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'A mother's intuition: it's real and we have to believe in it': how the maternal is used to promote vaccine refusal on Instagram

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ABSTRACT

In this article we examine the proliferation of anti-vaccine content on social media during the COVID-19 pandemic. We employ a case study approach to analyse the techniques used by 13 anti-vaccine influencers to promote vaccine refusal on Instagram for 19 months from January 2020 to July 2021. Our findings reveal that the maternal is strategically invoked in anti-vaccine content by appealing to three interrelated ideal types: the protective mother; the intuitive mother and the doting mother. These portrayals of the maternal are used to encourage vaccine refusal by presenting hegemonic ideals of the 'good mother' as one who is natural, holistic and authentic; depicting anti-vaccination as a feminine ideal to which mothers ought to aspire. Authenticity is framed here as a form of embodied expertise, uncorrupted by culture, politics and the medical establishment. Our findings question the pejorative portrayal of suburban mothers in popular media as critical actors in the anti-vaccine movement by revealing the ways anti-vaccine influencers strategically target mothers on social media to achieve visibility, attention and to support their cause.

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Introduction

Reports suggest that mothers bear the primary responsibility for decisions regarding their children's health (Kaiser Family Foundation, 2005), including the decision on whether to vaccinate their children (Petts & Niemeyer, 2004). There is a common assumption that suburban mums represent a significant proportion of anti-vaccine advocates. Beliefs of this kind are perpetuated by the media. For example, during the pandemic a series of headlines explicitly identified mothers as responsible for spreading medical misinformation: what was referred to as '*Pinterest moms*' (Winter, 2020), '*Whole Foods moms*' (Lubrano, 2019) and 'QAmom' (Dickson, 2020). While there is a rich body of literature on the social determinants of parental decision-making on childhood vaccination, less

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attention has been paid to the ways in which mothers are strategically targeted by anti-vaccine advocates. In this article we compensate for this neglect by examining how the maternal is appealed to, and represented, by anti-vaccine advocates online during the pandemic. This is achieved by analysing the communicative techniques used by a series of high-profile anti-vaccine influencers, referred to as the 'Disinformation Dozen', on Instagram for 19 months from 1 January 2020 to 31 July 2021. Our findings reveal the ways these influencers strategically attempt to appeal to mothers as the subject and object of anti-vaccine content online, questioning the common assumption that suburban mums are solely responsible for the decision not to vaccinate their children.

The anti-vaccine movement: from 'lone wolves' to social networks

A brief history of the anti-vaccine movement

Opposition to vaccination has existed as long as vaccination itself (Wolfe & Sharp, 2002). Widespread smallpox vaccination began in the early 1800s, following Edward Jenner's 1796 cowpox experiments, in which he showed that a child could be protected from smallpox if they were infected with lymph from a cowpox blister. When Jenner's discoveries were published in 1798, they were met with objections on religious, scientific and political grounds (The College of Physicians of Philadelphia, 2018). Throughout the nineteenth century there were cycles of protests and opposition to vaccines in the US and the UK. Anti-vaccination leagues emerged in Britain in response to vaccination acts passed between 1840 and 1853, which made vaccination compulsory in the UK. Members of these groups opposed mandatory vaccinations, which they saw as a violation of civil liberties (Wolfe & Sharp, 2002). From 1879 to 1900, several anti-vaccination leagues were founded in the US. Anti-vaccination advocates depicted vaccines as ineffective, harmful and an infringement of individual human rights (Kaufman, 1967, pp. 471–473). The anti-vaccine movement began to ease in the twentieth century with the improvement of medical technologies and practice (Kaufman, 1967, p. 478), sanitation (Omer, 2020) and the introduction of The Vaccination Act of 1898 in Britain that removed mandatory vaccination for children and penalties for those parents who did not believe in a vaccination's efficacy or safety (Wolfe & Sharp, 2002).

