

## Exploring the Three Rs of Animal Ethics with Māori Ideas

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People have always grappled with their relationships with other species, particularly animals.

We make sense of our relationships with particular animals through words that act as labels, with in-built value judgements embedded in their meanings. These words put animals in categories; the labels assign rules to the ways in which humans interact with animals, acting as claims of entitlement and/or a prerogative to inflict harm.

For example, in English, the label of 'vermin' or 'pest' for an animal entitles humans to poison, trap and kill that animal, with the aim of eradicating it. Such animals include rats and mice, cockroaches, flies and bedbugs. Under the right circumstances, a wide range of animals can become seen as pest species – such as when animals are introduced into alien ecosystems, or urban development usurps habitats – including possums, rabbits, pigeons, foxes and wolves.

Māori attitudes towards the kiore (native rat, *Rattus exulans*) are very different from the ubiquitous Western view of rats and mice. In Māori thinking, kiore are not seen as a nuisance, or worse, but as a thing of some considerable value. Kiore were purposefully brought to Aotearoa by the ancestors of Māori, who managed local populations in 'rāhui kiore' or reserves (see more about rāhui below). Many manu or bird species were also taken for food within those rāhui. Extinct on the mainland since about 1922, numerous kiore populations remained viable for many decades on offshore islands, yet were targeted for total extermination, along with other rats, by the Department of Conservation.

'Lab animals' is another such label, entitling scientists to inflict harm on these animals because they exist for the purpose of research and testing to build scientific knowledge, in recent times having been genetically developed for scientific testing. Another label used by people in relation to



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animals is 'livestock'. Bestowing this label on an animal means that it exists in order to feed humans, and in most cases, to be eaten.

While these labels 'vermin' 'pest' 'lab animal' and 'livestock' sanction the inflicting of pain or death on animals, there is also the label of 'pet'. Being a 'pet' entitles an animal to particular types of privilege and protection that other animals do not enjoy. Humans form bonds of affection with their 'pet' and share parts of their lives with it. There is also the notion that a person 'owns' their pet. This notion of ownership colours the relationship because it considers a pet as an item of property that can be acquired, possessed, sold or discarded.

Over the course of many centuries, people in Western cultures have come to view themselves as separate from animals. This separation is a *bifurcation* of nature (animals) from culture (humans). This bifurcation accelerated with the post-Enlightenment rise of science and empiricism; it was a shift away from relying on traditional and innate ideas. Through a modern lens, animals came to be viewed as lacking in intelligence or consciousness. These ideas justified social licence for animals to be objectified and commodified, used (and abused) as resources for experimentation, food and work, pets and companion animals, and in entertainment (zoos, circuses). Animals were not being seen as sentient, emotional beings.

During the first half of the 20th century, concern about this inhumane view of animals was growing and coalescing into organised forms. Darwin's paradigm-shifting ideas about evolution gave these concerns a new scientific basis. Understanding was developing that people are part of the animal kingdom, closely related to mammals such as primates, just as in the old Indigenous and Māori nature narratives. Animal welfare was the major locus of concern, due to the manner in which individual animals were being treated, and legislation to protect certain species of animals began to be enacted.

As time proceeded and new technologies became available, research results were showing that, in fact, animals are complex creatures, and that, just like us, they experience pleasure and pain, fear and distress. It is not only primates, with their close genetic similarities to humans, who are now seen as sentient. Large vertebrates such as cows on dairy farms are known to mourn the separation from their newly-born calves. Overturning earlier conceptions of (lack of) intelligence, invertebrates have been shown to have consciousness. Recent research has shown that bumblebees play, a biological phenomenon believed to contribute to the healthy development of both cognitive and motor skill abilities in living entities. Age and sex differences were noted in bumblebee play behaviour, reflecting similar evidence about play in larger vertebrates.

Rising concern over how humans treat animals, especially within modern industrialised nation-states, led to discussions amongst philosophers, animal welfare advocates, ethologists, and in society at large, under the umbrella of the recently-emerging field of animal ethics, straddling science and philosophy. There are two main approaches to a theory of animal ethics, a *unifying* approach and a *relational* approach, with fuzzy boundaries between the two.

