

Article

Idealist Individualism or Indigenous Cosmology; Finding Entanglement across Species and Strata

Ruth Irwin 

Department of Education, RMIT University, Melbourne 3001, Australia; ruth.irwin@gmail.com

Abstract: Science and technology have been associated with modern Enlightenment, in a manner that elevated the rational mind over emotions and the body, a separation of the subjective mind from the object of observation, universal categories, objective observation, and linear causality. These assumptions, consolidated by Descartes and then Kant, have underpinned the philosophies of science, economics, policy, and political theory. They have shaped the modern world and enabled corporate freedom to exploit all ‘resources’ in the name of consumerism and global trade. Idealism has alienated subjective rationality from an idealised universal created world. In contrast, ancient indigenous ways of knowing are emerging as better exemplars of the interrelationship between individuals, communities, and organic and anorganic life forms. Celtic shapeshifters and praise poems forge an interwoven dance of geology, weather, plants, animals, and humanity with wisdom and politics. The Māori concept of *whakapapa* is the kin relations of everything, tied into complex claves as a taxonomy of familial ties. Animism was understood as pagan misidentification by modernity, but if the alienation set out by modern linear physics is severed, then the intra and inter-relationship of strata, atmosphere, ocean, and species are better relayed by indigenous philosophy than by outdated, colonial, modern assumptions. Celtic and Māori pantheism show us how entangled we are, and how special relationships are in place that last across generations.



Citation: Irwin, Ruth. 2022. Idealist Individualism or Indigenous Cosmology; Finding Entanglement across Species and Strata. *Religions* 13: 1193. <https://doi.org/10.3390/rel13121193>

Academic Editors: Gorazd Andrejc and Victoria Dos Santos

Received: 19 October 2022

Accepted: 30 November 2022

Published: 6 December 2022

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: idealism; Kant; descartes; indigenous philosophy; Māori; Celtic; posthumanism

1. Dualism and Pantheism

Multiple religions have the problem of dualism. My interest emerges from over 20 years of scholarship on climate change and the Humanities, investigating how and why modernity is so systemically entrenched in modes of thinking and behaving that produce pollution on a planetary scale. Enlightenment dualism seems to underpin the economic and policy doxa that has normalised fossil fuel production and continues to blindly ignore the correlation between economic growth and the growth in CO₂ emissions. My interest in pantheism emerged from a critique of Enlightenment ideas that alienate human subjectivity from other species, from ecology, and from each other. Nondualist pantheism provides another way of comprehending the nature of nature, of the world, and of social relationships that does not systemically involve alienation or pollution.

Enlightenment thinkers such as Descartes and Kant were influenced by Christianity in the 17th and 18th centuries. Christian monotheism is usually understood as the belief in or worship of a Creator God who predates the earth that He created. There is a dualism between the mundane, everyday world and the Prime Mover who invented it and who remains in a Heavenly plane, outside the boundary of history, time, and space. The perfection of the world is a reflection of the perfect God, and the rational order of cause and effect helps humanity understand how everything fits together.

Noncontradictory order is a very important component of the monotheistic comprehension of the world. The implications of this position, as I will endeavour to illustrate in this article, are the alienation of humanity, from other species and strata in the ecosystem, with economic and policy outcomes following from this position.

The dualism of Christian creationism can be contrasted with Māori and Celtic indigenous pantheism. Rather than a dualism between the real and the apparent, both Māori and Celtic pantheism regard all elements of the universe, organic and anorganic, as being animated by their own self-organising ‘life-force’ that are intricately connected, inter-related, with everything else. This is not the result of a ‘creator god’ but an evolving, changing, at times contradictory, enigmatic, paradoxical, and partial set of relations. There might be ‘one’ system where some natural laws (such as thermodynamics) apply, but it is not bound by simple laws of linear cause and effect. The relationships are much more complex than those. Thermodynamics for example, is the ‘law of nature’ that for every increase in order, there is also an increase in disorder. An immanent field of relations includes humanity, with the singular mode of apprehension proffered by the human brain—just as all other species have their own singular mode of apprehending the material world. That singularity does not alienate humanity from close quantum or kin relations with other species, genera, or strata. To further explain how this field of immanence might be conceived, I want to unpack the Idealism of Descartes and Kant and examine how it forged a particular type of alienated individual, with faith in an otherworldly God and his created world that is deducible through laws of logic and non-contradiction. There is plenty of contradiction to be found in empirical science, biology, and astrophysics. The cosmology of the Celts and Māori helps to conceive of humanity as being imbued in the animated landscape.

Each cultural practice is singular, and while exploring these ideas, I do not wish to smush them all together into some universal likenesses. Therefore, I am picking out two indigenous cosmologies; Celtic animism (I am of Irish descent) and Māori cosmology (I grew up in New Zealand) have forged my understanding of the world. The two are very distinct, yet they share a crucial and evocative language of liveliness in ‘natural’ forces that recognises and sustains a deep sense of interconnection. This is in sharp counter-distinction to monotheism and some types of pantheism, for example Buddhism, which has a limited recognition of the lifesense, residing only in ‘sentient’ or ‘emotional’ beings. For the Celts, for Māori, and indeed for the Ancient Greeks and Romans too, rivers and mountains, rocks, wind, the sun, moon, stars, trees, insects, fish, and all geological features, as well as all flora and fauna, are imbued with life force and personality. They are not an ‘appearance’ but are all intertwined with humans and society and demand regard and respect.

2. The Ravages of Colonialism

Celtic pantheistic animism seemed to present a profound threat to the emerging class system in Europe. The Catholic Church initiated witch hunts that killed or threatened thousands of people, especially women, throughout Europe, beginning in the 15th century. The split of the Protestant Church did nothing to alleviate the persecution of adherents of ancient paganism in the community. Early modern science and philosophy emerged from the dualistic alienation of humanity from the rest of nature, of subject from object, of the rational mind from the body and emotions (Merchant 1980). The rampage against paganism informed and arguably forged the approach to subsequent colonisation, where the Church was a very important tool in reshaping ‘savage’ cosmology and culture. As South African scholar Mogobe Ramose says, this is the “essence of the colonial experience . . . the calling into question the humanity of the indigenous African people” (Ramose 2002, p. 35 quoted in Freter 2022, p. 210). Ross and Man (2021) say (in parentheses) that there is “a vast gulf between ‘Eastern’ and ‘Western’ perspectives—and great reluctance of Western ‘thinkers’ to even acknowledge that this is a question, itself a symptom of a kind of arrogance, that is, a kind of shamelessness.” Nēpia Mahuika warns that white settler, or Pākehā scholars have a heavily interpreted view of Māori methods and concepts such as whakapapa.

Approaches to whakapapa, however, changed with the arrival of Europeans, whose incredulity of oral histories, belief in their own superiority, and desire to own indigenous culture not only undermined traditional experts but shifted whakapapa to print where it became subject to Pākehā scrutiny, legal interpreta-

tion, or displaced by colonisers as unreliable superstitions and myth. (Mahuika 2019, p. 4)

Warping indigenous ideas to suit modern purposes is not limited to early colonisation, but continues in the way ideas are ‘translated’ into contemporary scholarship for western purposes (Mika and Stewart 2017).

