universal perspective contrasting with the human military presumption regarding so-called "full-spectrum dominance".

Form and operation of a commission of ETs? It is in this light that it is appropriate to speculate on the composition of a commission embodying universal justice in the initial contact of extraterrestrials with humans. The possibility of a commission composed of the forms identified in the following section therefore merits consideration -- especially in the light of their preoccupations with respect to human consumption of animals or animal testing.

Of particular relevance is the question of how any human understanding of "commission of inquiry", "justice", or any "mitigating circumstances" relating to "development" might be understood otherwise in a universal context -- and perhaps radically so. Assumptions

that these might bear some simple resemblance to the Nuremberg military tribunals, or to the procedures of the Spanish Inquisition, may well be totally misplaced. The possibility of an aesthetic emphasis on dance, music or poetry merits consideration -- if a high degree of morphological transformation is to be anticipated.

Arguably the credibility attributed to religious traditions of judgement in the afterlife suggests a degree of intuitive comprehension of dimensions of the judicial process on the [Judgement Day](#), in the ancient Egyptian *Book of the Dead* or the *Bardo Thodol* of Tibetan tradition.

Insights from science fiction: Possibilities which have been explored to a degree in science fiction include:

- an unexpected priority given to aesthetic qualities -- of which human reference to poetic justice is an indication. Possibilities can be explored through speculation on the nature of human governance in the distant future, potentially embodying forms of dance, opera and music and even extending to synaesthesia (*Aesthetics of Governance in the Year 2490*, 1990).
- an unexpected emphasis on forms of game-playing deemed most appropriate to such interaction, notably highlighted in Swedish culture (*The Seventh Seal*; *Death playing chess*). The appropriateness could be inferred from the manner in which various forms of negotiation and dialogue are increasingly recognized as implying a degree of game-playing, most obviously in war gaming. Aspects could be said to have been intuitively recognized in the magnum opus of Nobel laureate [Hermann Hesse](#) (*The Glass Bead Game*, 1943)
- heightened sensitivity, potentially combined with despair, at the limited capacity of humanity to respond fruitfully and sustainably to any such encounter, as described by [Doris Lessing](#) in a devastating commentary on communication of insight by a galactic agent with a representative of those facing planetary disaster (*Re: Colonised Planet 5 - Shikasta*, 1979):

To say that he understood what went on was true. To say that he did not understand -- was true. I would sit and explain, over and over again. He listened, his eyes fixed on my face, his lips moving as he repeated to himself what I was saying. He would nod: yes, he had grasped it. But a few minutes later, when I might be saying something of the same kind, he was uncomfortable, threatened.

Why was I saying that? and that? his troubled eyes asked of my face: What did I mean? His questions at such moments were as if I had never taught him anything at all. He was like one drugged or in shock.

Yet it seemed that he did absorb information for sometimes he would talk as if from a basis of shared knowledge: it was as if a part of him knew and remembered all I told him, but other parts had not heard a word. I have never before or since had so strongly that experience of being with a person and knowing that all the time there was certainly a part of that person in contact with you, something real and alive and listening -- and yet most of the time what one said did not reach that silent and invisible being, and what he said was not often said by the real part of him. It was as if someone stood there bound and gagged while an inferior impersonator spoke for him. (pp. 56-57).

Be done by as you did? Ironically, as noted above, the posture of the ETs might emphasize to an unexpected degree (and as a matter of principle) a fundamental respect for the patterns of human behaviour and policy which have prevailed in asymmetric exchanges between human civilizations, most obviously with indigenous cultures. This posture might be described in human terms under the Golden Rule: *Do as you would be done by*.

As formulated by [Charles Kingsley](#), a more challenging complementary adage takes the form of: *Be done by as you did* (*The Water Babies*, 1863). This is widely cited as a pattern of behaviour toward others determined by how they themselves behaved towards others -- effectively making sure that their actions came back to cause them instructive suffering, until they gradually learnt the golden rule of civilization: *if you don't like it yourself, then best not do it to someone else* (Mary Wakefield, *What 'The Water Babies' can teach us about personal morality*, *The Independent*, 26 December 2009).

The obligation to follow such practice may be deemed necessarily fundamental by ETs, as previously argued (*Writing Guidelines for Future Occupation of Earth by Extraterrestrials*, 2010).