## **Unifying theory of animal ethics**

Unifying approaches provide a central or unifying theme around which related concepts can be understood and used. This unifying concept emphasises the similarities or “continuity” between humans and animals. As such, no ethical significance is given to being a human as opposed to being an animal, not a human, because animals suffer just like humans. Therefore animals have rights that should be respected, and as sentient beings, their interests are equal to those of people.

The complexities of life make it very difficult, however, to abide by a single ethical norm, such as ensuring animals avoid suffering. It is impossible to live our lives in a way that is shaped by one specific ideal. Tolerance for others entails that people are ethical pluralists. Adding to the difficulty is that, even though we know we ought to do something, we do not do it. While part of this issue is that we are capricious, it can also be that we are not motivated to ‘do the right thing’, a type of ethical schizophrenia. For example, despite our knowledge about how animals suffer in food production, many people do not change their diets and become vegetarian. Another reason to change one’s diet is the link between meat production and climate change from greenhouse gases, yet only some people are motivated to change for this reason.

Another difficult aspect of the unifying approach to animal ethics relates to being ‘human’. If we focus only on one principle such as suffering, being sentient and/or rights, we blur the differences between our attitudes to other humans and to animals, and run the risk of disregarding our humanity. Whether or not the suffering being is human is rendered irrelevant; to privilege humans above animals then becomes an example of species bias or speciesism. It is virtually impossible, however, to move away from the ethical importance of being human and having a unique position in our world.

## **Relational theory of animal ethics**

The relational approach is a contrasting view of human-animal relationships, which accentuates the “otherness” of animals. Such otherness acknowledges the differences between humans and animals and, at the same time, recognises that animals are in perpetual webs of

relationships with humans. Humans thus understand themselves both in relation with, and in contrast to, animals.

Nevertheless, a relational approach involves boundaries; we perceive our relationship with animals by drawing a boundary and defining what occupies one side of the boundary (humans) in contrast with the other-than-humans such as animals who occupy the other side. In doing this, the “particularity” of individual animals is overlooked. The danger involved in adopting a relational approach, therefore, is that we focus on the special nature of being human. The relational approach offers little guidance for actions to be taken, since the suffering of animals is overlooked; the animal’s perspective is absent.

It is important to step back and consider how everyday ideas in the English language embed underlying Western assumptions about human-animal relationships, such as in the unifying and relational traditions. Taken on its own, neither approach seems entirely satisfactory. Quite possibly, each person’s own belief system reflects elements of both traditions, in a particular balance according to their life circumstances. With this history and philosophy of animal ethics in mind, the next section looks at the development and current status of the Three Rs principles (Replacement, Reduction, Refinement) that are the standard formula for animal ethics used in research, testing and teaching.

## **The Three Rs in practice**

The use of animals to explore how the human body ‘works’ was first recorded in ancient Rome, but it was not until the Renaissance that the use of animals in scientific experimentation began to proliferate. Such use of animals was justified by the belief that the experiments would benefit humans, and that animals did not feel pain. Concerns about how animals were being used in experimentation began to grow in the first half of the 20th century. In 1954, the UK Universities Federation for Animal Welfare commissioned William Russell, assisted by Rex Burch, to research how more humane methods could be introduced into scientific research. The outcome of their work was the seminal and key text in the field, *The Principles of Humane Experimental Technique*. This book explains ethical concerns for the welfare of animals in scientific experimentation and introduces the set of principles for research, testing and teaching known as the Three Rs, dubbed the “removal of inhumanity”. They argue that adopting humane methods leads to good data since animals are likely to be less stressed.

The Three Rs are three principles or strategies for the use of animals in research, testing and teaching practice: Replacement, Reduction and Refinement. The principle of **Replacement** means avoiding the use of sentient animals entirely, replacing them with insentient material. **Reduction** means reducing the number of animals being used to the

minimum needed to obtain the required information. **Refinement** means decreasing the incidence or severity of the inhumane procedures being applied to animals when they still need to be used.

These three principles are hierarchical in their logic. Replacement is the ideal, but sometimes cannot be utilised, in which case Reduction applies, whereby the number of animals to be used should be reduced as much as possible. Then the principle of Refinement is applied, with the aim of minimising as much as possible the amount of stress that these animals will endure.

