

Research paper

## Mother/Nature: An Intersectional Analysis of the Patriarchal Nature of Anthropocentric Practices and Discourses Surrounding Nuclear Testing and Industrial Pollution

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### ABSTRACT

This paper argues that nuclear testing and industrial pollution constitute acute, intersectional, and complex forms of patriarchal violence. It does so through comparing government discourses surrounding the justification of nuclear testing in the Pacific Ocean and industrial pollution in Northamptonshire. Both led to issues of infertility, miscarriage, and children born with birth defects. It proposes a new theoretical framework called 'Interkincentrism', which builds upon existing frameworks of intersectionality, incorporating Indigenous epistemologies to highlight the ways in which marginalised women have doubly suffered - both physically and psychologically - from anthropocentric, patriarchal practices. This dual suffering will be examined through a Kincentric lens that considers women and nature as in unison with one another. The dominant narratives, social hierarchies, and dichotomies of systemic oppressors have facilitated transgenerational violence, subjugation, and silencing of the marginalised 'subaltern' from society (Spivak, 1988, 28). As many environmentalists have noted, these systems have worked simultaneously to commodify and destroy the Earth, apparently for the sake of human progress. This anthropocentric way of thinking is heavily dependent on similar dichotomies that view humans as subjects and nature as an object. Drawing on Spivak (1988), the paper analyses the extent to which anthropocentric discourses silenced or excluded women's suffering and highlights the inherently patriarchal nature of these practices. Through inter-textual analysis, it identifies key themes within these narratives such as 'rationalist' or 'civilisationist' lenses, obstetric violence, and the omission of women from both scientific research and the political sphere. Through its case studies, the paper demonstrates the harmful, complex, specific effects of systemic anthropocentric misogyny in both discourse and practice. These produce catastrophic effects for marginalised women's mental and physical wellbeing, intimately connected to the environment.

**Keywords:** mothers, nature, intersectionality, discourse, anthropocentrism

*'The nuclear scientists gave birth to male progeny with the ultimate power of violent domination over female nature' (Cohn, 1987, 701).*

This paper argues that the destructive practices of nuclear testing and industrial pollution are best characterised as systems of oppression, particularly affecting women, Indigenous people, and the environment. Using

intertextual analysis, the article compares different government discourses surrounding the justification of harmful anthropocentric, patriarchal projects including nuclear testing in the Pacific Islands and industrial pollution in Northamptonshire, England, which directly led to issues of infertility, miscarriage, and children born with congenital malformations. Drawing on Spivak (1988), it will also argue that these discourses silenced or excluded women's suffering. Identifying key themes in narratives such as 'human/ nature' or 'primitive/civilisationist' dichotomies, it aims to demonstrate the harmful effects of systemic anthropocentrism in discourse and the catastrophic effects it can have for marginalised women's mental and physical wellbeing.

Many environmental scholars have advocated that Western practises and epistemologies related to capitalism and modernity have relied heavily upon a dominant view of the separation between humans and nature. This separation helped to justify capitalist expansion, without concern for the accompanying destructive commodification of the environment (Escobar, 2010, p. 21; Paterson, 2006; Steffen et al., 2011; Adams and Mulligan, 2012). This view, known as anthropocentrism, not only separates humans and nature, but holds a 'destructive, utilitarian, and cornucopian' view of natural resources, whilst claiming humans are the most powerful rulers of the Earth. Many scholars are now calling for new modes of ecocentric thinking, such as the incorporation of Indigenous epistemologies and practices like anthropomorphism, defined as attributing "intentionality and mental states to living and non-living [non-human] entities" (Urquiza-Haas & Kotschal, 2015, p. 167) and kincentrism, the belief that all living human and non-human beings are interconnected, or 'part of an extended ecological family', which entails humans having mutual respect and sharing a 'kinship' with nature (Salmón, 2000; Gould et al., 2019; Zelenski et al., 2023; Chungyalpa et al., 2025, p. 54).

The interconnectedness between the destruction of nature and the simultaneously negative physical and psychological impact these anthropocentric practices and discourses have had on women has previously been under-researched across the social sciences. The modern international system, its social norms, practices, and epistemologies are defined by three main pillars of domination: colonialism, capitalism, and the patriarchy (Santos, 2024, p. 176). Postcolonial, feminist, and Marxist scholars have noted that, rather than working separately, these systemic modes of oppression work in unison with one another to subjugate, marginalise, commodify and destroy 'subaltern' peoples, epistemologies, and their environments in the name of growth, modernity and civilisation (Spivak, 1988; Inoue, 2018; Santos, 2024). There are varied debates on who and what constitutes the 'subaltern', but essentially it means those individuals or communities that suffer under one or more of the three dominant modes of oppression or are classed as 'other' to these societal 'norms' (Spivak, 1988; Crenshaw, 1989; Mignolo, 2005; Collins, 2020).

For centuries, these oppressive forces have gestated dominant narratives, social hierarchies, and various dichotomies like 'human/nature' or 'rational/emotional' to seemingly protect society from the 'primitive' and to instead 'enlighten' the 'civilised' (Spivak, 1988, p. 98; Escobar, 2010, p. 21; Santos, 2024, p. 182). However, as feminist scholars such as Harding (1998, p. 165) observe, 'in each dichotomy, the former is to control the latter lest the latter threaten to overwhelm the former, and the threatening "latter" in each case appears to be systematically associated with "the feminine"'. Meanwhile, postcolonial scholars like Santos (2024) emphasise the racial and civilizationist foundations supporting the 'Human/Nature' dichotomy, and the hierarchies it creates in society. He writes, 'the humanity-nature dichotomy is the matrix for the dichotomies that naturalize the inferiority of racialized and sexualized bodies [...] for example, one of the terms of the dichotomy (woman, black) is viewed as inferior because it is closer to nature...' (Santos, 2024, p. 142). These racial and androcentric ideas are ingrained into Western ways of thinking — our language, knowledge systems and epistemologies, scientific practices, and everyday politics all demonstrate these dichotomies, resulting in the subjugation and marginalisation of these 'subaltern' people.

Spivak's essay, *Can the Subaltern Speak?* (1988) analyses the silencing of marginalized voices due to the overarching dominance of the colonial and patriarchal system. She writes, 'let us now move to consider the margins (one can just as well say the silent, silenced centre) of the circuit marked out by this epistemic violence, men and women among the illiterate peasantry, the tribals, the lowest strata of the urban subproletariat' (Spivak, 1988, p. 25). Whilst she points out the lack of analysis in these marginalized or silenced voices of 'consistently troublesome' societies (Colin et al, 1980), she also expertly notes that women within these societies are doubly marginalized, for 'the subaltern as female is even more deeply in shadow...' (Spivak, 1988, p. 28). Crenshaw (1989, 1991) called for intersectional analysis, which highlights how systems of oppression work simultaneously to doubly oppress people within various social categories such as gender, ethnicity, and class; and displays how these categories are socially constructed and fluid (Davis, 2008; Cho et al., 2013; Djoudi et al., 2016, p. 3).

As stated before, the three main pillars of domination: capitalism, colonialism, and the patriarchy, work in unison to oppress those marginalised. Whilst the women represented in these case studies are of various ethnicities and socio-economic backgrounds, using an intersectional approach will help to unify resistance and strengthen the voices of the 'subaltern' women in society to address the systemic violence of anthropocentric practices. Research

such as this is vital in expanding on current theories of intersectionality, ecocentrism, and in highlighting the misogynistic impacts of anthropocentrism.