My purposes are not to reinforce modernity or western practices. Yet, I want to ‘repurpose’ the idea of *whakapapa* to discuss ontology and the assumptions humanity has about our relationship with the more than human world. Māori are firmly located in territorial place, and I am evolving these ideas into a nomodology (Deleuze and Guattari [1980] 1999) of ‘radical ontological relationality’ (Braidotti 2013) that arises in a globally localised sphere. I do not state that any concept, including *wkapapa*, might claim universal truth status, but rather, that the core onto-epistemology is a rich and vibrant mode of dignifying the ocean, atmosphere, geological strata, and the biosphere, that sorely needs such recognition, across the planet. By doing so, I hope to engage with these ideas, much as I would western ideas, in a lively and new way, without undermining their cultural meaning or import.

3. Monotheistic Dualism

A dualistic ‘otherworldly’ distinction permeates monotheism, where a singular (and unnamed) God is so all-powerful as both creator and destroyer that the living Universe is always separate and at ‘his’ mercy. Scholars in the Middle Ages argued that God could destroy and then rebuild the universe, so completely that those living would have no idea that they, and their world, had just been entirely recreated. The monotheistic creator God is perfect and all powerful. This underpins a rationale for two ‘worlds,’ one of universal Being beyond the constraints of time and space, divided from a world of Becoming which involves the historical emergence of accidents, mishaps, bad decisions, and wonderful moments.

Unlike monotheism, pantheons of gods have creation stories that involve mistakes. The Ancient Greek Titan Epimetheus was tasked by Zeus to gift attributes to all animals; he forgot to give an attribute to humanity. Consequently, his brother, Prometheus gave humanity the gift of fire, triggering a cascade of events that include human culture and technology and resulting in the punishment of Prometheus, who had his liver eaten by an eagle every day for 10,000 years (Aeschylus 1926, 5th century BCE; Graves 1981). The Christian God though, is infallible. He is incapable of ‘internal contradiction’, and the only error in the monotheistic story of Creation is when the first woman, Eve, ate an apple from the tree of knowledge, generating original sin and bringing about the expulsions of humanity from the perfection of the Garden of Eden. The fallibility of Eve is ultimately crucial though (demonstrating God’s perfection), as it introduces freedom and ethics into the social world.¹ Both noncontradiction and freedom are fundamental to Kant’s elucidation of the separation of the universal thing-in-itself and the world of appearances and becoming. As Kant describes it:

(the) concept of God is internally non-contradictory, a proof easily supplied since the concept of an all-perfect being contains nothing but positive determinations which cannot conflict with each other (see the third paragraph of Descartes’ Meditations on Knowledge, Truth and Ideas, originally published in 1684, as well as many later expositions of the claim). (Kant 1998, p. 734)

The perfection of God’s creation of the Universe is a fundamental principle that is essential to the modern development of a dualism between the appearance and the essential universal Truth, and thus, of the subjective interpretation of the appearance and the rational analysis of universal truths that hold, regardless of history or culture, across time and space. As outlined more fully below, Kant was so committed to this idea, along with Descartes’ argument that science as cause and effect demonstrates the perfection and consistency of God, that he was frightened that there was no room left for individual freedom.

A combination of Scholastic Divine perfection, Cartesian rationality, and the Reformation of a personal God forges the ground for Kant’s (Kant 1998) conception of the ‘transcendental aesthetic’. This later justified what Weber [1919] (Weber [1919] 1948) called

the ‘disenchantment of the world’, i.e., where modernity assumed that science could uncover everything there is to know through synthetic judgement involving empirical apprehension of the appearance of an object, with rational deduction, and non-contradiction. From this basis in epistemological mastery, modernity has extricated the rational individual from an integrated, pagan, ecological culture, placing them instead in one of global trade, freedom and mastery. The unfortunate side effects of this assumption of mastery and its subsequent extractive economics is large scale pollution, extremes of poverty and wealth, and overburden on planetary systems to absorb and detoxify the effects of global transport, manufacturing, and consumerism, resulting in climate change, polar and glacial ice melt, sea level rise, weakening of the thermohaline escalator, and a damaged ozone layer. Its worth enquiring how we got here (Ripple et al. 2020; IPCC 2021; IPBES 2019).

4. Descartes

The devout Catholic and mathematician Descartes was one of the most influential thinkers on modern dualism, setting out a rationale for deep scepticism of phenomenological experience. The basis of Descartes’ dualism was a Christian monotheism that believed God created a rational order to the Universe, bound by the laws of cause and effect. Descartes was writing during the Inquisition and was highly aware of the tragedy that befell Galileo, who was declared a heretic in the 1630s for supporting Copernicus’ heliocentric conception of the solar system (Finocchiaro 1997, p. 47). Descartes aimed to bring scientific rationality into the Christian understanding of God and Creation. Concurring with the scholastic argument of divine perfection, in the ‘Third Meditation’ (Descartes 1980), Descartes writes “For, as the faith teaches us, the supreme happiness of the other life consists in that single contemplation of the Divine Majesty, of which we already experience, albeit in a much less perfect contemplation, but that causes us nonetheless to rejoice of the greatest contentment of which we are capable of sensing in this life (Descartes 1980, p. 42).

Descartes made use of Christian superstition—of ghouls and devilment—to make his case that normative assumptions need to be revisited from a sceptical viewpoint. The devil might trick the subjective intuition of the appearance of an object, obscuring the genuine order of cause and effect. Furthermore, conventional assumptions about the nature of things could often be faulty, making it essential for each individual to use their rational judgement to understand objects in the rational universe, as they really are. To overcome the tricky interpretive faults of subjective phenomenological experience, Descartes relied on rationalist faith in deductive logic. Through deduction, a person could thoughtfully arrive at the universal truth. In the *First Meditation* (1641/1980), he emphasises his scepticism of interpreting the ‘appearance’ of empirical evidence and phenomenological sensations as the first step in elevating the mind and rationality over the body, sensations, and experiences.

Accordingly, I will suppose not a supremely good God, the source of truth, but rather an evil genius, supremely powerful and clever, who has directed his entire effort at deceiving me. I will regard the heavens, the air, the earth, colors, shapes, sounds, and all external things as nothing but the bedeviling hoaxes of my dreams, with which he lays snares for my credulity. I will regard myself as not having hands, or eyes, or flesh, or blood, or any senses, but as nevertheless falsely believing that I possess all these things. I will remain resolute and steadfast in this meditation, and even if it is not within my power to know anything true, it certainly is within my power to take care resolutely to withhold my assent to what is false, lest this deceiver, however powerful, however clever he may be, have any effect on me. (Descartes 1980, pp. 62–63)

Descartes insists that the comprehension of objects using the senses is always informed by commonly held fallacies, or tricks of perception, and it is only with the rationality of the mind that social norms can be overcome and truth ascertained.

The rational logic of Descartes owed considerably to his skill as a mathematician, particularly in geometry. As Grünbein (2010) describes it, the God given Universe is set upon geometric rules, and human behaviour, like all other bodies, also tends to gravitate along

certain pre-ordered lines. In letters to the Countess Palatine in 1649, Descartes describes the understandable ‘inclination’ towards poetry in scientific terms. Grünbein explains:

A certain basic disposition or leaning—which opens up a whole spectrum of scientific associations: from the geometry of conic sections, to the planetary orbits of the astronomers, to the geometer’s art of measurement made possible by the earth’s magnetism and the deviations of the quivering compass needle from the horizontal, in a word: *inclination*. (Grünbein 2010, np)

There are rules that govern the universe, where mathematical equations can discover the genealogy of forces acting upon other forces. Cartesian rationalism aims for a universal truth that can be deduced independently by each individual to create a classification at the level of Truth that enables each isolated self to communicate with other individual selves. The inclination towards cosmic order enables the individual to peer beyond the appearance and divine the ultimate rational truth.