The anti-vaccine movement began to regain momentum in the 1970s (Omer, 2020). During this period, vaccine controversies tended to focus on the efficacy and safety of vaccines, especially the pertussis (DTP) vaccine following a study reporting that 36 children suffered neurological conditions as a result of DTP immunisation (Kulenkampff et al., 1974). The public backlash against the pertussis vaccine began in Britain before spreading to Europe, Japan, the US, the Soviet Union and Australia, resulting in a series of whooping cough epidemics across the globe (Baker, 2003). Although the media were accused of exaggerating the vaccine's potential to cause harm, members of the public and medical profession displayed genuine uncertainties regarding the safety and efficacy of the vaccine (Baker, 2003). In Britain, these concerns resulted in The Vaccine Damage Payments Act 1979, which provided lump-sum benefits to children who had become severely disabled as a result of vaccination, and the Association of Parents of Vaccine Damaged Children, an advocacy group established in 1973 which brought together parents who believed their children's disabilities resulted from pertussis immunisation

(Robinson, 1981). In 1997, another routine childhood immunisation, the Measles, Mumps, Rubella (MMR) vaccine, generated controversy. In a retracted paper in *The Lancet*, Andrew Wakefield and his colleagues falsely claimed that there was a connection between the MMR vaccine, autism and bowel disease. The paper propelled Wakefield to notoriety and reignited the anti-vaccine movement (The College of Physicians of Philadelphia, 2018). Wakefield's paper was one of many contributors to the anti-vaccine movement; the key difference is that his study received widespread media attention (Berman, 2020), coinciding with the advent of the search engine, Google, and the rise of the global internet. Although Wakefield was struck off the medical register in Britain in 2010, he remains a prominent figure of the anti-vaccine movement today, directing films that question the safety of vaccines and the intentions of the government and pharmaceutical industry, harnessing social media to build and sustain a loyal online following.

The anti-vaccine movement and the internet

While the feelings and beliefs that underlie vaccine opposition have remained relatively consistent since Edward Jenner introduced vaccination in the late eighteenth century, the communicative strategies used by anti-vaccine advocates have been transformed by the internet. Digital technologies have altered how we communicate and build relationships. They have also informed how we share knowledge, negotiate and assert social values (CCDH, 2021a). The low barriers to entry enable ordinary internet users to create and share anti-vaccine content online (Baker & Rojek, 2019b). While many of the original anti-vaccinationists were 'lone wolves' aiming to convince others of the danger of vaccination (Kaufman, 1967, p. 464), social networks enable these individuals to find like-minded communities online, affirm anti-vaccine sentiments and amplify controversial content (Smith & Graham, 2019). Anti-vaccine advocates exploit the affordances – action possibilities permitted by a specific technology (Bucher & Helmond, 2018) – of social media (e.g., using hashtags to extend visibility/audience reach). Today, anti-vaccine advocates are assisted by savvy marketing campaigns that strategically exploit racial minorities' past grievances with government healthcare agencies (e.g., the Tuskegee Study of Untreated Syphilis in black males in the US from 1932 to 1972) to sow distrust of vaccines in 'communities of colour' (CCDH, 2021a). Anti-vaccine advocates also appeal to public fears about vaccine ingredients as 'artificial' and 'harmful' (e.g., the mercury-based preservative, Thiomersal) by implying a causal link between vaccines and autism. Many of these online marketing campaigns deliberately target mothers as the primary caregivers of children. Anti-vaccine messaging is also amplified on social media by influencers, who pursue fame online as a vocation for profit (Baker, 2021). Influencers with large and loyal followings are able to increase the visibility of anti-vaccine content. Crucially, influencers also tend to be more trusted than the mainstream media and public health authorities because they appear authentic, autonomous and accessible (Baker & Rojek, 2019a). In addition to appearing more relatable and trustworthy than medical professionals, influencers have the capacity to persuade their followers to refuse vaccination and to cross-pollinate their ideas in like-minded communities (e.g., holistic health communities with overlapping concerns about State control in the form of government lockdowns and vaccine mandates).