The Three Rs were introduced more than 60 years ago, and since then, advances in information technology, scientific techniques, and understanding of animal behaviour and physiology, have continued to enhance the ability of researchers and scientists to use these strategies for the benefit of animals. Some contemporary definitions of the Three Rs emphasise knowledge gains and welfare benefits, along with minimising inhumane techniques; for example, replacement now often means using high-tech models and tools instead of animals, for example in veterinary surgery education. When the number of animals being used is reduced, care is taken that the experimental design and statistical analysis are robust and add value to scientific knowledge. Refinement has become associated with advancing animal welfare through the use of the latest *in vivo* technologies, alongside furthering understanding about the impact of welfare on animal studies, such as identifying handling techniques that cause the least amount of distress, and re-homing animals once experiments have concluded.

The uptake of the Three Rs by the international academic community, however, has been slow and variable. Two factors support continued and expanding uptake of the Three Rs. One factor is legislation; the other, growing acceptance in the scientific community, through establishment of dedicated national centres and networks in many countries around the world.

The first Three Rs legislation was passed by the European Community in 1986, and updated in 2010. In the USA, public health and animal welfare regulations require consideration of alternatives to animals, framed by the Three Rs. Many other countries also have Three Rs legislation. Dedicated Three Rs research centres began in Europe and the USA from the 1980s, and today there are institutions and digital networks in many countries. For example, the NC3Rs (National Centre for the Replacement, Refinement and Reduction of Animals in Research) is a UK government-funded national centre. The ECOPA website dedicated to the Three Rs began in 2000 and acts as an umbrella for European national platforms, such as Norway's Norecopa.

In Aotearoa New Zealand, there is no legal requirement to use the three Rs in animal research, but the Ministry for Primary Industries (MPI) and the Government encourage their use when animals are used in research, testing or teaching (Ministry for Primary Industries, 2024). It is expected that the three Rs are considered when animal ethics committees review research proposals. MPI partners with the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) to promote a New Zealand-specific three Rs programme that:

- Promotes their understanding and application
- Profiles the contributions made using the three Rs
- Networks and liaises with international three Rs centres.

## **Key ideas of Māori ethics**

Key Māori concepts embody Māori difference in the intellectual plane; they are ancient indigenous concepts, some shared across many related cultures of the South Pacific, with no English equivalents. Hence 'tapu' (originally meaning 'in the presence of ngā atua') has been appropriated intact into international English as 'taboo' (from the Tongan cognate, tabu), while 'mana' (originally meaning 'the ability to maintain balance with ngā atua') has been included whole in New Zealand English.

To understand the Māori ethical concepts depends on understanding the Māori concept of a person as being composed of two parts – the physical (tinana, or waitahi) and the metaphysical (wairua). The primordial forces are referred to as ngā atua (the deities or 'gods'). These metaphysical-spiritual aspects bring in mauri (life force), hau (vitality), wehi (respect for ngā atua) and ihi (energy), but these concepts make sense only within an overall comprehension of te ao Māori, starting with the master concept of whakapapa. An important disclaimer is to acknowledge that the following explanations of Māori concepts are very introductory, certainly not definitive. Our aim is to consider each concept in an introductory way, in relation to an overall Māori worldview or paradigm.

Whakapapa forms the base of a simple model of Māori thought. Standing on whakapapa are the central ontological concepts of tapu and mana. The third layer consists of the triadic Māori ethical values, pono, tika, aroha. Taken together, these six key Māori concepts structure a worldview that somewhat differs from the standard Western paradigm of reality. Here, our aim is to highlight conceptual differences between Māori and Western knowledge; this emphasis on difference is not to be taken as anti-science or anti-Western. As already noted prior, this work is motivated by wanting to contribute towards better science and better animal ethics.

Interviews with Māori practitioners/informants demonstrate the six concepts within real-world contexts.

## **Whakapapa**

Whakapapa comes first, as the base or ground on which the other Māori concepts are built. The concept of whakapapa was mentioned repeatedly by our Māori informants as underpinning a sense of respect for animals that was part of their personal understanding of a Māori worldview. For example, behavioural ecologist Dr Leilani Walker explained how she had been brought up to understand that whakapapa affords mana to *all* animals, thus making them deserving of being treated with respect, an ethical dimension in Māori knowledge of animals that is absent from evolutionary theory. Whakapapa is an expansive, generative concept, and an important locus of difference between Western/scientific and Māori/Indigenous thinking. The concept of whakapapa goes beyond genealogy, with which it is normally associated, in the sense of collections of ancestor names, specific lineages and family histories. As a concept, whakapapa is a way of organising complex arrays of information, likened to a mind map, a folk taxonomy, and a cognitive gestalt.