Descartes marries the two elements of extreme doubt and deductive rationality into sceptical rationalism, which promoted the mind over the phenomenological data of the body and the subject over the object. Thus, he created the ultimate dualism, separating the mind from the body. In the Sixth Meditation he wrote:

On the one hand I have a clear and distinct idea of myself, in so far as I am simply a thinking, non-extended thing, and on the other hand I have a distinct idea of body, in so far as this is simply an extended, non-thinking thing. And accordingly, it is certain that I am really distinct from my body, and can exist without it.

(Descartes 1980, p. 54)

From here, Descartes announced his most famous epithet, “Cogito, ergo sum”—“I think, therefore I am”.

This dualist alienation between mind and body has had a deep effect on other hierarchical dualist values in modern thinking. By ignoring the body, the similarities amongst emotional, considerate, social, breathing, eating, and defecating animals is obscured. The *animal rationalis* is assumed to be human, and other species are lower in order, along the lines of the Christian Great Chain of Being.

Descartes put such great emphasis on rational thinking that he almost annihilated the real existence of the object under examination. The rational gaze had to rely on deductive logic rather than empirical evidence, which could be imagined, dreamed up, or tampered with by mischievous devilment. In his *Letter of Dedication* prior to the *Meditations*, he claims the arguments contained in the work “proving that God exists and that the mind is distinct from the body have been brought (as I am confident they can be) to such a level of lucidity that these arguments ought to be regarded as the most precise of demonstrations” (Descartes 1980, p. 49).

5. Kant

Over a hundred years later, Kant addressed the radical alienation that Descartes had purported between subject and object. The rational mind cannot completely disregard the appearances of things and needs *something* to work on, or there is no thinking to be done. Rather than being all spirit, the thinking mind has an existential component too. In *The Critique of Pure Reason* (Kant 1998), Kant wrote that Descartes’ formula “Cogito, ergo sum”, while dualist, was not ethereal, “The “I think” is . . . an empirical proposition, and contains within itself the proposition “I exist” (Kant 1998, fn. 453).

Both Descartes and Kant want to claim scientific evidence to support their philosophical propositions.

In this book, Kant makes the case for the ‘Transcendental Aesthetic’. “Intuition” he argues,

takes place only insofar as the object is given to us; but this in turn, is possible only if it affects the mind in a certain way. The capacity (receptivity) to acquire representations through the way in which we are affected by objects is called

sensibility. Objects are therefore given to us by means of sensibility, and it alone affords us intuitions; but they are thought through the understanding, and from it arise concepts. But all thought, whether straightaway (*directe*) or through a detour (*indirecte*), must ultimately be related to intuitions, thus, in our case, to sensibility, since there is no other way in which objects can be given to us. (Kant 1998, p. 155)

Kant puts a great deal of time into considering what might be the a priori conditions for individuals to ascertain representations. The appearance of an object offers sensations to the sentient individual. However, they are still fundamentally alienated from the noumenal ‘thing-in-itself’. To comprehend anything at all, a priori conditions are needed as the materials or conduit for human cognition. These a priori are time and space (temporality, and extension and form), through which human beings intuit everything, albeit only as the object imposes on human sensibilities. We apprehend the appearance of the object only because these a priori conditions are in place. He explains the a priori of space as ‘extension and form’, which is a necessary precondition before someone can comprehend the tangible appearance of an object.

Likewise, Kant believes temporality is a *subjective* a priori condition that needs to be part of the human condition so that the individual can incorporate items into relative relation. Kant argues that time does not exist objectively, outside of human experience, but is *only* a subjective a priori. He states categorically, “Time is therefore merely a subjective condition of our (human) intuition (which is always sensible, i.e., insofar as we are affected by objects), and in itself, outside the subject, is nothing” (Kant 1998, p. 164).

Time is therefore given a priori. In it alone is all actuality of appearances possible. The latter could all disappear, but time itself, as the universal condition of their possibility, cannot be removed. (Kant 1998, p. 162)

He goes on to explain that “(t)ime is no discursive or, as one calls it, general concept, but a pure form of sensible intuition. Different times are only parts of one and the same time. That representation, however, which can only be given through a single object, is an intuition.” In contrast, space, or form and extension, are part of the objective field of the world.

While he is more prepared to acknowledge the actual objects that the individual intuitively comprehends than was Descartes, Kant then wriggles around to generate a slightly more sophisticated claim for subjective rational knowledge alienated from objects which are only accessible as ‘representations’ or an ‘appearance’ that the thinking subject can empirically experience and then analyse. This maintains the alienation of the subject from the object as proposed by Descartes. Subjective apprehension of an ‘object,’ Kant (Kant 1998, p. 156) specifies, “I call the form of appearance”.

Kant takes science, and especially cause and effect, very seriously. He is worried that the individual will be a mere cog in the broader machinery of cause and effect. This question of free will is the impetus for reinforcing the dualism between the (free) thinking subjectivity, the empirically informed appearance, the ‘thing-in-itself,’ and the (ahistorical) Universal categories. Behind the appearance, and completely inaccessible to the thinking subject, is the ‘thing in itself.’

For in this case that which is originally itself only appearance, e.g., a rose, counts in an empirical sense as a thing in itself, which yet can appear different to every eye in regard to color. The transcendental concept of appearances in space, on the contrary, is a critical reminder that absolutely nothing that is intuited in space is a thing in itself, and that space is not a form that is proper to anything in itself, but rather that objects in themselves are not known to us at all, and that what we call outer objects are nothing other than mere representations of our sensibility, whose form is space, but whose true correlate, i.e., the thing in itself, is not and cannot be cognized through them, but is also never asked after in experience. (Kant 1998, pp. 161–62)

Strangely, although empirical appearances are subject to the laws of cause and effect, Kant regards the thing-in-itself as unmodified by necessary causal relationships. The evolution of time and space has no impact on the thing in itself. This otherworldly apparition is conceptually important to Kant, to preserve the ideal of personal freedom. If a subject were defined in terms of cause and effect, there would be no free will. The only way he thinks it is possible to maintain free will is by creating a category that is outside the constraints of time and space.

(T)o prevent one from thinking of illustrating the asserted ideality of space with completely inadequate examples, since things like colors, taste, etc., are correctly considered not as qualities of things but as mere alterations of our subject, which can even be different in different people. For in this case that which is originally itself only appearance, e.g., a rose, counts in an empirical sense as a thing in itself, which yet can appear different to every eye in regard to color. The transcendental concept of appearances in space, on the contrary, is a critical reminder that absolutely nothing that is intuited in space is a thing in itself, and that space is not a form that is proper to anything in itself, but rather that objects in themselves are not known to us at all, and that what we call outer objects are nothing other than mere representations of our sensibility, whose form is space, but whose true correlate, i.e., the thing in itself, is not and cannot be cognized through them, but is also never asked after in experience. (Kant 1998, pp. 161–62)

Having carefully examined the dualism set out by Descartes between subject and object, Kant proliferates schisms between the subject, the appearance of an object, the thing in itself, and the noumenon.