Structurally, this paper will first outline the two case studies in which harmful anthropocentric practises, namely, nuclear testing in the Pacific Islands and industrial pollution in Northamptonshire have harmed the mental and physical wellbeing of women, specifically pregnant mothers and their unborn foetuses. During the outline of these case studies, it will pay attention to the colonial and capitalist undertones of anthropocentric practices, as they target both Indigenous women, and working-class women — both regarded as 'subaltern' by these systemic modes of oppression. Following this, the article conducts a literature review, building upon existing frameworks of intersectionality and Indigenous epistemologies to then go on to develop a new theoretical framework called 'Interkincentrism'. Interkincentrism draws on both intersectionality and indigenous kincentrism. Through this framework, it views both women and nature as sentient identities with deep-rooted physical and metaphysical connections with each other, whilst simultaneously acknowledging their 'subaltern' status and lack of voice in society due to the silencing nature of systemic oppression (Spivak, 1988). The paper then outlines its innovative approach to Critical Discourse Analysis (CDA), incorporating Discourse Tracing (DT), omission, and intertextuality. The theoretical framework and methodology will then be applied to case studies in which marginalised women have suffered both physically and psychologically from harmful anthropocentric practises and environmental degradation. It will not only highlight the dualities between women and nature in these cases but will aim to expose the androcentricity of environmental degradation.

## NUCLEAR TESTING IN THE PACIFIC OCEAN

Research has recently shown that Indigenous populations in both postcolonial and settler colonial states have been disproportionately affected by nuclear testing carried out by the United States (Endres, 2009; Hoover et al., 2012; Gilbert, 2013; Johnston, 2015, p. 197; Johnson, 2013; Keown, 2018). This act has been labelled by scholars as 'nuclear colonialism' as it directly impacts the 'health and autonomy' of Indigenous groups and their land (Kuletz, 2002; LaDuke, 1993; Endres, 2009; Johnson, 2013).

The Marshall Islands in the Pacific were used as Washington's nuclear weapons experiment, with hundreds of nuclear detonations occurring between 1946–1996 (Kuletz, 2002, pp. 127–128). This included the most powerful nuclear weapon ever tested by the United States, the hydrogen bomb Castle Bravo, in Bikini Atoll (Genz et al., 2018). Researchers estimate this detonation alone to have been 'a thousand times more powerful' than both the Hiroshima and Nagasaki bombs (Taitingfong, 2020). Due to this testing, 'six islands were vaporized and fourteen others were left uninhabitable' (Kuletz, 2002, pp. 127–128).

Exposure to radiation has affected neighbouring islands, impacting much of the wildlife and traditional food sources that Indigenous Pacific islanders have survived on for thousands of years, such as fish. Consequentially many communities have suffered from radiation sickness, thyroid disease, and various cancers (Hakewill & Dallemagne, 1995; Genz et al., 2018). Alongside this, women living in the Marshall Islands who are exposed to radiation are particularly susceptible to issues surrounding infertility and pregnancy, including miscarriages and the birth of children with defects, some born with 'one eye' or what did not look like a foetus, but what Marshallese islander Lijon Eknilang (1995) described as a 'bunch of grapes' (International Court of Justice, 1995; DeLoughrey, 2012). The islands were used, and are still used, as testing sites due to their ideal 'isolation' from society (Taitingfong, 2020).

LaDuke notes that 'native communities are focal points for the excrement of industrial society, a situation made possible by both the colonial relationship of the United States [...] to Native peoples and general conditions of environmental racism...' (LaDuke, 1993, p. 101).

These instances of testing and environmental destruction which have taken place on Indigenous lands have been repeatedly justified by governments due to the perceived expendability of the land and its people, and the prioritisation of development and profit over human and environmental wellbeing (Taitingfong, 2020, p. 169). The World Health Organization has recently labelled islands as 'ideal' geographical locations for scientific testing due to their 'isolated' nature (WHO, 2021). Yet, Indigenous scholars argue that this is an extension of colonial thinking, with colonisers originally framing the Pacific Islands as 'tiny dots in a vast ocean', which is contradictory to the Indigenous communities' view of their home (Hau'ofa, 1994). Protest movements including riots, demonstrations, art, and literature standing against nuclear testing in the Pacific Islands have been generated as a response. However, at the time of the Castle Bravo tests, the area was largely economically dependent on the US government and France, and many rioters were jailed for 'disturbing the peace' (Keown, 2018, p. 589).

Within this context, which is shaped by intersecting power relations, there is a discernible link between anthropocentric practices, environmental degradation, and the physical harm to mothers and their unborn foetuses as a direct result of these processes.

## Industrial pollution in Northamptonshire, England

Whilst extensive research has been carried out on the harmful biological effects of nuclear testing and radiation, there is significantly less research highlighting the harmful effects of other harmful anthropocentric practices, namely, the effects of industrial pollution and toxic waste.

Throughout the 1980s and 1990s, Corby, a small town in Northamptonshire, UK underwent a development project which included the demolition of the town's steelworks site, and the removal and dumping of harmful and toxic industrial waste from the area (Adetunji, 2009). Shortly afterward, a 'cluster' of children born with congenital abnormalities was recorded, and in a groundbreaking court case in 2009, Corby district council was found guilty of negligence (Adetunji, 2009; Quinn, 2010; Hirsch, 2009; Williams, 2009). The 'atmospheric soup of toxic materials' released from the site, including dioxins, Polycyclic Aromatic Hydrocarbons (PAHs), nickel, chromium, and cadmium were consumed by mothers during pregnancy through the inhalation of dust, all of which were found by toxicologists to be significant teratogenic compounds (Hirsch, 2009; *Corby Group Litigation v Corby District Council*, 2009, pp. 259–262). Teratogenic compounds are environmental agents which directly cause permanent malformations or birth defects, or death in the foetus or embryo which is not linked to genetics (Gilbert-Barnes, 2010, p. 99). Studies have shown clear links between the consumption of cadmium and birth defects, including 'ectrodactyly (the absence of one or several fingers or toes), postaxial polydactyly (an extra finger or toe), syndactyly (webbing), brachydactyly (abnormally short digits), adactyly (absence of any digits), and meromelia' (where hands or feet are directly attached to the body due to missing or severely shortened limbs). Most of these congenital malformations were exhibited in the claimants (Gammell, 2009; *Corby Group Litigation v Corby District Council*, 2009, p. 261; Williams, 2009). While the claimants received compensation, mothers who had undergone difficult and traumatic pregnancies with complications, miscarriage, and years of campaigning received nothing (*Business Insider*, 2025, February 27).

Stephen Grime KC, the barrister representing Corby district council during the court hearings has since stated that his harsh questioning, which often suggested the mother's 'memories about the dust or what the lorries were doing — things like that — were wrong', or that the mothers were at fault, had 'made things worse' for them (BBC News, 2025). Annabel Jones, who produced the recent series depicting the case, speculated that "perhaps because it was Corby, an industrial town", many of the population had not heard of it, and "if it had happened in the Home Counties, oh my goodness would we have heard of it" (Channel 4, 2025). One article by the *Socialist Worker* (Bates, 2025) states that, 'the women were poisoned because they were working class. And the way they were dismissed by council bosses smacked of class prejudice and sexism'. So little research has been published surrounding this case, insinuating its 'lack of importance' due to its 'working class' victims, that this paper has had to draw information from other studies regarding the impacts of industrial pollution to highlight the negative effects it has on pregnant mothers and fetuses.

## LITERATURE REVIEW

This section of the paper will first outline the Anthropocene, signifying "an era where human activity has become a key driving force that is altering the earth's history" (Adam, 2024, p. 192) and, more specifically how systemic modes of oppression; capitalism, colonialism, and patriarchy all encourage and feed off of harmful anthropocentric practices. This will be followed by a sub-section highlighting the patriarchal nature of anthropocentric practices. The following sub-section will outline feminist theories of intersectionality, and Indigenous worldviews on kincentrism, from which will be drawn key aspects such as relativity, the interconnectedness of women and nature, social justice, and Spivak's theories on the silencing of the 'subaltern' voice to develop the paper's own theoretical framework, which we have coined 'Interkincentrism'.