Despite vaccines being recognised as one of the most successful ways to eliminate or reduce the incidence of infectious disease, vaccine hesitancy appears to be increasing among parents (Ward et al., 2019). Research suggests that many parents who vaccinate their children express fears and doubts regarding immunisation (Dubé et al., 2015) with survey data from the US indicating that 11% of parents have refused at least one recommended vaccine (Freed et al., 2010). Rates of personal belief exemptions have also increased in the US with California reaching rates as high as 20% (California Department of Health, 2015). Given the importance of vaccination for public health, a large body of research has focused on identifying the determinants of parental decision-making about vaccination, including parents' knowledge, attitudes, beliefs and socio-demographic characteristics. Research suggests that vaccine refusal is higher among those who adopt alternative, natural lifestyles (Bobel, 2010; Reich, 2014), and express high levels of distrust of medical professionals (Gullion et al., 2008). Historically, the anti-vaccine movement has been associated with left-wing politics. More recently, however, anti-vaccine advocates have been visible among conservatives, especially in the US where pro-Trump, far-right groups perceive vaccines as part of a globalist agenda and an infringement of their individual rights and civil liberties (Baker, 2020, 2021). Other studies have focused on the socio-economic determinants of vaccine hesitancy. The Wellcome Global Monitor 2018 (2019) survey found that in high-income regions, there is less certainty about the safety of vaccines, with 72% of people in Northern America, 73% in Northern Europe, 59% in Western Europe and 40% in Eastern Europe agreeing that vaccines are safe compared to low-income regions like South Asia and Eastern Africa where 95% and 92% of people respectively believe that vaccines are safe. The survey found that France had the highest percentage of vaccine hesitancy worldwide with one in three people considering vaccines unsafe. While vaccination rates tend to be lower in major cities and greater among those with higher education and occupation status (Bryden et al., 2019), parents who choose not to vaccinate tend to occupy both relatively affluent and low socio-economic status (Smith et al., 2004). Low vaccine uptake, however, is not always a choice; it is also informed by income and access to health care (Berman, 2020). It is important, therefore, to distinguish between vaccine refusal, vaccine hesitancy and the under vaccinated (Bedford et al., 2018). Research exploring the social determinants of vaccine refusal hold value, but increased vaccine uptake also requires understanding the communication strategies used by anti-vaccine advocates to persuade mothers not to vaccinate their children. Despite the lack of scholarly literature on this topic, there is a separate body of literature in sociology and cultural studies that explores how motherhood is represented in the media. These insights are useful to understand how anti-vaccine advocates depict motherhood to promote vaccine hesitancy online and the ideologies that underpin their messages.

Representations of the maternal in the media

An important antecedent of anti-vaccine advocates and their channelling of the maternal can be identified in media depictions of mothers as entrepreneurs. These presentations of motherhood offer examples of mothers conducting business from the kitchen table while their children crawl underneath (Littler, 2018, p. 179). Connected with the wider proliferation of 'mummy blogging' (Hunter, 2016; Lopez, 2009) and 'sharenting' (Blum-Ross &

Livingstone, 2017), these 'mumtrepreneurs' promote lifestyle products and services typically consumed by other women and parents, including skin cream, cupcakes, wedding services and children's apparel (Littler, 2018, p. 180). 'Mumpreneurs' not only use their own image to communicate with audiences, they configure their businesses around their children (Ekinsmyth, 2014, p. 1236). While Archer (2019) found that some mothers' express privacy concerns about including their children in their social media activity, others were less concerned with the rights of their children if they perceived their children's digital personas as extensions of their own (Archer, 2019, p. 52). In this respect, influencer mums tend to be more comfortable using their children's image on social media, but nonetheless indicate a blurred boundary in sharenting practices – a term denoting parents who share information about themselves and their children online (Blum-Ross & Livingstone, 2017, p. 110) – between influencer mums and everyday mums (Jorge et al., 2021, p. 3). Here influencer mothers co-opt their children into income producing activities by using events and gifts provided by brands to garner positive content that is used as a treat for their children (Archer, 2019, pp. 53–54).