ET frameworks challenging to human expectation: Science fiction has of course envisaged scenarios in which the ETs might be otherwise than as they might claim or be perceived, as exemplified by the following (especially in the light of human criminal and unethical behaviour):

- pretension to universal authority -- for which no credible proof can be provided
- pretension to benign concern -- in anticipation of profiting from the encounter in ways which may only become apparent too late
- a sense of relative status between ETs and humans -- recalling the behaviours in imperial courts of the past
- an invitation to trust -- where "trust" may be understood quite otherwise, as in confidence trickery
- an approach to dialogue in which the fundamental issue is implied rather than clarified explicitly -- recalling the "friendly" understanding framing a racketeering process
- a sense of time in total contrast to the pace considered appropriate by humans in making contact with such profound implications for humanity. Ironically this might follow from the [7th Generation Principle](#) embodied in the founding document of the Iroquois Confederacy (the oldest living participatory democracy on Earth) regarding the impact of decisions on future generations (*Seven generation sustainability*). ETs might however adopt a retroactive perspective, as highlighted in Biblical arguments regarding the visitation of the sins of the fathers -- even unto seven generations, as clarified by John Piper (*Does God "Visit the Sins of the Fathers on the Children"? Getting Serious about Education for Exultation*).
- an assumption of proprietary rights on the part of ETs, calling into question any claims by humans. This would follow the framing of Australia as *terra nullius* -- now replicated with respect to the Moon and other planets of the solar system (*Extraterrestrial real estate; Artemis Accords: why many countries are refusing to sign Moon exploration agreement*, *The Conversation*, 19 October

2020).

- a shared belief system of an extremely radical nature on the part of ETs, namely one completely incomprehensible to humanity. This would of course recall the challenge faced by indigenous peoples encountering imperial colonisers
- a preoccupation with exploitation of human labour -- recalling the colonial focus on the slave trade. This possibility has been speculatively envisaged (*Galactic Memo on Rapture Readiness*, 2005)

Ensuring recovery of a form of cosmic debt?

Public debt: Over the decades of the past century humanity has adopted practices whereby nations borrow financially, most notably from each other -- thereby incurring **debts** on which interest is paid, in anticipation of some process of **debt recovery**. **Public indebtedness** of this kind is measured in trillions of dollars and as a percentage of GDP (*List of countries by public debt*; *List of countries by future gross government debt*).

The Economist offers an interactive *World Debt Comparison: the global debt clock*. An update of the IMF's *Global Debt Database* shows that total global debt (public plus private) reached US\$188 trillion at the end of 2018, up by US\$3 trillion when compared to 2017. The global average debt-to-GDP ratio (weighted by each country's GDP) edged up to 226 percent in 2018. Jeff Desjardins, *\$69 Trillion of World Debt in One Infographic*, *Visual Capitalist*, 14 November 2019)

Indebtedness between species: The obligation to borrow may well be experienced as a pain by governments -- accompanied by an erosion of confidence and trust. There is every possibility that an analogous pattern may obtain among the universe of species. However rather than borrowing being understood in the financial terms so familiar to humans, **ETs may have evolved an understanding of indebtedness between species of a far more radical and fundamental nature**. In this sense species may indeed freely borrow from each other on any world -- each species exploiting the vulnerability of other species however they deem possible and appropriate.

In this regard, the preoccupation of the ET judicial inquiry can be understood as focused on the 10 to 100 million animals used in animal testing each year, and the ever increasing use of certain species for human consumption. The conditions of those animals bred for such purposes in intensive farming installations, as well as their experience during transportation and in slaughterhouses, is necessarily a particular focus. Comprehension of the ET concern can be usefully compared with human horror of the treatment of people in concentration camps and labour camps. Ironic human denial of the relevance of such ET concern is also comparable with attitudes to denial of the existence of camps.

In particular this may be determined quantitatively in terms of the pain caused by one species to another -- as understood and experienced by the formal analogues to each species throughout the universe. This perspective assumes, following the morphological illustration of D'Arcy Thompson above, that location in the universe determines the relative dominance of one species relative to another. Thus the ET commission of inquiry may effectively include a form of chicken from a region in which it is the chickens who are dominant -- thereby enabling them to "borrow" from humans whom they have the habit of consuming.

Across the universe, **each biological form thereby has the potential of becoming "indebted" to every other form**. The issue preoccupying the ET commission of inquiry may therefore be better understood as the relative degree of indebtedness of humanoids to other species and how debt recovery is to be ensured. In the human financial context, this is a function of the [Bank for International Settlements](#). The delegation of ETs might therefore bear comparison to a group of bankers -- but one for which the currency of concern is a deeper understanding of interspecies pain.