The individual thinking subject remains crucial to Kant's schema, and it has the same status as the other two *a priori*. All three are the conditions upon which consciousness of the world relies. This is where Kant agrees with Descartes, regarding the rational individual and its perspective as his 'Copernican revolution' in philosophy. He manages to exclude the phenomenological sensations (which are experienced subjectively) from the universal principles of the *a priori*. Through the *a priori* conditions, the thinking individual can deduce a representation that goes beyond the empirical appearances of objects. This is Kant's transcendental aesthetic, his Copernican revolution.

Since that within which the sensations can alone be ordered and placed in a certain form cannot itself be in turn sensation, the matter of all appearance is only given to us *a posteriori*, but its form must all lie ready for it in the mind *a priori*, and can therefore be considered separately from all sensation. I call all representations pure (in the transcendental sense) in which nothing is to be encountered that belongs to sensation. Accordingly the pure form of sensible intuitions in general is to be encountered in the mind *a priori*, wherein all of the manifold of appearances is intuited in certain relations. This pure form of sensibility itself is also called pure intuition. So if I separate from the representation of a body that which the understanding thinks about it, such as substance, force, divisibility, etc., as well as that which belongs to sensation, such as impenetrability, hardness, color, etc., something from this empirical intuition is still left for me, namely extension and form. These belong to the pure intuition, which occurs *a priori*, even without an actual object of the senses or sensation, as a mere form of sensibility in the mind. I call a science of all principles of *a priori* sensibility the transcendental aesthetic. (Kant 1998, p. 156)

Kant argues that he has made a conceptual revolution which is every bit as important as Copernicus, who realised that instead of the stars and sun orbiting the earth, the earth orbits the sun. This entails a profound shift in orientation that still makes sense of the way shadows fall and other evidence but fundamentally decentres the earth from an egoistic centre. As Kant explains it, his philosophy follows the radical inversion of orientation proposed by Copernicus:

(T)he first thoughts of Copernicus, who, when he did not make good progress in the explanation of the celestial motions if he assumed that the entire celestial host revolves around the observer, tried to see if he might not have greater success if he made the observer revolve and left the stars at rest. Now in metaphysics we can try in a similar way regarding the intuition of objects. If intuition has to conform to the constitution of the objects, then I do not see how we can know anything of them a priori; but if the object (as an object of the senses) conforms to the constitution of our faculty of intuition, then I can very well represent this possibility to myself. (Kant 1998, p. 110)

Kant argues his theory is just as revolutionary: an “anthropocentric procedure in philosophy and Copernicus’s heliocentric revolution in astronomy” (1990: fn.715). He fails to notice though that the a priori conditions required for the Transcendental Aesthetic are the *opposite* of the profound decentering conceptualised by Copernicus. The a priori of time and space recentre the individual subject and make the apprehension of the appearance of the sensible object utterly dependent on ‘synthetic’ understanding and subjective apprehension. Far from positioning the earth in relative motion to the stars, or the subject in relative motion to other objects, Kant succeeds in making all objects relative to the individual thinking subject. He maintains the concept of ‘appearance’ so that the alienation between subject and object, and then the appearance and representation of the thing-in-itself, is upheld; even while at the level of appearance, the deductive logic of cause and effect maintains a synthesis to (God’s) laws of nature.

In footnotes, Kant quotes from Copernicus:

All apprehended change of place is due to movement either of the observed object or of the observer, or to differences in movements that are occurring simultaneously in both. For if the observed object and the observer are moving in the same direction with equal velocity, no motion will be detected. Now it is from the earth that we visually apprehend the revolution of the heavens. If, then, any movement is ascribed to the earth, that motion will generate the appearance of itself in all things which are external to it, though as occurring in the opposite direction, as if everything were passing across the earth. This will be especially true of the daily revolution. For it seems to seize upon the whole universe, and indeed upon everything that is around the earth, though not the earth itself ... As the heavens, which contain and cover everything, are the common locus of things, it is not at all evident why it should be to the containing rather than to the contained, to the located rather than to the locating, that motion is ascribed (Nicolaus Copernicus [1473–1543], *De revolutionibus orbium coelestium* [Nuremberg, I S43] 1:5). (Kant 1998, fn. 715)

Copernicus recognised that inevitably, all angles and information must be understood from the ‘viewpoint’ of earth, but he importantly resituates the ‘centre’ of motion away from the earth, making complex calculations about the relative speed and direction of all cosmic objects in relation to each other, where earth (from where measurements must inevitably be made) is merely one celestial object orbiting around the sun, and the solar system may be orbiting or moving around other gravitational forces. It seems that Kant grasped these subtleties, but he did not like the philosophical consequences.

Instead, Kant emphasised still further the earth centric, or philosophically, the individual subjectivity, of conscious intuition of appearances, without bringing the a priori of space *and* time into the fabric of cosmic relationships. Kant assumed that time was a priori separate from space. This meant that unlike Copernicus, there is no decentred fabric of relationships where subjective measurements need to calculate how offset we are from the gravitational centre. Effectively, this egoistic anthropocentrism connects all things *through* the subjective apprehension of a priori subjective time and objective space, making human comprehension not merely a part of the pantheistic living universe (as it is for the Celts and Māori), but the singular, vital, intelligent, thinking player through which all appearances must channel. Whereas Descartes’ scepticism is easy to lampoon with its

devils and dreams, Kant succeeded in presenting Pure Reason as a mature scientific and anthropocentric project that has underpinned the modern Enlightenment to the detriment of a decentred indigenous cosmology.

6. Interconnection and a Decentred Cosmology

There is no doubt that Kant has had and continues to have a huge influence over philosophy, science, technology, and politics. However, in 1924, Einstein reviewed Elsbach's book *Kant und Einstein* (Elsbach 1924) and was critical of the a priori, which he regarded as taking a system as a whole and selecting one element of it to regard as empirically conditioned. Einstein wrote, "what remains unsatisfactory in this is always the *arbitrariness in the choice* of those elements that one designates as a priori" (Elsbach 1924, pp. 1688–89 in Howard and Giovanelli 2019). Einstein's theory of relativity owes more to Copernicus than to Kant's anthropocentrism.

Science continues to extend our knowledge, using rationality, geometry, and mathematics but tied firmly to empirical evidence, as well as the thinking subject. As telescopes have become stronger, first Galileo, Hubble, and now the James Webb Space Telescope demonstrate increasingly how decentred the earth is. Not only is the earth not the centre of the solar system, but our Sun is a minor star and a small solar system in the galaxy, and the Milky Way is itself one galaxy amongst trillions. There could be many more habitable universes where liveable planets with the 'goldilocks' conditions of earth proliferate. It may be true that there was a Big Bang that 'created' the universe, but according to the pragmatist William James, C.S. Lewis in the Narnia series, and string theorist Michio Kaku (2006), it's possible that the Big Bang is one of many multiverses, and furthermore, that our universe is on the boundary of limitations for the possibility of life. Astrophysicists are currently intrigued with the nature of time, as a better model of the expanding universe takes shape.