Whakapapa in this more conceptual sense of 'organising information' relates to the nature narratives, which collectively act as an indigenous paradigm to explain the world and how it came to be. Whakapapa in this way fills a similar role for Māori knowledge systems as does the theory and philosophy of science in Western knowledge. Whakapapa as a knowledge system explains how the world came to be, structures empirical knowledge about the natural world, and guides ethical action in the Māori world. The concept of whakapapa provides a basis for understanding human-animal relationships, which acts as a rationale for humans to respect the animals with whom we share our homelands and world.

The other concepts build on from whakapapa. Tapu and mana are basic ontological concepts that operate on whakapapa; and pono, tika and aroha are triadic ethical concepts to guide right behaviour towards other people and all living and non-living elements of the natural world.

## **Tapu, mana**

Tapu and mana are closely related foundational concepts in te ao Māori without which nothing else would exist. Both tapu and mana are related to spiritual power, since ngā atua are the source of both tapu and mana. In te ao Māori, all animals have mana by virtue of being loved descendants of ngā atua, and must therefore be treated with respect. As ancient indigenous concepts, the full meaning of these concepts cannot be understood by equating them with English words, since even using several English words or phrases in combination does not give a complete meaning-in-context. Tapu has long been equated to sacred or holy, and the meaning of mana is generally reduced to prestige or dignity.

Tapu is a dynamic state of heightened spiritual charge, which applies to life-and-death situations, as it does to the space between hosts and guests in the formalities of a pōwhiri (welcome ceremony). Another example of tapu is when people are warned to stay clear of a place if, for example, whakairo (carvings) are being erected, until they have been made noa (opposite of tapu - unrestricted) through karakia and whakanoa ceremony. In some situations, an animal such as a mokomoko (gecko/skink) is considered tapu because it is a representative or intermediary of ngā atua. Tapu and mana are key concepts in Māori philosophy, but do not work like scientific concepts, first because they are ethically loaded, and secondly because they do not admit of precise, stable definitions in the terms required by science.

In our interviews, tapu was mentioned in relation to the death of animals as crossing the divide between ora (life) and mate (death), such as the planned euthanasia of laboratory animals, as in Dr Kimiora Henare's cancer research involving mice, or the premature deaths of animals seen in natural populations, for example, high death rates of sea lion pups in their breeding colonies on Subantarctic Islands, which Ngāi Tahu observers described to Rauhina Scott-Fyfe in their sea lion research.

Mana was also frequently mentioned by our informants, including the above-noted idea that every animal has its own mana, and thus deserves to be treated with respect, including animals being used for food. For example, Hilton Collier recalls growing up on his family's farm, when animals 'for the house' (an expression referring to the selection of a beast to fill the freezer and provide a season of meals for the farm family) would be gently walked into the killing house. They would be rested and watered, then dispatched and dressed. Everything contributed to the meat being tasty and tender, and the experience of having looked after the animal from birth through to fulfilling its purpose as food.

In contrast, Hilton explains, when tired animals are loaded hurriedly onto a truck in hot conditions, they arrive at the works stressed, with elevated glycogen levels. The meat will not set properly and the resulting steak will not be tender, but chewy, dark-coloured and terrible. Whereas if that animal were respected, its meat could be presented in premium quality, and the farmer would be justified in expecting consumers to pay a premium, because they can guarantee that steak will be consistently tender. Even in the business of food production it is important to remember that 'all living things have mana' and, if treated as such, they end up providing a much better food experience.