The encounter of the chicken emissary with the chicken population on Earth, to take that example, is therefore of great potential significance in terms of this process and the procedures of the commission. Clearly that emissary is effectively an extreme -- an "elder" -- in the morphological transformation of that form, and necessarily constrained in the capacity to communicate meaningfully with those scheduled for human consumption in intensive farms. A degree of equivalence is to be recognized in the limited capacity of a human elder encountering other humans in urban slums, concentration camps, or similar facilities.

Dukkha and pain: On Earth the issue of how pain is to be measured is a matter of controversy. It is readily asserted that animals have no sensitivity to pain that is of any particular concern to humans causing it. This view may indeed be justified by scriptures implying that humans have a right to cause any pain necessary for their nourishment and survival. This perspective is extended to conflict between humans according to [just war theory](#) using arguments adapted to the process of inquisition -- perhaps to be recognized as "just torture theory". Variants of such arguments are applied to those suffering from painful illness and then to withhold any form of euthanasia.

A major effort to determine levels of pain -- as incurred by humans -- is that of [Ralph Siu](#) through the [International Society for Panetics](#) (*Panetics and Dukkha: an integrated study of the infliction of suffering and the reduction of infliction*, 1994; *Less Suffering for Everybody: an introduction to panetics*, 1994).

For the panetics community, the *dukkha* is a measure of the intensity and duration of pain and anguish adapted from the 9-point hedonic scale used to provide subjective judgements in market research. A "megadukkha" represents the order of magnitude of suffering sustained by 1,000 persons for about 10 hours a day, for a year, with severe stomach ulcers and without medication. The approach has been explored further by [Johan Galtung](#) (*Panetics and the Practice of Peace and Development*, 1999).

The reference to *dukkha* recognizes a more complex understanding of pain. Found in ancient Indian literature, it is indicative of anything that is "uneasy, uncomfortable, unpleasant, difficult, causing pain or sadness". It is also a concept in Indian religions about the nature of life that innately includes the "unpleasant", "suffering", "pain", "sorrow", "distress", "grief" or "misery".

There is little comparable effort to extend the understanding of *dukkha* to animals -- although the principle is accepted. However it could be readily argued that some of the descriptors of *dukkha* are clearly of relevance to the experience of animals as treated by humans. Arguably ETs would have an especially clear understanding of some such concept as being the basis for the transactions between

species across the universe.

Dignity: Of particular relevance would be any universal insight into dignity -- so obviously evident in the lack of respect in many forms of human treatment of animals:

- Eva Berner Kempers: *Animal Dignity and the Law: potential, problems and possible implications* (*Liverpool Law Review*, 41, 2020)
- Gieri Bolliger: *Legal Protection of Animal Dignity in Switzerland: Status Quo and Future Perspectives*. (Schulthesis zum Tier im Recht, 2016)
- Taimie L. Bryant:
 - *Animals Unmodified: Defining Animals/Defining Human Obligations to Animals* (*University of Chicago Legal Forum*, 2006, 1)
 - *Similarity or Difference as a Basis for Justice: must animals be like humans to be legally protected from humans?* (*Law and Contemporary Problems*, 70, 2007).
- Samuel Camenzind: *Dignity of Creature: beyond suffering and further* (*The Ethics of Consumption: The Citizen, The Market and the Law*, 2013)
- Suzanne Laba Cataldi: *Animals and the Concept of Dignity: reflections on a circus performance* (*Ethics and the Environment*, 7, 2007)
- Robert Heeger: *Dignity Only for Humans? A Controversy* (*The Cambridge Handbook of Human Dignity: Interdisciplinary Perspectives*, 2015)
- Dunja Jaber: *Human Dignity and the Dignity of Creatures* (*Journal of Agricultural and Environmental Ethics*, 13, 2000) .
- Federico Zuolo: *Dignity and Animals: does it make sense to apply the concept of dignity to all sentient beings?* *Ethical Theory and Moral Practice*, 19, 2016)
- Gavrell Ortiz and Sara Elizabeth: *Beyond Welfare: animal integrity, animal dignity, and genetic engineering* (*Ethics and the Environment*, 9, 2004):.

Such concerns clearly merit consideration in a universal context where it is humans who may have the status of "animals" in some constellations (as envisaged above).