The current argument is that time and space are the same thing. Kant's argument that a priori space is fundamentally different, and objective, from a priori time, which is subjective (1998, p. 290), does not hold up. The theories of relativity, gravity, and thermodynamics are coalescing to demonstrate how time and mass and space are heavily interlinked. This does not annihilate Kant's theory of the a priori conditions for knowledge, but it fundamentally decentres it. Human subjectivity is merely one singularity of comprehension in a field of such singularities. Space-time connects subjectivity to the fabric of the universe, rather than disconnecting it, as described by Kant's Cartesian ideas of the appearance of the qualities of an object that are irreducibly translated by the subjective apprehension of sensations.

7. Contradiction, Cause, and Effect

Even the core concept of cause and effect is becoming decentred, as quantum effects spontaneously link atoms over monumental distances with no known continuum other than entanglement. Entangled subatomic particles remain in a virtual superposition, 'undecided', until one becomes located and spins in a particular direction. Spontaneously, the entangled partner spins in the opposite direction (even on the other side of the galaxy).

At a microscopic level, quantum physics is also messing with the separation of subject and object (Barad 2007). Experiments on quantum effects show that quantum particles behave like both waves and particles. The two slit experiment demonstrates that a single photon shone through a screen with two apertures will go through both at the same time. The photon then creates an interference pattern (with itself), resulting in a spectrum of strong and faded light on the far wall. Scientists are calling this result virtual probability, because the bands of bright and dark indicate a probability curve for the interference pattern. At this stage in the experiment, the photon is 'undecided' where it has actually landed, and is 'smeared out' in a probability curve. However, if observable measurement takes place, then the 'objective' photon in the experiment behaves quite differently. When someone observes the experiment, then the photon behaves like a particle. It goes through one aperture and 'lands' at one point on the far screen. It is located, not virtually smeared

out. The process of the individual subject observing an object is entangled and locates the particle. Descartes' notion of an alienated subject is empirically falsified (Barad 2007).

Time-space is the a priori fabric for the known universe, but there is a lot that remains unknown. Our current model of the universe is called LambdaCDM; it recognises dark matter and dark energy but has no idea what they are, except they have gravitational effects on other observable bodies. Together, they make up 95% of the universe. Einstein described 'empty space' as being a cosmological constant. Jamie Farnes (2018) is now speculating that the cosmological constant is a combination of dark energy and matter, as a 'negative fluid' that accelerates towards you if you push it

It turns out that indigenous modes of understanding all things as interconnected, have a closer orientation to contemporary physics than Enlightenment philosophy. The Anglican Minister and Tohunga Māori Marsden claimed a synergy between Māori philosophy and quantum physics in the 1990s (Marsden 1992).

8. Whakapapa

Colonialism did not merely explore far off countries; it also utilised egocentric Enlightenment ideas to situate European culture as superior to that of pagans and savages. The premise of the Enlightenment was that everything is epistemologically accessible if attention to empirical evidence is combined with rational deduction. The plethora of new cultures across the globe were studied from this perspective.

Before the impact of colonialism, whakapapa experts held important positions in their tribes, but these people and their knowledge were displaced as Pākehā sought to control and assimilate Māori culture and history. Pākehā researchers, for a very long time, set themselves up as experts in Māori history and genealogy, and encouraged Māori to apply the genealogical method of dating to whakapapa and to situate their history and genealogy within Western methodological traditions and epistemologies. (Mahuika 2019, p. 12)

Māori have been at the forefront of understanding the consequences of copyright and ownership of knowledge, partly because in Māori culture, access has never been egalitarian or a free for all. "Whakapapa prior to the arrival of Europeans was a lived experience taught orally through schools of learning or wānanga that were reserved for individuals selected because of their social rank and perceived skills and abilities to memorise and retain information" (Mahuika 2019, p. 4). My intentions are not to 'own' *whakapapa*, nor to encroach in some sort of cultural usurpation (Stewart 2020). Yet, my relationship to *whakapapa* is not simply as an ally. I further need to acknowledge, that as an Irish Pakeha settler in Aotearoa, my knowledge of both the Gaelic and Māori languages is at beginner level.

Instead of cultural appropriation, I hope that *whakapapa*, like other ideas from different cultures (like Kant's) are part of an ongoing and contested dialogue of ideas. My hypothesis is that *whakapapa* adds a layer of support to a constellation of ideas that add integrity to the relationship of all people with the environment. In other words, I intend to put *whakapapa* and other concepts to use as a counterpoint to the alienation of modernity, to pull ancient ideas past the colonial catastrophe of cultural and ecological alienation and translate them into a conceptual futurity, in the hope that this might pave a way for a more authentic relationship of humanity with the more than human world. To do so, I want to take care not to reshape the concept of *whakapapa* and subvert it to my agenda (Mika and Stewart 2017); therefore, I rely on legitimate sources to outline the existent conceptual variation that is resonant in the concept. Those resonances (rather than the lines of genealogical identity that are so important to the politics and ontology of Māori tribes) are what get layered here, into a bricolage of ideas about pantheistic animism and the concrete, conceptual, spiritual, and empirical interconnectedness of all things. No doubt, this is yet another translation of Māori ideas into a contemporary resistance to modernism, and thus, it is not 'true' to the traditional forms of *whakapapa* which are normally seen on Marae or recited by Tohunga. The purpose is not entirely congruent with those important taonga or treasures. However,

I hope that by putting *whakapapa* to use in this philosophical way, it helps build resilience for Māori and other peoples in developing a new posthumanist conceptual basis for global politics that is more respectful and inclusive of non-western conceptual apparatus than colonial modernism has proven to be. To do that, indigenous epistemology needs to be ‘built in’ at the foundation, and that is my aim here, rather than as a mode of modern ownership or subterfuge of traditional ideas and values.

9. Radical Ontological Relationality

Rather than the intricate specifics of identity politics involved in knowing tribal *whakapapa*, I am more interested in the ‘radical ontological relationality’ (Braidotti 2013) that *whakapapa* elucidates. This is a reading of pantheism as nondualist immanence, animated with ‘*mauri*,’ i.e., self-organising systems, that are interacting and intersecting, entanglement with the more than human, and with a set of laws that are more complex than cause and effect.

Whakapapa is usually translated into English as ‘genealogy’, which often indicates lines of ancestors, with some lines being more illustrious than others. However, *whakapapa* can be understood in a more fundamental way. Emerging from my conversation with Te Haumoana White, Rangitira of the tribe Poutama (Irwin and White 2021, p. 537), *whakapapa* means ‘strata’. Mika and Stewart (2017, p. 137), define it as ‘layering,’ and Ngata (1972) makes a similar argument, translating *whakapapa* “literally as ‘the process of layering one thing upon another’” (Ngata 1972 in Mahuika 2019, p. 1). Genealogy is not limited to human lineage; rather, “there is a genealogy for every word, thought, object, mineral, place and person” (Roberts 2015 in Mahuika 2019, p. 1). Cherryl Wairea i te Rangi Smith explains that *whakapapa* “actually maps out the nature of existence” (2000, p. 46).

Carl Mika attends to the etymological genealogy of the *whakapapa*, where ‘*whaka*’ is to ‘become’ and ‘*papa*’ is ‘earth’, in other words, to “be embraced towards Papa (mother earth)” (Mika 2014, p. 53).