### **Pono, tika, aroha**

Pono, tika and aroha are central values or ethical concepts of te ao Māori, which provide guidance for right action and leadership. Pono is concerned with knowledge of reality, tika is concerned with right response to reality,



and aroha is concerned with a loving response to reality. Although each word can stand alone, when considered together they encompass a sense of “doing the right thing with integrity and love.” All our informants showed aroha for the animals they told us about. Aroha can include interest, devotion to study, and economic decisions. For example, Te Winiwini King made efforts to conserve the remnants of original bush in the gullies on his land, refusing to earn money by grazing cows, knowing how this would damage what was left of the natural forest ecology. Based on holistic and relational concepts, Māori ethics are less likely to fall prey to anthropocentrism, whereby only humans have rights, which are not extended to non-human animals. Taken together, pono, tika and aroha entail respect and a sense of responsibility for truth and the natural world, of which both animals and humans are part.

These key Māori concepts also give rise to more elaborated concepts, such as *whanaungatanga*, which refers to the recognition of relationships based on whakapapa, and *rangatiratanga*, which refers to qualities of leadership and autonomy based on upholding cultural values. Two more such concepts, *kaitiakitanga* and *manaakitanga*, feature prominently in discussions about incorporating Māori knowledge in environmental research and education.

### **Kaitiaki, kaitiakitanga**

In the original sense, a kaitiaki is a spiritual guardian, often appearing as an animal that acts as an intermediary or messenger between people and the spirit realms of ngā atua and the deceased. In some areas of the country, including among the Ngāti Wai people of Whāngarūrū, these spiritual intermediaries were known as ‘mana’ not as ‘kaitiaki.’ The kaitiaki (or mana) is a messenger from beyond the realms of the here-and-now. It is appearing in this place at this time because it is bringing a message for a specific person, either from ngā atua, or from a deceased loved one. A person who is visited by a kaitiaki (mana) must decipher the meaning of this ‘tohu’ (sign) appearing in the animal world.

In 1992 a key paper was written for the Ministry of the Environment by Māori Marsden with Te Aroha Henare, *Kaitiakitanga: A Definitive Introduction to the Holistic World View of the Māori*. Marsden and Henare took the elaborated concept of ‘kaitiakitanga’ as a Māori metaphor for a notion of ‘conservation’ of nature. This paper had long-term influence on the question of including Māori concepts into environmental policy, but blurred the line between authentic and tokenistic expressions of culture.

### **Manaaki, manaakitanga**

Manaaki combines the two words ‘mana’ and ‘aki’ (to exert or encourage), so refers to practices that uphold mana. Adding the suffix ‘tanga’ gives the meaning of a general quality of attention to mana in relationships.

The mana of a host group is maintained and enhanced through generous care of visitors, which is why manaakitanga has come to be equated with the modern notion of hospitality. Manaakitanga might include, for example, providing foods that visitors did not have in their home areas. A more authentic understanding of manaaki as linked to mana extends its application to all forms of thinking and action that enhance mana. Taking responsibility for oneself, treating others with respect, and caring about the non-human inhabitants of the earth, including animals, are all aspects of manaakitanga.

The above ideas of kaitiakitanga and manaakitanga inform Professor Eloise Jilling's ground-breaking work leading Māori veterinary education and equity. Kaitiakitanga has become a metaphor for care of nature; this metaphor is easily extended to a notion of guardianship and care for animals in the veterinary sense, including non-native species (cats and dogs) that make up most of a typical vet's daily work. Kaitiakitanga, thus understood, connects veterinary practice to whakapapa and the webs of connection between people and nature, including animals. As Eloise explains, "There are actual whakapapa connections, ancestral connections in how Māori think about things, that are different from the way non-Māori would." Manaakitanga brings in the three key Māori ethical values of pono, tika, aroha, summed up in combination as 'doing the right thing with integrity and love.' Eloise uses manaakitanga to guide her work as a leader in opening up veterinary education to more actively include Māori people and knowledge.

## **Rāhui**

A rāhui designates what can be done for a specified time in a particular place, which may have become tapu for a time, or be recovering from some adverse event. Rāhui is an example of a tikanga that arises from the principle of kaitiakitanga, and helps to safeguard tapu and mana. Rāhui is the traditional custom of placing temporary restrictions over particular foods or places when their mauri (life force) or hau (vitality) is reduced for whatever reason, including over-harvesting, severe weather events, or a death rendering that place tapu. Rāhui is not about managing resources in the modern sense of 'resource management' but rather about managing people's behaviour in relation to the place/entity/resource. A rāhui is used to prevent food gathering in a place that has become tapu for any reason, such as a drowning, or finding kōiwi (human remains). Another sense of rāhui was given prior, in the example of a rāhui kiore – a kiore reserve, set aside to encourage and manage a population of kiore, a valued food source for inland Māori communities.