Extraterrestrial inquisition of humans as panpsychism in practice

The anticipation of some form of judicial inquiry into human activity by extraterrestrials, according to universal principles, is necessarily speculative. The existence of extraterrestrials continues to be a matter of controversy, irrespective of what is produced as evidence and the hypotheses in that regard.

There is of course an argument that, as imagined, extraterrestrials are entirely "anthropogenic" -- together with the judgement any contact might then imply. This perspective can be associated with the manner whereby multitudes of "aliens" are now engendered by psychosocial processes of "alienation". Ironically they effectively become "terrestrial extras". In the terminology of drama **extras** are performers who appear in a nonspeaking, nonsinging, or nondancing capacity, usually in the background. The nature of their "judgement" has yet to become apparent.

Panpsychism: The speculative argument acquires a greater degree of credibility in the light of the articulation of **panpsychism** in its various forms by a surprisingly extensive range of thinkers over a long period. According to this understanding, mind or a mind-like aspect is a fundamental and ubiquitous feature of reality. It is also described as a theory that "the mind is a fundamental feature of the world which exists throughout the universe". It is one of the oldest philosophical theories, and has been ascribed to philosophers including **Thales, Plato, Spinoza, Leibniz, William James, Alfred North Whitehead, Bertrand Russell,** and **Galen Strawson**.

It is however intriguing to note that relatively little is said about the existence of extraterrestrials in relation to panpsychism. The explanations of panpsychism tend to be very general in their arguments to the point that the reality of extraterrestrials would be a mere detail that in no way conflicted with the principles it explores. The existence of intelligent aliens would merely serve to confirm that understanding.

The speculative argument above does however suggest one possibility for the interaction between species throughout the universe. This does not evoke the manner in which it might apply to non-biological forms of life -- as the less restrictive forms of panpsychism envisage. **Most obviously missing from the argument focusing on "animals" is how it might be extended to "plants" and other forms of life** -- and how this might affect the composition of an ET inquisition of humans, especially given the massive destruction of plants on Earth by humans.

Quantum mind: Panpsychism is a philosophy appreciated primarily for its elegance, and readily ignored for that reason. Emerging interest in **quantum mind** and the challenges of quantum mechanics suggest the possibility of a credible underpinning for the philosophy from a natural science perspective, as variously explored:

- David Skrbina: *Panpsychism in the West* (*Quantum Mind*, 2013)
- Jed Stamas: *The Quantum Mind: panpsychism, physics, and consciousness* (*SlideShare*, 2010)
- Chris H Hardy: *Nonlocal Consciousness in the Universe: panpsychism, psi and mind over matter in hyperdimensional physics* (*Journal of Nonlocality*, 5, 2017, 1)
- Harald Atmanspacher: *Quantum Approaches to Consciousness* (*Stanford Encyclopedia of Philosophy*, 2020)
- Philip Goff: *Panpsychism is crazy, but it's also most probably true* (*Aeon*, 1 March 2017)
- Carlos Eduardo Maldonado: *Quantum Physics and Consciousness: a (strong) defense of panpsychism* (*SciELO*, November 2018)

Of particular value in clarifying the possibility is the detailed argument of **Alexander Wendt** (*Quantum Mind and Social Science: unifying*

physical and social ontology, 2015). This suggests that there may indeed be possibilities of engaging "otherwise" with "otherness" -- if only in the future (*Encountering Otherness as a Waveform -- in the light of a wave theory of being*, 2013).

The most recent thinking in this regard from the perspective argues that neither individuals nor the surrounding world are real, as summarized by Paul Ratner:

The scientists link their hypothesis to *panpsychism*, which sees everything as thought or consciousness. The authors think that their "panpsychic self-simulation model" can even explain the origin of an overarching *panconsciousness* at the foundational level of the simulations, which "self-actualizes itself in a strange loop via self-simulation". This panconsciousness also has free will and its various nested levels essentially have the ability to select what code to actualize, while making syntax choices. The goal of this consciousness? To generate meaning or information. (*New Hypothesis Argues the Universe Simulates itself into Existence*, *Big Think*, 26 April, 2020)

Specifically, the paper in question from the [Quantum Gravity Research](#) institute argues:

We modify the [simulation hypothesis](#) to a self-simulation hypothesis, where the physical universe, as a strange loop, is a mental self-simulation that might exist as one of a broad class of possible code theoretic quantum gravity models of reality obeying the principle of efficient language axiom. This leads to ontological interpretations about quantum mechanics. We also discuss some implications of the self-simulation hypothesis such as an informational arrow of time. (Klee Irwin, Marcelo Amaral and David Chester (*The Self-Simulation Hypothesis Interpretation of Quantum Mechanics*, *Entropy*, 22, 2020, 2)

Epiterrestrial vs Extraterrestrial? Any emphasis on a wave-based comprehension of the existence of extraterrestrials helps to frame the quite distinct possibility that ETs have already established contact with humanity to the point of coexisting with humans on Earth. This is of course one focus of popular speculation. However the manner of this coexistence invites quite distinct consideration, as explored separately (*Sensing Epiterrestrial Intelligence (SETI): embedding of "extraterrestrials" in episystemic dynamics?* 2013). This included the following sections:

Indicative prefixes: contrasting "epi" with "extra"	Comparison of "epi" with other potentially indicative prefixes
Searching otherwise for "epiterrestrials"	Potential insights from an "episystemic" perspective
Implications of category theory for social networking and interrelationships	Re-cognizing "supernatural": superstition as superposition?
Dynamic insensitivity of the natural sciences	Embodiment of extended intelligent identity in time
Phenomenological implications of "fundierung" for "epi-thinking"	Correspondences: "epi", Euler identity, and sexual dynamics?
Clues to the nature of "epiterrestrials" from usage of the "epi" prefix?	Re-cognizing "human" in an "epiterrestrial" context

Possibilities of this kind offer the sense in which the wave functions of species over which humans claim dominance may be associated in unexpected ways with the manifestation of those species elsewhere -- associated there, however, with wave functions by which they are dominant with respect to humans.

Somewhat ironically with respect to any judicial inquisition by extraterrestrials, the species on Earth over which humans claim dominance could then be understood as ["putting humans to the question"](#) on behalf of ETs, thereby reversing the dubious tradition of the torturers of the Spanish Inquisition and their modern counterparts. The "question" is then in the eyes of the animals being tested -- or otherwise deliberately maltreated.

Correspondence of the dimension of dignity-dukkha with profit-loss?

Profit: The human preoccupation with the dimension of profit-versus-loss has engendered widespread familiarity with its significance in economic and financial terms, especially in the West. However there is every possibility that the future may understand this to be only a specific instance of a more general phenomenon -- already suggested by a degree of preoccupation with positive-versus-negative.

It could be usefully assumed that ETs would already have clarified this understanding to include qualitative considerations. The correspondence with dignity-versus-*dukkha* might then prove to be another instance, but potentially more fundamental than profit-versus-loss. The extent to which financial "loss" is experienced and described in terms of "pain" is suggestive in this respect.

Karma: It is of course the case that for many humans the qualitative sense is evident to an extensive degree in the Eastern understanding of [karma](#) as a spiritual principle of cause and effect. The intent and actions of an individual (cause) are then understood to influence the future of that individual (effect). The philosophy of karma is closely associated with the idea of rebirth in many Eastern religions -- and especially with the form and quality of any such reincarnation.

There is of course much popular speculation as to how karma works, expressed most succinctly in the form of *"what goes around, comes around"* or *"as you sow, so shall you reap"*, as for example:

- Judith Johnson: *What Is Karma and How Does it Work?* (*HuffPost*, 26 May 2012)
- Dave Roos: *How Does Karma Really Work?* (*HowStuffWorks*, 1 April 2019)

The speculative argument above offers indications as to how karma might "work" in a panpsychic universe -- notably one populated by extraterrestrials mindfully embodying the process of its operation.

The human understanding of karma focuses on [reincarnation](#) on Earth, possibly in some other form. This may be associated with intuitions regarding a variety of appropriate "realms" -- "heavens" and "hells". With the increasing acknowledgement of the multidimensionality of the universe and of reality, these intuitions could be recognized as characteristic of reincarnation into forms in other locations -- potentially indicated by the constellations with which the ETs may be variously associated.

Merit: Less evident from that argument is the only too problematic consequence of the human focus on the accumulation of "profit" -- given any implied correspondence with an accumulation of "dignity". This is recognized to some degree in the preoccupation in some religious traditions with the accumulation of merit -- as it might be recognized in an afterlife.

This is explicitly evident in the [Buddhist understanding of merit](#) and its accumulation, as a condition for enlightenment (Khenpo Tsultrim Gyatso Rinpoche, *Accumulating Merit*, 2000; Phrabhavanaviriyakhun, *Buddhist Economics, Urban Dharma*).