Whakapapa draws a taxonomy of relationships about animals, insects, birds, lizards, fish, plants, rivers, oceans, geological strata, the atmosphere, moon, sun, and stars. There are a range of stories outlining how various features are related. For example, a geological strata south of Mount Taranaki is ‘related’ to a similar geological feature off Mokau, over a hundred kilometres north of the mountain, both of which were fished up from the sea by the Tohunga, Poutama. Sure enough, in modern geological terms, these are separate examples of the same geological strata.

The personification of geological features is not anthropomorphic, as has sometimes been criticised. However, the rivers, the ocean, and the sky all have their own independent character, which features in both the taxonomy of kin relations through *whakapapa* and sometimes as named gods, such as Tane, the forest, the earth goddess, Papatuanuku or her husband the sky, Ranginui. The poet Hone Tuwhare explained in an interview: “Even if you’re addressing something inanimate. Even a person who’s no longer of this world—there’s just the insistence that the person has got ears, at least is listening, you know (Tuwhare and Manhire in Alley and Williams 1992, p. 189).

The consequences of recognising the legitimate perspective and character of other animals, plants, and geological features is important. Just as society has complex norms about respecting other people, recognising the anima in other biological and geological elements introduces a similar requirement for respect and care. It is no longer as simple to apply principles of extractive economics when the integrity of the river or mountain matters. A mine will damage a mountain, and unrestrained water use will damage a river. In Aotearoa, New Zealand, two tribes, Tuhoe and Ngati Hau, have successfully fought for the legal personhood of the mountains in the Urewera and the Whanganui River (Te Urewera Act 2014; Te Awa Tupua Bill 2017). The impacts of human behaviour for the flora, fauna, and geological integrity of that place now counts.

10. Onto-Epistemology

Importantly, the process of speaking, of analysing, is not attributed to solipsist individuals, as outlined by Descartes and Kant. Language and thinking are visceral, embodied, emotional, and as much, a part of the stomach, like the rational mind. People, or *tangata*, are usually referred to as *tangata whenua*, where *whenua* means both land and womb/placenta. Echoing the abundance of the earth mother, Papatuanuku, people are ‘placed’ relative to their mountain and their water. The pito, or bellybutton, reminds each of us of our genealogical ties to our forebears and the land we belong to (cf. Irwin 2015). Mika attends to the sky too, drawing attention to the husband of Papa, Ranginui (Mika 2014). These relationships are alive. “*Tangata whenua* truth is not an objectified, definitive truth but a recognition of relationships and interconnectedness which defines the uniqueness of things and individuals” (C. W.-I.-T.-R. Smith 2000a, p. 59).

The decentering of solipsism still maintains an irreducible apprehension of things through the senses but it does not need to divorce the mind from the body. Rather, it does the opposite: for Māori, thinking is emotional, embodied, and, at times, acutely logical.

Takirangi Smith explains that thinking, or *whakaaro*, is considered to be held in the stomach or entrails. Thought includes the “earthly component of that which forms the basis of action” (T. Smith 2000b, p. 58); it includes emotion, which commands attention. Rationality is not dismissed, but is only one aspect of thinking and cannot be divorced from embodiment, emotions, or the recognition of awareness embodied throughout landscape and whakapapa, which situate the speaker in their complex interrelationships in context. Delamere evokes speaking, *te Reo*, as an interwoven ecology:

In the grander scheme of things, traditional Te Reo are the voices of nature; the jolt of an earthquake, the song of a bird, the rustling of leaves, the rumbling of thunder before a storm, the piercing bolt of lightning in the night sky, the rushing waves of a tsunami, the cry of a whale, the fresh smell of rain on the earth. (Delamere in Mika 2014, p. 49)

This indicates how indigenous cultures are ‘high context’, where understanding is as much about listening to the environmental features as to the direct message encoded in human speech acts.

These nuanced understandings of how the process of thought and speech are integrated and embodied require a deep familiarity with *te Reo*, the Maori language, a language with which I, sadly, am not particularly adept. That familiarity is also necessary in Gaelic to deeply understand the animation of language and the ecosystem.

11. Celtic Animism

The Gaelic praise poems of the landscape are numerous. The long tradition of Gaelic bards traversing the land and passing on news through songs lasted thousands of years. Because it is an oral tradition, not all of these praise (or dispraise) poems have been ‘gathered’ and shared by a new generation of tradition bearers. Recently, research in Glenmoriston in the Scottish Highlands discovered over 300 praise poems in one glen (valley) (Gauld and Langhorne 2021). Forgotten for almost 100 years, they were composed in the 19th and 20th centuries, but many had much earlier roots. Retaining and gathering together these poems/songs owes a great deal to the lack of land clearances by the Laird of Glenmoriston, meaning that unlike other adjacent valleys, the land was continuously populated by its clan for hundreds of years, until relatively recently. After the Battle of Culloden, most of the Highlands of Scotland was cleared of its ancient people in favour of farming sheep, with ancient traditional clansfolk forced to wander destitute, looking for somewhere to live and work or to emigrate.

Do Bheith Bòidheach/Your Beautiful Being

Neul a’ snàmh air an speur,
duilleach eadar è’s mo shùil;

ùr bàrr-uaine gruag a' bheithe,
 leug nan leitir cas mun Lùib.
 Oiteag 'tighinn bhàrr an tuim,
 a' toirt fuinn às do dhos,
 cruit na gaoithe do bhàrr teudach,
 cuisleannan nan geug ri port.
 A cloud swimming in the sky, a
 leaf between it and my eye;
 new crop-green hair of the birch,
 read the casual letters about Lùib
 A breeze coming from the tree,
 bringing tunes from you,
 the wind's harp from the top of a string,
 the pulses of the branches to a tune. (Deòrsa 2000)

Ceithir Gaothan na h-Albann/The Four Winds of Scotland

Duilleach an t-Samhraidh, tuil an Dàmhair, na cuithean 's an àrdghaoth Earraich i;
 dùrd na coille, bùirich eas, ùire 'n t-sneachda 's an fhalaisg i;
 tlàths is binneas, àrdan, misneach, fàs is sileadh nam frasan i;
 anail mo chuirp, àrach mo thuigse, mo làmhan, m'uilt is m'anam i.
 Fad na bliadhna, rè gach ràithe, gach là 's gach ciaradh feasgair dhomh,
 is i Alba nan Gall 's nan Gàidheal is gaire, is blàths, is beatha dhomh.
 The summer leaves, the October flood, the winds and the high wind Spring is she;
 the thunder of the forest, the roar of a waterfall, the fresh snow and the darkness
 is she;
 mildness and sweetness, pride, courage, the growth and rain of the showers
 is she;
 the breath of my body, the nurture of my understanding, my hands, my tears and
 my soul is she.
 Throughout the year, during every season, every day and every evening for me,
 It is Scotland, Highland and Lowland that is laughter and warmth and life for me.
 (Deòrsa 2000) (translated by Joyce Brìghde Gilbert, pers.comm.)