## The Anthropocene and Manthropocene: The 'unintentional' perverseness of anthropocentric practices

Many environmental scholars have advocated that the destruction of the environment is due to systems of capitalism and modernity, which have relied heavily upon the dominant Western-centric narrative that humans are separate from, and even rule over, nature (Adams and Mulligan, 2012; Steffen et al., 2011; Escobar, 2010, p. 21; Paterson, 2006). This theory is labelled 'anthropocentrism' (Sessions, 1974; Steffen et al., 2011; Lewis & Maslin, 2015; Harrington, 2016). Whilst the dichotomising of human and nature has long been used to justify the latter's harmful commodification, post-colonial scholars would argue these dichotomies have been used historically to segregate people and create racial hierarchies (Mignolo, 2005; Smedley & Smedley, 2005; Aman, 2015, p. 210; Santos, 2024, p. 182). Mignolo (2005, p. 395) explains that racism is a belief system curated by the elite to 'evaluate the degree of humanness' to justify domination over certain populations, however this scale of 'humanness' is not limited to race and can be used regarding religion and class for instance. Often the human/nature dichotomy takes other forms, for example, civilised/primitive.

Meanwhile, feminist scholars argue that similar dichotomies have been used to justify patriarchal domination over women (Jay, 1981; Bock, 1991; Bondi, 1992; Mumby & Putnam, 1992; James, 1997; Harding, 1998; Prokhovnik, 2012). Harding (1998, p. 165) notes that masculine vs. feminine dichotomies can manifest as reason vs. emotion, or rationality vs. irrationality. Similarly, to racialised human vs. nature dichotomies, these constitute an attempt to 'subhuman the groups they chose to subjugate' (Harding, 1998, p. 174). There are core parallels here between the dichotomies used by elites to justify the destruction and commodification of nature, and those used to enforce the longstanding destruction and commodification of marginalised, or 'subaltern', individuals and communities.

It is important to highlight the disproportionately destructive and invasive impact these harmful anthropocentric practices have on women's bodies — particularly those of the mother, as well as their foetus.

The multitude of chemicals which have unsolicitedly penetrated women's bodies through anthropocentric practices like nuclear testing and industrial waste dumping have had drastic effects on their reproductive health. For example, mercury — a common element released during the process of nuclear testing — penetrates the barrier of a mother's placenta, directly inhibiting the development of the foetus (Peek, 2007, p. 120). Exposure to the chemical correlates with increased likelihood of dysmenorrhea (particularly painful menstruation) or amenorrhoea (the absence of menstruation), polycystic ovarian syndrome (PCOS), premenstrual syndrome, and endometriosis, all of which are health conditions that only affect biological women (Bjørklund et al., 2019, p. 323; US Environmental Protection Agency, 2024).

Dioxin, 'one of the most toxic chemicals' in the world, 'is insidious in that once it enters the human body, the only way that it can be expelled is during the process of breastfeeding' (Peek, 2007, p. 120). Heavy traces of dioxin were found to be present in both nuclear fallout and industrial waste, meanwhile ionizing radiation is prone to attacking female foetuses due to difference in vulnerability (Grech, 2014; Scherb et al., 2015).

Female sex hormones such as progesterone and oestrogen enhance the toxicity of cadmium, resulting in higher risk of poisoning (Vahter et al., 2007; Shimada et al., 2012).

This research highlights the patriarchal nature of anthropocentric practices. Though seemingly unintentional, practices like nuclear testing and industrial waste dumping disproportionately affect women, both at a chemical level and a societal level.

Feminist and postcolonial scholars have pointed out that the commodification and destruction of the Earth have coincided with the subjugation and marginalisation of women and 'subaltern' people (Spivak, 1988; Inoue, 2018; Santos, 2024). In this way, the Anthropocene can be conceived of as the 'Manthropocene'.

## Intersectionality

Crenshaw (1989, 1991) and Collins (2020) call for an 'intersectional' analysis which highlights how systems work simultaneously to doubly oppress people within various socially constructed categories such as gender, ethnicity, and class (Davis, 2008; Cho et al., 2013; Djoudi et al., 2016, p. 3). Two core principles of intersectionality — social justice and relationality — will be adopted in this paper's theoretical framework (Collins, 2020, p. 43).

Cho et al. (2013, p. 795) argues that what is important is 'what intersectionality does rather than what intersectionality is' and therefore it is crucial to this paper that its engagement with intersectionality contributes social justice and wellbeing. Merely criticising current systems of oppression which work to marginalise and destroy communities without working towards developing theoretical solutions as forms of resistance to those systems could result in what is often viewed as a naïve, 'top-down approach' which prioritises 'shallow incorporation' instead of conversation, inclusion, and positive change (Collins, 2020, p. 216).

Relationality contradicts Western individualist beliefs through examining the interconnectedness between different communities, through lived experiences, histories, and 'personal and collective consciousness' (Hoffman, 2000; Zalewski, 2019; Kling, 2019; Collins, 2020). Relationality is important in highlighting that these anthropocentric practices are inherently patriarchal, and harmful for all women across the globe, not just some women, and further conversations and co-productions of knowledge on how to overcome these issues are greatly beneficial. This paper will also draw upon relationality to demonstrate the interconnectedness between women and nature, for it is the simultaneous destruction of both, and their reliance upon each other, which we must fully consider.

Collins (2020, p. 218) states that our ability to create a more just future 'depends on how well we can practice radical relationality and deep reciprocity with each other and with nonhuman animate and inanimate beings and work together in co-resistance'. Ecofeminists draw upon intersectionality and relationality to understand the interconnectedness between women and nature, and the oppressive forces that dominate them (Kings, 2017, p. 70).

The theoretical framework will draw upon Spivak's (1988) intersectional essay, *Can the Subaltern Speak?* which analyses the silencing of marginalized voices due to the overarching dominance of the colonial and patriarchal system. She writes, 'let us now move to consider the margins (one can just as well say the silent, silenced centre)

of the circuit marked out by this epistemic violence, men and women among the illiterate peasantry, the tribals, the lowest strata of the urban subproletariat' (Spivak, 1988, p. 25). She notes that women within these societies are doubly marginalized, for 'the subaltern as female is even more deeply in shadow...' (Spivak, 1988, p. 28).

Spivak's (1988) analysis of the silencing of marginalised women sits at the very heart of what this paper considers and is ultimately what brings these two cases together. The women of Northamptonshire and the women of the Marshall Islands were not only exposed to the harmful toxins released by anthropocentric practices, but also to the systemic racism, classism, and misogyny, that underpin them. Their concerns were met with dismissal, silencing and neglect. When analysing government discourses surrounding these cases later in the article, it is evident that both groups resisted, yet both were systemically suppressed.

### **Kincentrism**

Santos (2014, p. 22) outlines the key problem that has led to anthropocentric destruction - 'the scientific knowledge that brought us here will not be able to get us out of here, we need other knowledges, we need other conceptions of time, we need other conceptions of productivity, we need other conceptions of spatial scale'. The recovery and integration of non-western epistemologies is needed to redress this issue.

One of the core belief systems within Indigenous epistemologies is kincentrism. It is the idea that all living human and non-human beings are interconnected, or 'part of an extended ecological family', and therefore humans must live with a mutual respect and appreciation for all of nature (Salmón, 2000; Gould et al., 2019; Zelenski et al., 2023; Chungyalpa et al., 2025, p. 54). Through teachings and practice, Indigenous groups care for their environment as they would for their own family or community, and 'cultivate a healthy and loving relationship with Mother Earth' (Chungyalpa et al., 2025, p. 53). This stewardship to the environment brings forth richer land to grow food and medicinal herbs, allowing Indigenous communities to continue to live healthily, as well as providing them with a deep sense of belonging and positive wellbeing (Celidwen & Keltner, 2023). These modes of thought can have profound impacts, as has been seen in the Te Awa Tupua Act, that granted legal personhood to the Whanganui River in New Zealand, creating a groundbreaking approach to environmental law, inspired by Indigenous tradition (Kramm, 2020). A world viewed through this perspective would be one in which nuclear testing and industrial pollution would not so readily be enacted upon vulnerable populations.

### **Theoretical framework: Interkincentrism**

Combining core aspects of intersectionality such as relationality, social justice, and Spivak's (1988) ideas on silencing marginalised women, with Indigenous understandings of kincentrism, this paper proposes a new theoretical framework, titled, *Interkincentrism*.