Challenge of dialogue on justice with extraterrestrials

Light: Given the fundamental role that is played by light in comprehension of the universe, there is every possibility that ETs may understand its nature in a radically distinctive manner. This could well be one which addresses what is currently termed the [hard problem of consciousness](#), namely the problem of explaining why and how humans have [qualia](#) or [phenomenal](#) experiences.

For Buddhism the final challenge is how to treat pleasure and pain, gain and loss alike. This is termed "[Samadhi](#)" -- equal mindedness -- namely the ability to look upon light and darkness, pleasure and pain, profit and loss, fame and censure with an equal mind, otherwise understood as a [luminous mind](#). Hence the many references to enlightenment -- although paradoxically contrasted with endarkenment (*Enlightening Endarkenment: selected web resources on the challenge to comprehension*, 2005).

End state: dynamic vs static? The dynamics of the universe and the occurrence of life in it offer a degree of challenge to any understanding of justice and finality -- if it is in such terms that Samadhi is to be understood (*Comprehension of Unity as a Paradoxical Dynamic*, 2020). The diversity of manifestation would appear to suggest a learning dynamic in which the cognitive engagement with other forms of life is fundamental -- whether ETs or otherwise, as separately explored (*Life-skill Learning from Animal Shareholders and Collaborators: cognitive opportunity for engaging radically with a complex world in crisis*, 2014). The latter includes discussion of:

Clues to cognitive possibilities of "being an animal"	Implication of embodiment of the human mind in
Varieties of animal behaviour of potential strategic value to humans	movement
	Implications of animal-inspired proprioception and knowledge management?

Dialogue informed by mathematics? There are many references to mathematics as being the basis for effective communication with extraterrestrials. This assumption influenced the design of the [Pioneer plaques](#) on the 1972 and 1973 placed on spacecraft in case they were intercepted by intelligent extraterrestrial life. It is assumed that mathematically elaborated codes would be basic to any radio contact.

The assumption is especially relevant to comprehension of justice as it might be understood by ETs, given the binary emphasis on right-or-wrong so fundamental to human justice. Of potentially greater relevance to any ET inquisition of humans are the extended notions of logic. Rather than the oversimplification of binary logic, 16 different logical connectives of two statements -- corresponding to 16 binary truth tables. Not all of them are in common use. Identified by symbols, these are called "truth-functional connectives", "logical connectives", "logical operators", or "propositional operators".

The implications are in process of articulation through so-called oppositional logic as depicted through [oppositional geometry](#) (*Oppositional Logic as Comprehensible Key to Sustainable Democracy: configuring patterns of anti-otherness*, 2018). Whether ETs with a focus on justice subscribe especially to this pattern, or to a more general set of patterns (of which this is but an instance), would necessarily be significant to any fruitful dialogue with humans -- especially for those convinced of their innocence. Possibilities are evident in the arguments of Fabien Schang in proposing a general Logic of Acceptance and Rejection (*Agreeing about Disagreement; Abstract logic of oppositions, Logic and Logical Philosophy*, 21, 2012; *International disagreements*, 2014; *Logic in Opposition, Studia Humana*, 2013).

Morphing between patterns? The challenge could also be framed in terms of the seminal *Laws of Form* (1969) of G. Spencer-Brown. Its essential feature is a mark symbolic of the root of cognition, indicating the capability of differentiating a "this" from "everything else but this". Of similar relevance is the study by Christopher Alexander of the process of inventing things which display new physical order, organization, form, in response to function (*Notes on the Synthesis of Form*, 1966) -- leading to his subsequent work on [pattern language](#) and the nature of order (*The Nature of Order: an essay on the art of building and the nature of the universe*, 2002–2004).

In the light of the speculative argument above regarding the fundamental role of morphing in a universal context, similarly relevant would be the arguments of René Thom (*Structural Stability and Morphogenesis*, 1972; *Semio Physics: a sketch*, 1990) resulting in the development of [catastrophe theory](#). Understood in this light, both the disasters engendered by the human species, and the challenges to effective dialogue about them (potentially with ETs) could be fruitfully reframed.

The role of morphological transformation -- and cognitive shapeshifting -- could then be recognized as relevant to dialogue in a self-destructive ecosystem. This is evident to a degree in the strategic management texts to "think like" a particular species (D. Lynch and P. Kordis, *Strategy of the Dolphin: scoring a win in a chaotic world*, 1988; Caleb Stewart Rossiter, *The Turkey and the Eagle: the struggle for America's global role*, 2010).