The names of land features are often reminiscent of the gods. The Paps' of Jura in the islands of the Western Hebrides, for example, are quite possibly the breasts of Danu, the earth goddess. In Celtic tradition, trees are associated with ogham script, an early form of writing, and the 'letters' of each knuckle segment of each finger. In particular, trees have layers of meaning. Oaks are associated with the Druids and wisdom. My friend Joyce Brìghde Gilbert explained to me that pine trees are associated with the chiefs or Lairds, and the deciduous woods of birch, rowan, and hazel are associated with the ordinary people of the land. The following, from a collection of common Scottish Gaelic proverbs (Nicholson 1882), is a good example -

Sníomhaidh tighearna fearna tuathanach daraich,
 An alder lord will twist an oak tenant

In the poem Hallaig, Somhairle MacGill-Eain (2022) makes use of the Bardic praise poem tradition by rejoicing in the slender birch trees as young women, who have proliferated in the abandoned villages of the clearances, repopulating them again.

Mura tig 's ann theàrnas mi a Hallaig
 a dh'ionnsaigh Sàbaid nam marbh,

far a bheil an sluagh a' tathaich,
 gach aon ghinealach a dh'fhalbh.
 Tha iad fhathast ann a Hallaig,
 Clann Ghill-Eain 's Clann MhicLeòid,
 na bh' ann ri linn Mhic Ghille Chaluim:
 chunnacas na mairbh beò.
 Na fir 'nan laighe air an lèanaig
 aig ceann gach taighe a bh' ann,
 na h-igheanan 'nan coille bheithe,
 dìreach an druim, crom an ceann.
 I will go down to Hallaig,
 to the Sabbath of the dead,
 where the people are frequenting,
 every single generation gone.
 They are still in Hallaig,
 MacLeans and MacLeods,
 all who were there in the time of Mac Gille Chaluim:
 the dead have been seen alive.
 The men lying on the green
 at the end of every house that was,
 the girls a wood of birches,
 straight their backs, bent their heads.

The trees are not a personification of human girls. Birch is a nursery tree. The rest of the forest follows birch as it transforms the land back into native forest. As the birch inhabit the villages that were cleared by the greedy Lairds, they lay the groundwork for the renewal of the land, and that proliferation supports communities.

Both metamorphosis and omens relate the social worlds of forest, animals, fish, and people. Famously, Túan mac Cairill, who was the only survivor of the first migration to Ireland thousands of years ago, transformed, at the ebbing and flowing of different migrations into Ireland, into a stag, a boar, a hawk, and then a salmon, before being eaten by the queen, Cairell, wife of Ulster, and being born as Túan, son of Cairell, who remembered all the qualities, wisdom, and adventure of his metamorphoses (Carey 1984 in [Duffy 2015](#)).

Another example of the way the natural world intervenes and imposes upon the fate of humans is found in a story of the chiefly MacDonald clan, who had ruled the Dalriada empire for many centuries. The 'septs' are smaller family groups of a larger clan (similar to hapu and iwi for Māori). A deer and a raven decide which of the four sons will hold the chieftdom.

(A)n origin story of the four septs of Glenmoriston Macdonalds, in Coire Dho. The four sons of the chief are there accosted in Coire Dho by a white fawn and a raven, that drops a bone between them and seals their fate. (Macdonald, 270 in [Gauld and Langhorne 2021](#), p. 18)

These simple stories and praise poems present a world where animals, plants, fish, and geology are constantly present in daily life. They are a significant part of shaping fate; they hold the future, as well as the past. Different species or ocean and geology hold a character that resonates with the ways that people behave and what they have endured. Like all indigenous people, the Celts are highly contextual and poetic. Rationality is an aspect of thinking and communication, but thought also needs to consider the character, courage,

and entrails; it is defined by political and ecological fate, which constrains the parameters of freedom.

The ethos of pantheism is a deep interconnection with the surrounding ecology. Deeply embedded in place, indigenous people have a territory that, nomadic or located, shapes their ways of knowing through a deeply reverential regard for the species and strata that make up their lives. There is no alienation between an individual and their community. Their community includes the ocean, the sky, the land, and all the life species inhabiting those areas. Time-space is cyclic, seasonal, governed by the moon and tide. Time-space involves each solipsist subject in a communion with the wider planetary systems and cycles. It is not, as argued by Kant, a reason to elevate human rationality and position the solipsist subject at the centre of all knowledge. Instead, animism refers overtly to the ways in which other species, especially the raven, the salmon, the deer, and trees, contain knowledge and exert influence over human society. The reciprocity of onto-epistemological value ensures that humankind is respectful of its more than human kin, which ensures that large scale pollution, ecological devastation, and extractive economics would be deeply disapproved of and actively resisted. If we return to animism, be it monotheistic, pantheistic, or atheistic, we will retreat from the modern eschatology that produces climate change and mass pollution.

Animism echoes the self organising systems and the complex types of universal laws explored by quantum physics and thermodynamics. The forces that govern the universe also govern living societies on planet earth. Those forces, like thermodynamics and quantum physics, include increases in order and disorder, statistical likelihood, and chance. They are not a straight-forward mechanical relation of cause and effect that traps singular objects in a broad and unavoidable evolution or ‘series of alterations’ (Kant 1998, p. 490). There is still a lot of room for freedom in this large and microscopic system of astrophysics. Virtual possibility demonstrates that subatomic particles are in a superposition state that has not ‘decided’ a location or a spin until it interacts with an observer. These interactions are good indicators of the complex relationship between fate and decision. Kant’s fear that the forces of cause and effect in the universe would reduce the scope for freedom was unfounded. Freedom maybe be constrained by statistical likelihood, but within that scope, free will has a role. Likewise, Kant’s insistence that time is subjective is a failure to fully appreciate how a priori conditions involve each subject in the wider universe, rather than segregating them from it and from each other. Kant inverted the legacy of the Copernican revolution. Descartes’ separation of subjects from objects is completely annihilated by quantum physics. The animism of indigenous cultures such as Māori and the Celts has more in common with contemporary physics than the alienated Idealism of Transcendental Aesthetics.

Science and indigenous perspectives on ecology as an intra-dependent and evolving community which involves humanity in kin relations with all other strata is a vitally important ethos that opens up freedom and futures from the modern catastrophe of the Anthropocene. Animism is not merely a curio of the past; it needs to be a fundamental aspect of reinvigorating the future.

Funding: This research received no external funding.

Institutional Review Board Statement: No ethics approval was required for this research.

Informed Consent Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

Note

- ¹ Undoubtedly I am skating over many nuanced and important interpretations of these significant issues, I hope the reader will bear with me, as this common Scholastic interpretation forges insight into the dualism that has dominated Enlightenment thinkers such as Descartes and Kant.