Interkincentrism can be used as a framework to interrogate the justification of harmful anthropocentric practices through the systemic silencing, or dismissal, of the women who are most affected by them, through continuing patriarchal and colonial narratives.

In this context, relationality is used to demonstrate the interconnectedness between women's suffering, despite their social and geographical differences, for it exposes how all women are jointly and disproportionately affected by anthropocentric practices. It analyses the mutually dependent relationship between mothers and the environment surrounding them. Here, the paper integrates the core aspect of kincentrism, the Indigenous belief that humans and non-human life are connected in an 'extended ecological family' in which humans develop 'a healthy and loving relationship with Mother Earth' (Chungyalpa et al., 2025, p. 53). By framing the Earth as a mother figure, the paper aims to expose the patriarchal aspects of ecological harm and reclaim social justice not only for the human mothers in these cases but for Mother Earth as a 'subaltern subject' (Spivak, 1988).

Spivak's (1988) *Can the Subaltern Speak* will sit at the heart of this framework, as we interrogate the systemic silencing, dismissal, and inaccurate portrayal of mothers during their resistance to, or concerns regarding, these practices and how they have affected their own bodies and identities. By incorporating Interkincentrism, we view both human mothers and non-human nature as marginalised, silenced, and interconnected 'subaltern' subjects who have experienced the harmful effects of patriarchal anthropocentrism.

Keeping social justice at the forefront of this paper, we propose that interkincentrism is not merely an analytical device, but an essential tool in connecting and reclaiming voices that have been systemically dismissed by elites. It will highlight the unjust treatment of 'subaltern' women and contribute to the co-production of knowledge surrounding the connections between environmental damage and patriarchal violence.

### **METHODOLOGY – DISCOURSE TRACING, OMISSION, AND INTERTEXTUALITY**

Understanding the legitimising discourse around nuclear testing and industrial pollution as a power-laden, patriarchal, system of oppression, this paper advances an innovative approach of critical discourse analysis (CDA), combining elements of discourse tracing (DT), with notions of intertextuality. The core goal of CDA is "to reveal

discourses buried in language used to maintain power and sustain existing relations" (Bouvier & Machin, 2018, p. 178). This ethos is closely aligned to the theoretical approach of Spivak (1988), as well as to the overall approach of this paper. Thus, it is a strong fit and facilitates an analysis of government discourse that provides grounding in power, ideology, and context. Context is especially important here, as it places emphasis on "the social structures and processes within which individuals or groups as social historical subjects, create meanings in their interaction with texts" (Wodak & Meyer, 2009, p. 4).

The paper also utilises Fairclough (1992) and Wodak's (2011) work on intertextuality and interdiscursivity — making it possible to understand how these power constructs were framed, recontextualised, and transformed. Intertextuality is partially defined as the "insertion of history into a text and of this text into history" (Kristeva, 1986, p. 39), but also works as a comparative tool, useful for comparing the case studies of nuclear testing and industrial pollution. Discourses being 'recontextualised' and 'transformed', respectively refer to the "replication of... elements, themes, frames and identities from their original context, into new, connected ones" (Walsh, 2024, p. 632), and "tangible... changes when one discourse is converting from one social practice to another" (Wu & Zhang, 2016, p. 442). Understood in this way, it can be seen how governments received legitimacy and constructed systems of exploitation through tapping into and reimagining pre-existing narratives, images, and discursive constructs. Elite discourse, loaded with ideology, is understood as an act of "controlling and constraining the non-powerful participants in society" (Ramanathan & Bee Hoon, 2015, p. 2), in this case women, Indigenous peoples, and the environment. Innovatively, understanding the environment as a "participant" speaks to this paper's emphasis on kincentrism — understanding ecosystems, oceans, and environment as moral agents.

Despite its conceptual merits, CDA is oft criticised for lacking specificity in its methodological approach, refraining from providing a detailed roadmap for analysis. As LeGreco and Tracy (2009, p. 20) argue, "the systematic ways in which the methods unfold are left implicit". Fortunately, they provided a solution to this problem, borrowing from the previously thought irreconcilable approaches of process tracing, discourse analysis, and content analysis. They called this approach discourse tracing, enabling scholars to "critically analyse the power relations associated with change and proceed with a systematic data analysis process that is accessible and transparent" (LeGreco & Tracy, 2009, p. 17). It borrows from process tracing, especially that of George and Bennett (2005), incorporating a methodological outlook that "identifies causal processes across time and space... [and] offers some useful language for analysis, including their method of structured, focused comparison" (LeGreco & Tracy, 2009, p. 21). DT deals directly with the critique that CDA is vague by offering a process-driven, chronological, and straightforward approach to conducting discourse analysis across time.

They define 4 clear steps, which are outlined below. However, as this paper is also concerned with notions of silencing, forgetting, oversight, and intertextuality, it innovatively adds two additional steps to the overall method, 2A and 2B. It is also concerned with understanding how these power-laden narratives interact with the lived experience of women in the Marshall Islands and Corby, and so adds step 2C:

- 1) Establish a case, or series of cases, around particular rupture points – conduct a wide literature review on these topics.
- 2) Collect three types of data – micro (e.g. social media posts, TV interviews, news articles), macro (e.g. official government statements, policy), and meso (social/historical/contextual information). This data then needs to be carefully organised in a chronological manner. Then, themes should be identified across the dataset, done through close reading.

#### 2A) Omission

This paper adds this step to encourage scholars not only to consider what themes are present, but which themes, voices, and perspectives are entirely missing from the dataset. This is crucial for this project in particular, as patriarchal systems of oppression have so readily overlooked the concerns of women, Indigenous communities, and the environment. What is not said can be just as significant as what is.

Example: Omission of women's bodily harm in discourse

The following excerpt is from President Ronald Reagan's (1983) public address advocating for nuclear testing in the Pacific;

*'we maintain peace through strength; weakness only invites aggression' and 'a [nuclear] freeze now would make us less, not more, secure and would raise, not reduce the risks of war'*

Whilst Reagan's speech conveys typically masculine themes of sovereign strength, political power, and security, it notably omits any discussion of the health problems, ecological damage and displacement experienced by Marshallese people as a result of nuclear testing in the Pacific. Later releasing of classified documents have since proven that the US government were aware of the negative impact nuclear testing had on the Marshall Islands. Therefore, the absence of this in Reagan's speech is intentional. This omission functions discursively by pushing colonial narratives of technological progression and sovereign strength for Western populations, whilst intentionally ignoring the physical, psychological and ecological harm felt disproportionately by those communities

in the global South. Those in power benefit from public support without having to take accountability for the harm caused by the very practices they are trying to advocate for.

## 2B) Intertextuality/Inter-discursivity

Understanding the contextual information surrounding certain discourses depends on understanding the core narratives that underpin the history of that practice, industry, or phenomenon, in this case nuclear testing and dumping. This step asks scholars to consider a range of historical examples, as well as their surrounding discourses, to see how the case studies fit into a wider social practice, recontextualising, reimagining, and transforming these power-laden narratives. In turn, it also encourages scholars to compare the ways in which their chosen case studies speak the same power-laden language, providing comparative richness.

Example: Scientific determination of 'Safe'

In a news article claiming the safety of the Corby steelworks reclamation project, a doctor claims there was no causal link between the chemicals found and foetal abnormalities.

Dr Anthony Emmerson, consultant neonatal paediatrician at St Mary's Hospital, Manchester, concludes that the only teratogen (the agent that causes malformation or birth defects in foetuses) known to have produced human limb defects in the UK is thalidomide. (*The Independent*, 1989, February 13)

In 1960 an advert for thalidomide, branded as Distaval, emphasises the 'safety' of the product. These statements made by medical professionals emphasise the safety of harmful substances without engaging in prior medical research with pregnant women. Using intertextuality allows for the exploration of the repetition of patriarchal scientific narratives in dominant discourses which ultimately lead to gendered harm in these cases.

2C) Collect discursive data from the 'subjects' affected by the power-laden discourse and reflect on the contrast between the two.