## **How do Māori ideas relate to animal ethics?**

To understand oneself as literally related to all the living and non-living elements of the natural world makes a coherent reason for taking care of

nature and is part of an ethos of respect for nature, including animals, that is defined using the metaphor of 'kaitiakitanga' for conservation. The Māori system of values underwritten by whakapapa is defined as an "environmental virtue ethic" consisting of big ideas deriving from the cosmogenic whakapapa narratives, as well as personal qualities for being good citizens of the natural world.

Recent discussions on national committees have been taking place in Aotearoa New Zealand about adopting Respect as a 'Fourth R.' The problem with this suggestion is that it overlooks the fact that the Three Rs already share an underlying attitude of respect for animals. Dale and Fisher discuss how each of the Three Rs aligns with respect for animals, yet seem not to notice how this alignment invalidates the logic of their suggestion. The principles of scientific reasoning mean not adding more Rs unless logically necessary. Since the Three Rs are interlinked and hierarchical, as explained prior, it is unhelpful to add another 'R' that is antecedent to the existing Three Rs, and of a different order or level as a concept. A chain of reasoning from the Māori concepts based on whakapapa, captured in Relate and Respect, provides a solid connection between Respect and the Three Rs.

Māori knowledge is holistic in the sense that it does not attempt to separate 'facts' from 'values' and thereby enables us to act with integrity and compassion towards the natural world, including treating animals with dignity and respect. Understood in this principled way, respect for animals underpins the intent and effect of the Three Rs strategies to alleviate harm to animals used in research, testing and teaching. Expectations for how people should act towards animals are guided by the Māori concepts of manaakitanga and kaitiakitanga, which allow us to "go beyond what is legally required, developing and fostering a Culture of Care" for animals; a commitment to improving animal welfare and scientific quality. These discussions show how a Māori conceptual framework, with its associated principles and practices, offers an approach to thinking about animal ethics that avoids the anthropocentrism in science and Western thinking about animals, and provides a logical reason to respect animals, which leads to and supports the Three Rs.

## **Summary**

In the Māori world, animals are related to humans through whakapapa. Animals as well as humans are descendants of ngā atua, and as such are considered to have their own mana and tapu. Ngā atua are able to operate in the natural world and communicate with humans using animals as their messengers and intermediaries. These basic understandings mean that animals command respect from humans, both as kin, and as ethically-significant beings in their own right. Therefore, animals must be treated with tika, pono and aroha, which work together and form a simple

but robust framework for right action and respect for the tapu and mana of whakapapa, also expressed as 'doing the right thing with integrity and love.' In this way, Māori philosophical concepts underpin respect for truth and the natural world, of which both animals and humans are part. Whakapapa relationships embed respect for animals in Māori philosophy, which thereby provides conceptual support for the Three Rs.

## Glossary of Māori words

*As used in this resource.*

Aotearoa	A Māori name for New Zealand
Aroha	Love in all senses, compassion, essence of being human
Hau	Vitality, spiritual energy
Kaitiaki(tanga)	Guardian(ship)
Karakia	Blessing, incantation to ngā atua
Mana	Innate prestige or power 'from the gods'
Manaaki(tanga)	Attend(ing) to mana, enhancing own or others' mana
Māori	Indigenous peoples of Aotearoa
Mātauranga(Māori)	(Māori) knowledge
Mauri	Life force, living essence
Ngā atua	The deities, gods, primordial cosmic forces
Pono	Truth, honesty, reality
Rāhui	A restriction or temporary ban to restore ecological health
Tapu	Taboo, set apart or restricted, in the presence of ngā atua
Tangata whenua	Person representing their ancestral inherited lands
Te ao Māori	The Māori world(view)
Te reo Māori	The Māori language
Te Tiriti o Waitangi	Māori version of the founding national Treaty of Waitangi
Tika	Justice, integrity, what is right in cultural terms
Tikanga	Customs, ethical practices
Whakanoa	To lift or remove tapu
Whakapapa	Genealogy, webs of relationships

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## **Additional resources**

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