References

- Aeschylus. 1926. *Orig. 5th Century BCE*. Herbert Weir Smyth (trans) *Prometheus Bound*, Loeb Classical Library, Volumes 145 & 146. Cambridge: Harvard University Press. Available online: <https://www.theoi.com/Text/AeschylusPrometheus.html> (accessed on 6 May 2022).
- Alley, Elizabeth, and Mark Williams, eds. 1992. Tuwhare Interview with Bill Manhire. In *The Same Room: Conversations with New Zealand Writers*. Auckland: Auckland University Press, pp. 175–96.
- Barad, Karen. 2007. *Meeting the Universe Half Way: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press.
- Braidotti, Rosi. 2013. *Posthuman Ecologies*. Cambridge: Polity Press.
- Deleuze, Gilles, and Felix Guattari. 1999. *A Thousand Plateaus; Capitalism & Schizophrenia*. Translated by Brian Massumi. London: Athlone Press. First published 1980.
- Deòrsa Mac Iain Deòrsa George Campbell Hay. 2000. *Fuaran Sleibh: Irish Rhymes Included in Collected Poems and Songs of George Campbell Hay*. Edited by Michael Byrne. Edinburgh: EUP Lorimer Trust. Available online: <https://www.scottishpoetrylibrary.org.uk/poem/ceithir-gaothan-na-h-albann/> (accessed on 1 December 2022).
- Descartes, René. 1980. *Discourse on Method and the Mediations*. Translated by F. E. Sutcliffe. London: Penguin Books.
- Duffy, Fearghal. 2015. Metamorphosis in Irish Myths. Available online: <http://metamorphosisproject.org/fearghal-duffy-metamorphosis-in-irish-myths/> (accessed on 1 December 2022).
- Elsbach, Alfred. 1924. *Kant und Einstein; Untersuchungen über das Verhältnis der modernen Erkenntnistheorie*. Berlin and Leipzig: Walter de Gruyter and Co.
- Farnes, Jamie S. 2018. A unifying theory of dark energy and dark matter: Negative masses and matter creation within a modified LambdaCDM framework. *Astronomy and Astrophysics* 620: A92. [CrossRef]
- Finocchiaro, Maurice A. 1997. *Galileo on the World Systems: A New Abridged Translation and Guide*. Berkeley: University of California Press.
- Freter, Björn. 2022. Decolonial Philosophical Praxis Exemplified Through Superiorist and Adseredative Understandings of Development. In *Essays on Contemporary Issues in African Philosophy*. Edited by Jonathan O. Chimakonam, Edwin E. Etieyibo and Ike Odimegwu. Cham: Springer, pp. 209–26.
- Gauld, Munro, and Ceit Langhorne. 2021. *The Glen of the Bards: The Musical Heritage of Glenmoriston: A Scoping Exercise*. NatureScot: Buidheann Nadair na h-Alba.
- Graves, Robert. 1981. *Greek Myths*. Bilbao: Cassell Ltd.
- Grünbein, Durs. 2010. *Descartes Devil; Three Meditations*. New York: Upper West Side Philosophers, Inc.
- Howard, Don, and Marco Giovanelli. 2019. Einstein's Philosophy of Science. In *The Stanford Encyclopedia of Philosophy*. Edited by (Fall) Edward Zalta. Stanford: Metaphysics Research Lab Philosophy Department Stanford University Stanford. Available online: <https://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=einstein-philsience> (accessed on 1 December 2022).
- IPCC. 2021. Summary for policymakers. In *Climate Change: 2021 The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Edited by Valérie Masson-Delmotte, Panmao Zhai, Anna Pirani, Sarah L. Connors, Clotilde Péan, Yang Chen, Leah Goldfarb, Melissa I. Gomis, J. B. Robin Matthews, Sophie Berger and et al. Cambridge: Cambridge University Press.
- Intergovernmental Panel on Science (IPBES). 2019. *Global Assessment Report on Biodiversity and Ecosystem Services*. Bonn: IPBES.
- Irwin, Ruth. 2015. Ecological ethics in the context of climate change: Feminist and indigenous critique of modernity. *International Social Science Journal* 64: 1–13. [CrossRef]
- Irwin, Ruth, and Te Haumoana White. 2021. Negentropy and the Accelerating Anthropocene; Stiegler, Māori, and Exosomatic Memory. In *Educational Philosophy and Theory*. Edited by Joff Bradley. Special edition in memory of Bernhard Stiegler. London: Francis & Taylor.
- Kaku, Michio. 2006. *Parallels Worlds: A Journey Through Creation, Higher Dimensions, and the Future of the Cosmos*. Hamburg: Anchor Press.
- Kant, Immanuel. 1998. *The Critique of Pure Reason*. Translated and Edited by Paul Guyer, and Alan Wood. Cambridge: Cambridge University Press.
- MacGill-Eain, Somhairle. 2022. Hallaig. In *Scottish Poetry Library*. Translated by Sorley MacLean. Edinburgh: Scottish Poetry Library. Available online: <https://www.scottishpoetrylibrary.org.uk/poem/hallaig/> (accessed on 1 December 2022).
- Mahuika, Nēpia. 2019. A Brief History of Whakapapa: Māori Approaches to Genealogy. *Genealogy* 3: 32. [CrossRef]
- Marsden, Māori. 1992. God, man and universe: A Māori view. In *Tē Ao Hurihuri: Aspects of Maoritanga*. Edited by Michael King. Auckland: Reed, pp. 118–38.
- Merchant, Carolyn. 1980. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: Harper Collins.
- Mika, Carl. 2014. The enowning of thought and whakapapa: Heidegger's fourfold. *Review of Contemporary Philosophy* 13: 48–60.
- Mika, Carl, and Georgina Stewart. 2017. Lost in translation: Western representations of Maori knowledge. *Open Review of Educational Research* 4: 134–46. [CrossRef]
- Ngata, Apirana Turupa. 1972. *Rauru-nui-ā-Toi Lectures and Ngati-Kahungunu Origin*. Second 'Introductory Address' (pp. 4–7). Wellington: Victoria University, [Reprint Edition of Original Lectures from 1944].
- Nicholson, Alexander, ed. 1882. *A Collection of Gaelic Proverbs and Familiar Phrases, Based on MacIntosh's Collection*. Edinburgh: MacLachlan and Stewart.
- Ramose, Mogobe B. 2002. *African Philosophy through Ubuntu*, Rev. ed. Harare: Mond Books.

- Ripple, William J., Christopher Wolf, Thomas M. Newsome, Phoebe Barnard, and William R. Moomaw. 2020. World Scientists' Warning of a Climate Emergency. *BioScience* 70: 8–12. Available online: <https://academic.oup.com/bioscience/article/70/1/8/5610806> (accessed on 20 January 2020). [CrossRef]
- Roberts, Mere. 2015. Ways of Seeing: Whakapapa. *Sites* 10: 93–120.
- Ross, Daniel, and Ouyang Man. 2021. Towards a Metacosmics of Shame. In *Shame, Temporality and Social Change*. London: Routledge.
- Smith, Cherryl Waerea-I-Te-Rangi. 2000a. Straying beyond the boundaries of belief: Maori epistemologies inside the curriculum. *Educational Philosophy and Theory* 32: 43–51. [CrossRef]
- Smith, Takirirangi. 2000b. Nga Tini Ahuatanga o Whakapapa Korero. *Educational Philosophy and Theory* 32: 53–60. [CrossRef]
- Stewart, Georgina. 2020. *Māori Philosophy: Indigenous Thinking from Aotearoa*. London: Bloomsbury.
- Te Awa Tupua Bill. 2017. Whanganui River Claims Settlement Act. Available online: <https://www.legislation.govt.nz/act/public/2017/0007/latest/whole.html> (accessed on 1 December 2022).
- Te Urewera Act. 2014. Available online: <https://www.legislation.govt.nz/act/public/2014/0051/latest/whole.html> (accessed on 1 December 2022).
- Weber, M. 1948. *Weber, Max: Essays in Sociology*. Edited by H. H. Gerth and C. W. Mills. London: Routledge & Kegan Paul Ltd. First published 1919.