- 1) These themes then go on to establish the project's research questions. Case studies are written up essentially as answers to these questions. This, of course, can include comparative elements.
- 2) Draw core conclusions, reflect on theoretical implications, think about practical implications for future.

The paper does not only include discourse from state elites but also incorporates statements from the women affected by nuclear testing and industrial pollution. This is done to build a holistic understanding of these practices and show the contrast between elite discourses and non-elite lived experience.

Acknowledging the authors identities as white, British researchers, and the ways that colonial power structures continue to shape Western academic research, this project adopts an explicitly decolonial methodological approach (Smith, 2012). It is vital that researchers resist the extractive, colonial tendencies of research, and conduct research concerning indigenous communities in a self-critical, reflective, community-centred way (Smith, 2012; Goyes et al., 2021). Researchers must be accountable to communities -not just academic institutions- and respectful of indigenous knowledge systems. They must recognise and acknowledge ongoing colonialism and be willing to question their own right to do such research (Smith, 2012). These are the decolonial principles which will guide this work.

## Data collection methods

Firstly, for this study, micro data was gathered from various publicly available sources, including newspapers such as 'The Guardian', 'BBC, News', 'The Independent' and 'The Telegraph'. News sources for the Corby case ranged from during and immediately after the court case (February 2009- June 2010) with additional reflectional articles such as barrister Stephen Grimes KC's public apology to the women of Corby (March 2025) also included. 30 articles were analysed, however due to the nature of this research being concerned with a deep analysis of discourse, purposive sampling was used to select ten articles which most clearly demonstrate instances of epistemic harm. Direct quotes were also taken from the BBC (2020) documentary, 'Toxic Town: The Corby Poisonings' and the (1985) documentary, 'Half Life: A Parable for the Nuclear Age'.

Secondly, macro data (official government statements, addresses, and policies) was collected. These include Darlene Keju's speech at the World Council of Churches (WCC) in 1983, Lijon Eknilang's address to the International Court of Justice (ICJ) in a public sitting in 1995, and public addresses made by prominent American figures such as the Atomic Energy Commission chairman, Admiral Lewis Strauss during Marshall Island testing in 1954 and President Ronald Reagan advocating for nuclear testing in March, 1983. These statements were accessed online through the International Court of Justice archives, or through the above newspapers, or Johnson's (2013) 'Don't ever whisper: Darlene Keju, Pacific health pioneer, champion for nuclear survivors'. The (2009) Corby litigation document (Corby Group Litigation v Corby Borough Council [2009] EWHC 1944 (TCC)) was also analysed.

Finally, social, historical and contextual information was gathered in relation to the discourses gathered above. Due to the nature of this paper, and its concern with the silencing, forgetting, and oversight of marginalised

women, particularly close attention was given to the omission of information by governments and ruling bodies. This omission of information appears in this paper in two prominent forms:

- 1) The intentional omission of classified government or scientific documents which contradict the 'safety' of the anthropocentric practices outlined in these case studies, many of which are still inaccessible to the public.
- 2) The 'unintentional' omission or exclusion of women from scientific research both historically and within these case studies.

The data showed 4 recurrent themes which demonstrate the systemic oversight, silencing, and patriarchal harm of marginalised women and the environment within the context of anthropocentric practices like nuclear testing and industrial pollution:

- 1) Women's voices as emotional accounts of reproductive trauma and obstetric violence
- 2) Domination of discourses by authoritative (male) governments, bodies, and scientists
- 3) Denial and backlash for women who resisted
- 4) 'Unintentional' omission of women in research and 'intentional' omission of documents.

These themes were then structured into three key areas of analysis:

- 1) Women's voices as emotional accounts of reproductive trauma and obstetric violence
- 2) 'Irrational' female vs 'rational' male governing bodies
- 3) Western science, epistemic violence and omission of women in research.

### **Limitations to research**

This research is reliant on publicly available media, government archives and medical sources. Acknowledging that these available sources are products curated by the very power structures this project is analysing, the various constraints are outlined below. Media sources including the stated news outlets and documentaries present issues of underlying bias, Western-centric narratives, and carefully monitored language. These sources are used solely to analyse the narratives and dominant public discourses and discursive framing circulating both at the time of, and in reflection of both case studies by Western media and are not to be interpreted as factual evidence. Relying on publicly available government documents also provides various constraints. Many documents surrounding nuclear testing in the Marshall Islands and Industrial planning in Corby remain intentionally classified. Whilst this limits the data set, the methodological approach of this research is concerned with omission, and therefore recognising the concealment of information by those in power only further enhances its empirical findings. This research is centred around epistemic violence, and the omission of information and knowledge regarding ecological and societal harm are a direct form of this mode of violence within the context of these cases studies.

This research uses intertextuality and interdiscursivity to explore the epistemic violence that surrounds anthropocentric practices, including dominant narratives in Western media, the exclusion and delegitimization of women's suffering and the colonial framing of harmful ecological projects as technological progression. The sources used for this research are regarded as objects of discourse which are valuable for analysing these themes and are not relied upon as authoritative or factual evidence. Whilst these discourses inadvertently worsened or justified harm to women and their environment in these case studies, this research does not state that these discourses directly caused this harm.

## **ANALYSIS**

### **Women's voices as emotional accounts of reproductive trauma and obstetric violence**

In both cases, the women who were directly affected by anthropocentric practices used their first-hand accounts as a way of exposing these systems. Through interviews with news outlets and in court hearings, the mothers of Corby gave first-hand accounts of their children's adverse symptoms and the emotional trauma the obstetric violence or dismissal from medical professionals caused them. Obstetric violence or neglect can occur when medical professional's dismiss mother's concerns during or after childbirth, or when mother's are blamed for unfavourable outcomes (Fielding-Singh and Dmowska, 2022). Obstetric violence exists within the ongoing context of historical gender discrimination within medicine, the dismissal of women's experiences and delegitimization of medical issues which disproportionately impact women (Jordan, 1997; Labuski, 2015; Kempner, 2017; Waggoner, 2017; Hudson, 2022).

Meanwhile, activists from the Marshall Islands take a collectivist approach, speaking on behalf of 'many' women about both the emotional toll of reproductive trauma experienced by Marshallese women, and the simultaneous societal shame faced by women in a conservative nation still exhibiting the effects of evangelical colonialism (Johnson, 2013). 'Evangelical colonialism' in the context of the Marshall islands refers to the distinct connection between the arrival of American Christian missionaries who aimed to proselytise the islanders, and the arrival of

European colonial powers seeking to control the territory- both movements enforcing ‘modern’ ideas of Christianity, capitalism, and conservative patriarchal norms (Rudiak-Gould, 2010; Carucci, 2020).

Darlene Keju, a Marshallese activist, ‘was willing to depart from socially acceptable behaviour for women’ and used her voice to expose the US government’s cover-up of the physical and environmental harm nuclear testing had on Pacific Islanders and their land (Johnson, 2013, 8). On 30<sup>th</sup> July 1983 Darlene was invited to speak on behalf of the Marshall Islands at the World Council of Churches (WCC) assembly in Vancouver. Using emotional storytelling to depict Marshallese women’s experiences, she was the first woman to publicly speak about the serious health and environmental implications of nuclear testing:

*Since [the nuclear tests] we have had endless health problems. For example, we have hundreds of women who have miscarriages, we have leukaemia cancers, we have thyroid cancers, we have stillbirth babies.... We have babies we call jellyfish babies. A baby that is born on the labour table, and it moves up and down like this [Darlene gestured with her left hand rising and falling to the podium]. It is a colourful, ugly thing that does not shape like a human being. It moves up and down on the labour table because that thing is breathing. That is - a baby. We have more than ten of these all over, throughout the Islands.*

(Johnson, 2013, p. 142)

Darlene’s graphic account of ‘jellyfish babies’ invokes mixed emotions of sympathy and horror. Straying away from statistics and scientific language typically used by the government, she creates an image for the audience which accurately portrays the physical dehumanisation of Marshallese mothers and their children. The uncanniness of a ‘thing that does not shape like a human being’ results in a visceral reaction from the audience, who until this moment were completely unaware of these issues.