Dialogue could be usefully understood metaphorically in the light of the situation explored by a number of science fiction authors, namely the problem of piloting or navigating a spacecraft through "hyperspace" or "sub-space", as imagined in the light of recent advances in

theoretical physics and mathematics. Because of the inherent complexity of such environments, several have explored the possibility that pilots and navigators might choose appropriate metaphors through which to perceive and order their task in relation to that complexity -- for example, flying like a bird, windsurfing, swimming like a fish, tunnelling like a mole, etc. Assisted by artificial intelligence, data is then channelled to the pilot in the form of appropriate sensory inputs to the nerve synapses corresponding to the pilot's "wings" or "fins". The pilot switches between metaphors according to the nature of the hyperspace terrain.

The requisite variety of species membership of any ET judicial commission would then reflect these contrasting logics, as implied by the more mundane examples of Edward de Bono (*Six Thinking Hats*, 1985; *Six Frames For Thinking About Information*, 2008). Given the size of a human jury, less evident is the number of species whose distinctive mode of cognition would be considered vital by ETs. From any perspective of cosmic justice, the highly developed assumption that only humans can be "right" -- and only particular humans -- is then clearly questionable, as explored by Edward de Bono (*Water Logic: the alternative to I am right You are Wrong*, 1993).

Metaphors in universal discourse: Given the argued composition of the ET commission, it is exceptionally curious to note the extent to which understandings of justice have been embodied by a wide variety of human cultures into tales and fables in which it is animals who clarify and exemplify the issues, most obviously Aesop's fables and the Jataka tales (*Exemplary fables of proportionate response*, 2006). The complementarity between the tales and the species essential to them is striking (*Complementary Patterns of Meaningful Truth and the Interface between Alternative Variants*, 2003).

From an ET perspective, would it be that complementarity which is fundamental to the universal principles of justice? This would contrast with the linear, metaphor typical of human justice as exemplifying balance and symbolized by a weighing scale (a "balance"). Together with "bottom line", that notion has been widely incorporated into spreadsheet accounting understood as "balancing the books" -- as distinct from other geometrical metaphors potentially more relevant to a global civilization (*Spherical Accounting: using geometry to embody developmental integrity*, 2004).

Given the four-dimensional geometry required in discussion of oppositional logic, polyhedra of various degrees of complexity might be considered more appropriate by ETs -- especially given the transformation pathways between them through morphing, as illustrated separately (*Pathway "route maps" of potential psychosocial transformation?* 2015). Is the simplicity of the preferred geometric metaphors of human finance, politics, justice and religion indicative of the cognitive constraints under which human governance operates (*Engaging with Globality -- through cognitive lines, circlets, crowns or holes*, 2009).

Extraterrestrial preference for apostasis and unsaying? There is a strong possibility that justice in a universal sense may approximate to a higher degree with qualities variously attributed by humanity to divinity. In human consideration of the nature of divinity, a distinction is commonly made in some traditions between *kataphatic theology* and *apophatic theology*, as separately discussed (*Being What You Want: problematic kataphatic identity vs. potential of apophatic identity?* 2008).

These are contrasting approaches to the essentially incomprehensible, even terrifying, nature of that reality (*Thinking in Terror: refocusing the interreligious challenge from "Thinking after Terror"*, 2005). The former describes and defines the nature of divinity through explicit terminology. The latter highlights the inadequacies of such statements by stressing what deity is not. Hence the latter is also described as negative theology and the former as positive theology (Michael A. Sells, *Mystical Languages of Unsaying*, 1994).

In that light, discourse with ETs regarding justice according to universal principles may prove to be primarily characterized by allusion and enigma -- as is evident to a degree in human tendencies in that respect (*Global Strategic Implications of the "Unsaid": from myth-making towards a "wisdom society"*, 2003). Cosmic justice for humanity may prove to be essentially "self-administered" and "self-inflicted" through the disasters humanity is so evidently engendering. There may be little that ETs then need to say.

Of course, if ETs have a sense of humour they might explain the lack of alien contact with humanity in terms of a strict 1.5 light-year cosmic distancing rule (*Humanity's Magic Number as 1.5?*, 2020; *Earth as a Shithole Planet -- from a Universal Perspective?* 2018).

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