*I cannot have children. I have had miscarriages on seven occasions. On one of those occasions, I miscarried after four months. The child I miscarried was severely deformed; it had only one eye.... In privacy, [women] give birth, not to children as we like to think of them, but to things we could only describe as "octopuses", "apples", "turtles", and other things in our experience. We do not have Marshallese words for these kinds of babies because they were never born before the radiation came.... Women on Rongelap, Likiep, Ailuk and other atolls in the Marshall Islands have given birth to these "monster babies".*

Lijon Eknilang (ICJ, 1995)

Lijon Eknilang, a fellow Marshallese activist made this speech in front of the International Court of Justice in 1995. She similarly uses emotional storytelling to depict clear imagery of the dehumanising of the Marshallese people. Giving a graphic account of her own child, ‘severely deformed’ with ‘only one eye’.

This style of language, in the context of these women speaking on behalf of a nation in resistance against colonial powers, evokes Fanon and Césaire’s concept of ‘thingification’, or the dehumanisation of the ‘native’ subject, to justify colonial violence (Fanon, 1963; Césaire, 2023, p. 42). When Fanon wrote ‘you are making us into monstrosities’ to describe the physical and psychological dehumanisation of the colonial subject, this example constitutes a visceral hyper-realisation of the concept within the lived experience of the sub-altern.

Read through a kincentric, relational perspective, these women promote the solidarity and interconnectedness of the Marshallese people. Though not outwardly stating it, their repetition of the word ‘we’, and inclusion of people ‘throughout’ the Islands, portrays the Marshallese people as a large, interconnected community, who all feel the effects of anthropocentric harm, rather than an individualist one, made up of many separate islands. By unifying the Marshallese people and their Islands, she strengthens their resistance and undermines the US government’s public narrative which suggests only some of the islands were affected (Johnson, 2013; Half Life: A Parable for the Nuclear Age, 1985).

Drawing on Spivak’s (1988) notion that the ‘subaltern as female is even more deeply in shadow’, both women’s speeches highlight the double suffering of Marshallese women - who alongside risk of numerous cancers and other health issues, are also faced with the horrors of reproductive trauma.

*I too have three tumours in me. I’m about to have surgery. And I’m frightened. I don’t know whether I should have children or not. Because I don’t know whether I’ll have a child that is like a jellyfish baby. I don’t know whether I will have a child that has six fingers - a child that has a horn on its head.*

(Johnson, 2013, 143)

*Women have experienced many reproductive cancers and abnormal births. Marshallese women suffer silently and differently from the men who were exposed to radiation. Our culture and religion teaches us that reproductive abnormalities are a sign that women have been unfaithful to their husbands. For this reason, many of my friends keep quiet about the strange births they had.*

Lijon Eknilang speaking before the International Court of Justice (ICJ, 1995).

Not only do these women’s voices outline the physical horror of reproductive trauma, but they also acutely describe the psychological and sociological burdens Marshallese women are facing. Keju discusses the feelings of fear and uncertainty she has surrounding childbirth, which applies to many Marshallese women. Eknilang goes further by presenting the audience with feelings of isolation and shame surrounding women going through these traumatic events.

The mothers of Corby also recollected the reproductive trauma they experienced, highlighting the obstetric neglect they received after childbirth, and their shared feelings of grief, guilt and being overlooked. They did so through interviews in newspapers and documentaries.

The mothers outline their feelings of dismissal and obstetric neglect in the interviews below.

*They never gave you any answers. It's just sometimes mother nature doesn't get it quite right, that was their explanation*  
(Tracey Taylor, BBC, 2020)

*When [my son] was born ... I remember them saying something and [my son's] dad was very upset, but no one was telling me nothing. As if they were hiding something all the time.*  
(Susan McIntyre, 2020, BBC)

When Sarah Person questioned why her son's hands were malformed, doctors said; *oh no that's just how they were formed in the womb.*  
(Sarah Person, 2020, BBC)

Though not outwardly blamed for their children's deformities, the suggestion that 'sometimes mother nature doesn't get it quite right' or 'that's just how they were formed in the womb' implies that there are no external factors contributing to these malformations. Without any medical explanation or guidance, mothers are neglected and left feeling they are to blame. Susan's personal account displays the neglect shown by medical professionals, who spoke with the father of the child, but withheld information from her, 'as if they were hiding something'.

*As a mother, when anything's wrong with your child you think, 'is it me? is it my family line?'*  
(Susan McIntyre, BBC, 2020)

*She passed in our arms. Like most new mums who have lost a child you tend to blame yourself, ask yourself 'was it something I had done?'*  
(Tracey Taylor, BBC, 2020)

*I was always told by my GPs it's just one of those things, "... I would just like to know," says Nathwani, "that I didn't do anything specifically wrong while I was carrying my child. That we didn't do anything bad to cause our children to have these kinds of traumas".*  
(Anita Nathwani, The Guardian, 06/05/2009)

The mothers' narratives centre around their feeling of guilt or self-deprecation and blame. They highlight the psychological issues that come alongside reproductive trauma, medical dismissal and negative birth outcomes.

### **'Irrational' female vs 'Rational' male governing bodies.**

Despite their emotionally vulnerable and compelling arguments, both sets of women were met with backlash dismissal from predominantly male, governing bodies including Corby district council and the United States government.

As previously discussed, the masculine and feminine dichotomies used to subjugate women can manifest as reason vs. emotion or rationality vs. irrationality, and these dichotomies can be used to justify patriarchal harm and delegitimise the feminine (Harding, 1998, 165-174). The following data displays common 'masculine' narratives, which dominated discourse and were used in an attempt to delegitimise women's claims, framing them as 'emotional' or 'irrational' rather than reasonable and true.

As David Wilby QC, the barrister who represented the Corby claimants in court so aptly put it, mothers were disregarded, 'because this was Corby council and they were effectively what people regarded as respectable, that they must be right and they [the mothers] must be wrong' (BBC, 2020). Both the US government and Corby District Council furiously denied any accountability for the harm caused to people through their anthropocentric practices, using their dominating and seemingly 'rational' outlook to delegitimise and discredit women's claims.

Chief executive of Corby district council, Chris Mallender, made the following statements during the trials:

*For the past five years we have thoroughly investigated every aspect of the claims they are making, and we know that there is no link between the reclamation work that was carried out in Corby, over a period of 20 years, and these children's birth defects.*  
(Adetunji, The Guardian, 16/02/2009)

*Our position has always been that there was no link between the reclamation work that was carried out in Corby in past decades and these children's birth defects. That is still our position.*  
(Local Government Chronicle, 29/07/2009)

*The implementation of the program was exemplary. I just don't subscribe to this view that there was something terribly wrong with what was done at the time.*  
(Speaking in 2008, BBC, 2020)

This unwavering denial from a political leader delegitimises mothers claims through several methods. Firstly, repetition reinforces the idea that this narrative is 'rational' and 'true' as there is no change in position despite the

ongoing evidence shown in trial. Secondly, Mallender consolidates the party's position by claiming that the council 'have thoroughly investigated' and that the mother's position is a 'view', rather than a case based on evidence. In doing so, he frames Corby council as a 'rational' body which seeks information, whilst the women of Corby are framed as having 'irrational' opinions that are non-factual.

The mothers of Corby also faced unfair masculine biases of rationality in court proceedings. Fifteen years after the trial, the barrister who represented Corby Borough Council, Stephen Grime KC confessed to delegitimising mothers during the trials. Recorded in the proceedings were accusations against mothers that their actions during pregnancy, such as smoking, were the primary reason for their children's deformities (Miller, 17/03/2025). Grime admitted that the cross examination 'probably made things worse' (BBC News, 05/03/2025).

*In some instances, I had to suggest to them that their memories about the dust or what the lorries were doing - things like that - were wrong.*

(Stephen Grime KC, BBC News, 02/02/2025)

Grimes also warned the women of the dangers of;

*'being seduced by the idea of clusters of cases'*

(BBC News, 05/03/2025).

Historically, patriarchal, racial and class biases have long been exhibited in 'rational' courtrooms, with women's legitimacy often being called into question and victim-blaming commonly occurring (Nigam, 2017; Patton and Smith, 2017).

The official litigation document exhibited underlying misogynistic biases of rationality. In the 'witness evidence' section, a brief description is given underneath the name of the parent or caregiver. The mothers are described as 'sensible', or 'decent, bright sense of humour' or 'down to earth' whilst fathers' or male caregivers' descriptions are 'clear, firm recollection', or 'ring of truth' or 'knowledgeable about lorries and straight' (Corby Group Litigation v Corby Borough Council, 2009, 11-14).

Descriptions of women are based on likeability and temperament, unlike those of men, which are centred around their knowledge, honesty and reliability. Through its unintentional misogyny, this document displays the pre-emptive dismissal of women's accounts. Here, women are 'more deeply in shadow' due to the preexisting patriarchal subconscious of decision-makers in power (Spivak, 1988).

Resistance from Marshallese women received far less subtle backlash from politicians. In retaliation to Keju's 1983 speech at the WCC, US Ambassador Zeder wrote a letter to the Executive secretary, which he also had published in several newspapers (Johnson, 2013, 145). The letter read:

*I must quite honestly tell you that the report is the most nauseating example of bizarre propaganda I have ever seen.*

US Ambassador Zeder (05/08/1983)

Zeder purposefully frames Keju's speech as 'propaganda' to infer that her accusations against the US government are false, misleading and unpatriotic. This McCarthyistic tactic was used during the 'red scare' in the 1950s to instil fear and mistrust in the public and target communists (Gibson, 1988; Foster, 2000; Schmidt, 2004; Ryan, 2020). Scholars have shown that these tactics had underlying tones of misogyny as politicians framed non-conservative, outspoken women in US politics as more 'susceptible' to communism (Storrs, 2003; Ryan, 2020).

Darlene's speech came shortly after a public address made by President Ronald Reagan, who advocated for the development of nuclear weapons with anti-war rhetoric like

*'we maintain peace through strength; weakness only invites aggression' and 'a [nuclear] freeze now would make us less, not more, secure and would raise, not reduce the risks of war'*

(Reagan, 23/03/1983).

By framing Keju's speech as 'propaganda', Zeder is suggesting her political priorities differ from those of the United States government, who claim to prioritise security, 'freedom and peace' (Reagan, 23/03/1983).

## Western science, epistemic violence and omission of women in research

This section discusses the scientific discourse used to delegitimise 'non-scientific' communities' concerns regarding health and environmental issues. It will assess how epistemic violence is used, in both case studies and intertextually, as a weapon to discredit marginalised voices. It will also highlight the systemic misogyny in Western science through the historical omission of women in research.

Modernity is defined by Escobar (2010, 9) as 'the coherence and crystallization of forms (discourses, practices, structures, institutions) that have arisen over the last few hundred years out of a certain cultural and ontological commitment to European societies'. These dominant practices and civilisationist worldviews promote capitalist, patriarchal, and western rationalities, in the name of development, to 'supersede traditions and backwardness' (Escobar and Santos, 2020, 43; Aman, 2015; Mignolo, 2005). Modernity manufactured dominant Western ideas that conventionally masculine 'objective knowledge, reason, and science' were 'the only valid modes of knowing'

(Escobar, 2010; Aman, 2015, 210). This rationalisation of scientific knowledge dismisses feminist and indigenous epistemologies as ‘myths’, ‘superstitions’, or ‘subjectivities’ - thus rendering them ‘irrational’ by comparison (Inoue, 2018, 29; Santos, 2024, 172). Spivak notes that this ‘epistemic violence’ has led to the delegitimization and silencing of the ‘subaltern’ subject through the rationalisation of patriarchal and colonial narratives and belief systems (Spivak, 1988, 28; 1438-9; Mignolo, 2005, 396; Behera, 2007, 351). Epistemic violence and subjugation occur through either the delegitimization of ‘other’ knowledge systems, and the omission of research on the ‘subaltern’ subject.

In these case studies, governments delegitimise women’s claims of health and environmental issues with language that is consistently scientific in nature, drawing on research from ‘experts’ which misleadingly suggests nuclear testing and waste disposal were non-violent practices.

*Dr Anthony Emmerson, consultant neonatal paediatrician at St Mary's Hospital, Manchester, concludes that the only teratogen (the agent that causes malformation or birth defects in foetuses) known to have produced human limb defects in the UK is thalidomide.*

(Verkaik, *The Independent*, 13/02/2009)

In the extract above, a medical expert claims that the only ‘known’ teratogen to produce limb defects in foetuses is thalidomide, delegitimising mother’s claims that they have been affected by the Corby steelworks site as there is no scientific evidence to prove it.

Delegitimization by medical experts is only possible due to the systemic omission of women - particularly pregnant women - in scientific and medical research. As medicine became more ‘scientific’ in the late 19<sup>th</sup> century, the female reproductive system remained ‘steeped in myth and mystery’, and despite evidence that the foetus could be harmed through environmental factors, medical students were taught that the placenta was an excellent barrier (Dally, 1998, 1997-1998).

The dangers of the exclusion of women in scientific research became apparent in the widespread marketing and use of thalidomide as an anti-morning sickness drug for pregnant women during the 1950s, despite companies never having included pregnant women, or pregnant animals in clinical research trials (Timmermans and Leiter, 2000; Weld et al, 2022, 7). UK marketing leaflets for thalidomide (sold under the brand name, Distaval) emphasise the ‘remarkable safety’ of the product, even stating;

*Remember- ‘Distaval’ can safely be given to children... to the elderly... and to the emotionally unstable patient’*

(The Distillers Company Ltd. 1960)

Thalidomide resulted in over 10,000 children born with birth defects like those in the Corby case (Timmermans, 2000, 44). Despite the clear need for more inclusive and extensive clinical research, the immediate response at policy level worldwide was to exclude all ‘Pregnant, Pregnable, and Once-Pregnable People (a.k.a. Women) from Biomedical Research’ (Merton, 1993, 369; Weld et al, 2022, 7-8). Merton (1993, 374) notes that at a political level, the exclusion of women in research reflects the systemic perception of men as ‘human’ and women as ‘a special subgroup’.

Due to the lack of prior research on the harmful effects of inhaling teratogenic toxins whilst pregnant, it was difficult to scientifically prove that Corby council were liable. A crucial example, which demonstrates the recurring pattern in which epistemic violence can lead to harmful physical and psychological outcomes for marginalised groups, the Corby case should act as a precedent for more thorough and inclusive research and testing in both medical and scientific fields.

By contrast, the US government played upon existing colonial narratives which framed the Marshall Islands as remote or scarcely populated to justify the testing of nuclear weapons (DeLoughrey, 2012; Martin, 2018; Shiga, 2019; 285). Indigenous scholars have explained that colonialists were the first to perceive islands as ‘tiny dots in a vast ocean’ (Hau‘ofa, 1995). Government discourses repeatedly conceptualised the ‘little islands of Rongelap, Rongerik, and Uterik’ as separate from the other Islands, discarding the Kincentric reality that all people and their environments are interconnected and interdependent on each other, and ignoring the communities’ reliance on the surrounding ocean (Half Life: A Parable for the Nuclear Age, 1985). The conceptualisation of the Islands as ‘separate’ acted as a foundation for the narrative that only some of the Islands, and only a small percentage of the population, had been affected by ionizing radiation.

Alongside this perpetuated colonial narrative, the US government committed epistemic violence through the omission of ‘classified’ government and scientific documents which discredited the safety and scale of the testing, whilst simultaneously downplaying the physical and environmental harm publicly. Admiral Lewis Strauss, the atomic energy commission chairman addressed the public from the White House in 1954, stating;

*On the day of shot number 1, the meteorologists had predicted a wind condition which should have carried the fallout to the north of the group of small atolls lying to the east of bikini ... The shot was fired. The wind failed to follow the predictions but shift itself of that line and the little islands of Rongelap, Rongerik and Uterik were in the edge of the patch of the fallout... The supposition however that the actual blast of the bomb extended over such an enormous area is of course entirely incorrect.*

Half Life: A Parable for the Nuclear Age, 1985

Here, Strauss outwardly provides false information to the public, blaming an unexpected wind shift for the spread of nuclear fallout. Classified Defense Department weather reports of the day before and day of the Bravo shot have since been obtained, and show that the evening before the test, atmospheric ‘conditions were getting less favourable’ and winds ‘were headed for Rongelap to the East’ (Half Life: A Parable for the Nuclear Age, 1985). This meant officials at the testing site were fully conscious of the fact significantly more islanders would be affected by the blast, disproving the ‘unexpected’ wind shift narrative.

Strauss’ language draws attention to, and outwardly blames, nature in this speech, stating that ‘The wind failed to follow the predictions but shift itself of that line’. By blaming the wind, a natural process, for the increased fallout, he removes accountability from the rational US government, seeking to blame the inherent ‘irrationality’ of nature. By viewing the wind through an interkinetic lens, as both a sentient, agentic part of the Marshallese peoples’ extended ecological family, and a ‘subaltern’ subject, one that is cast ‘deeply in shadow’ by its lack of voice, it is clear that this narrative reflects these recurring themes of epistemic violence, which seek to deflect blame onto, and subjugate subaltern subjects (Spivak, 1988). Political leaders reinforce the narrative that they are rational, benevolent decision-makers, whilst nature, alongside other marginalised subjects, are framed as irrational, wild, extraneous variables that undermine seemingly ‘exemplary’ anthropocentric projects.

Colonial powers lie under the guise of ‘presumed benevolence’, despite carrying out ongoing harmful anthropocentric practices. Meanwhile, traditional Indigenous practices such as whale hunting have been portrayed in the media as ‘savage’ or ‘barbaric’ and highly unethical (Anderson, (23/05/1999); Tizon, (23/05/1999); Stein et al, 2023, 899). Meanwhile, research has shown that patriarchal powers often blame, and place responsibility on women- particularly mothers - for creating environmentally conscious households (Cousins, 2021; Murphy and Parry, 2021).

The US government concealed information regarding the harmful effects of nuclear fallout, downplaying the physical health issues that Marshallese people were facing, which not only justified the continued testing on the Islands, but also meant the Marshallese people were unable to understand or seek treatment for the illnesses they had.

In his speech, Strauss asserts that:

*[the Marshallese] were placed under continuous and competent medical supervision. I visited them there last week.... The 236 natives also appear to be well and happy. Today, a full month after the event the medical staff on Kwajalein have advised us that they anticipate no illness bar of course diseases which may be hereafter contracted.*

Half Life: A Parable for the Nuclear Age, 1985

These government discourses do not align with the obtained classified documents, which report much higher rates of ionizing radiation on the affected islands. A 1955 Atomic Energy Commission report entitled ‘Radioactive Debris From Operation Castle, Islands of the Mid-Pacific’ included tables listing the doses of radiation fallout. Three years later, the US National Bureau of Standards released a report which stated the public limit of non-harmful exposure was 500 mrem per year (Johnson, 2013, 403). The report showed that these doses were greatly exceeded on more than ten of the populated Atolls on this list.

Government narratives also do not align with the narratives of the Marshallese people who experienced the fallout from the tests. Lijon Eknilang describes the aftermath of the tests:

*The fall-out that our bodies were exposed to caused the blisters and other sores we experienced over the weeks that followed. Many of us lost our hair, too. The fall-out was in the air we breathed, in the fresh water we drank, and in the food we ate during the days after Bravo. This caused internal exposure and sickness.*

(Lijon Eknilang speaking before the International Court of Justice, November 1995, 25)

Eknilang’s narrative conveys the shared experience of most Marshallese people who were directly affected by the fallout, yet these narratives were erased from mainstream media and all government discourses. These ‘subaltern’ voices were silenced through the omission of their suffering.

## CONCLUSION

This paper has shown that anthropocentric practices and discourses are not only inherently colonial, but also inherently patriarchal. Using a dualistic framework of interkincentrism, which highlights both the interconnectedness of women and the natural environment, and the colonial and patriarchal silencing of marginalised voices to justify oppressive power relations, it has demonstrated the use of scientific, rationalistic language by western male governments to delegitimise and subjugate the women who suffer from harmful anthropocentric practices.

An analysis of the discourses surrounding nuclear testing in the Marshall Islands and industrial pollution in Northamptonshire has demonstrated several key points. Firstly, that patriarchal structures allow authoritative governments to frame themselves as ‘rational’, whilst simultaneously framing women’s health concerns as

'irrational' or emotional', thus delegitimising and silencing women's narratives. A defining example of this is US Ambassador Zeder's retaliation to Keju's 1983 speech at the WCC, where he framed her report as 'bizarre propaganda' against the US government, exhibiting the patriarchal delegitimization of gendered activism. Secondly, longstanding patriarchal and colonial structures continue to commit epistemic violence and erasure, prioritising Western science over both Indigenous epistemologies and the lived experiences of marginalised women. Examples include the colonial framing of the Marshal Islands as 'remote' or 'isolated' to justify nuclear testing, or the patriarchal structures which allow for the exclusion of women in medical research, later leading to obstetric violence and reproductive harm. This epistemic violence has permitted the justification of harmful anthropocentric practices in the name of 'development', and the degradation of both marginalised groups and non-human entities, leading to the physical harm of both women, and the natural world. Paying particularly close attention to omission has allowed this paper to demonstrate how the omission of women in research, and the classification of scientific documents has strengthened government narratives that anthropocentric practices like Industrial pollution and nuclear testing are less dangerous than women claim them to be.

Incorporating intertextuality into the methodology has provided both historical and contextual evidence which confirms that these cases are not coincidental but are primary examples of how longstanding systemic patriarchal and colonial violence is inherent within anthropocentric practices, science, and politics in the contemporary international system. Male-dominated governing bodies manipulate existing western dichotomies such as 'human/nature' and 'rational/irrational' in public discourse to reinforce longstanding gendered hierarchies which aim to silence subaltern suffering, allowing for the continuation of patriarchal violence through anthropocentric practices.

This paper calls for the integration of Interkincentrism in feminist studies and environmental scholarly research. When discussing anthropocentric harm, society cannot continue to follow the Western narrative that humans and non-humans are separate, and that environmental degradation will not also lead to the physical and emotional harm of Indigenous and working-class women, alongside many other marginalised groups. It must also be recognised that capitalist and colonial 'progress' are inherently patriarchal, and therefore discourses surrounding these practices must be analysed through an intersectional feminist lens as well as a postcolonial one.

More recently, governments have come to recognise certain areas of nature as political agents, one example being the Whanganui River in New Zealand, the first to be officially granted the rights and status of a legal entity to promote its 'health and wellbeing' (New Zealand Ministry of Justice 2017, 15 and 88; Kramm, 2020). Whilst this is progressive at a policy level, it is important to recognise that society needs to focus on building a more Kincentric approach to anthropocentric practices more widely. Incorporating both Indigenous and feminist epistemologies and their lived experiences into political discourse and academic research on anthropocentric practices will allow for new knowledges to be shared, innovative health and environmental strategies to be put in place, and the awareness of, and prevention of cases like this in the future.

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## **Ethical statement**

This research does not contain any studies with human or animal participants. Data was obtained through publicly available sources, and therefore ethical approval was not required.

## **Competing interests**

The authors declare there were no competing personal or financial interests when conducting this research.

## **Author contributions**

F.B.: conceptualization, project administration, literature review, data collection, data analysis, material preparation, writing, investigation, visualization, editing, critical revision, and final approval of the article; T.W.: methodology, resources, verification, editing.

## Data availability

The data supporting the findings of this study are openly available online. Specific URLs are provided in the reference list.

## AI disclosure

No AI technologies were used for this research.

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