Another precursor of motherhood that bears consideration in terms of the strategies adopted by anti-vaccine advocates is the notion of the perfected maternal. This representation of the maternal is communicated in a way that presents the mother as perfected and idealised. Related to Goffman's notion of the idealisation of the self, mothers seek to provide a particular view of motherhood that is 'modified to fit into the understanding and expectations of the society in which it is presented' (Goffman, 1959, p. 35). As part of this trope, one will conceal the 'dirty work' or underplay activities, facts and motives that might appear incompatible with the idealised version of a performance one is attempting to foster (Goffman, 1959, p. 48). One of the more well-known incarnations of this idea is 'the mummy myth', in which to be considered a respectable mother, a woman must be entirely devoted to the physical, emotional, and intellectual well-being of her children 24/7 (Douglas & Michaels, 2004). Critically, she must enjoy her experience of motherhood (Collett, 2005, p. 329), or *appear* to enjoy it, in order to perform this version of motherhood convincingly (DeGroot & Vik, 2021, p. 45). The 'good mother' is therefore a hegemonic ideal representing a variant of 'intensive mothering' (Hays, 1996) that renders this model of motherhood as follows: the mother is the primary caregiver; devotes extensive time, energy and investment in the child; and always appreciates that child rearing is 'priceless' and incomparable to paid labour (Newman & Henderson, 2014, pp. 473–474). Mothers are compelled to adopt face-saving strategies in the pursuit of idealised versions of motherhood to construct a performance of the 'good mother'; which includes the moral obligations of what a good mother ought to refrain from doing (DeGroot & Vik, 2021, p. 43). Good mothering is now even enacted through self-tracking technologies (Byrt & Dempsey, 2020). The costs associated with living up to this ideal are considerable given mothers are now integrated into the formal labour force, requiring time spent away from families while simultaneously demanding perfected presentations of motherhood (DeGroot & Vik, 2021, p. 45). In this respect, mothers are increasingly stretched between the experiential domains of 'work' and 'home' (Nippert-Eng, 1996), and consequently less able to access back regions given the demands associated with perpetually attending to the two domains (Hochschild & Machung, 1989). The emotional demands placed upon women to uphold such flawless performances of motherhood, and experience corresponding

feelings of enjoyment as 'natural' and 'obvious', has thus come under critique by a series of scholars as a demanding form of emotion work expected of modern-day mothers to adhere to gender ideology and feeling rules (DeGroot & Vik, 2021, p. 45; Hays, 1996; Hochschild & Machung, 1989; O'Reilly, 2016).

In response to these idealised representations of motherhood, another image of motherhood has emerged: mothers 'behaving badly' (Miller et al., 2017). This satirical representation of the maternal, which has become prominent in film and television (Walters & Harrison, 2014), is characterised by hedonism, chaos and a lack of control (Littler, 2020, p. 549). Here depictions of the maternal are presented amid highly chaotic spaces where perfected domestic routines are absent and mothers are shown behaving hedonistically engaged in vigorous drinking and partying or adopting behaviours more conventionally associated with those without children (Littler, 2020, p. 500). Ostensibly, a reaction to the perfected variant of motherhood, this version of motherhood has found greater prominence on social media. While not castigated, mothers behaving badly are presented as simultaneously fun, risqué and justified in adopting these moments of carnivalesque excess (Littler, 2020). The emergence of the 'hot-mess mum' or #scarymummy are other notable examples of this presentation of the maternal that are commonly found in popular media and self-help literatures on mothering.

While these representations of the 'bad mother' and the flawless mother (DeGroot & Vik, 2021) are not empirically representative variants, they nonetheless circulate as examples of 'staged authenticity'. These presentations of the maternal therefore are not reflective of the institutional 'backstage' à la Goffman's (1959:, p. 128) formulation, but rather represent '*staged* back regions' that constitute staged authenticity (MacCannell, 1973, p. 596). MacCannell (1973) argues that this variant of authenticity is characterised by a social organisation designed to reveal the inner workings of removed tourism localities (e.g., touching a cow's udder on a farm tour), which represent staged qualities of authenticity lending itself to an experience with 'an aura of superficiality' not always perceived by the tourist (MacCannell, 1973, p. 595). This version is therefore not the pure 'backstage' region we relish and relax in, but nonetheless invokes a backstage *style* (Goffman, 1959, p. 128), which may be seen as symbolic of intimacy. While Goffman and MacCannell's ideas pertain to interactions prior to the advent of social media, their accounts are useful given the extent to which communication technologies extend impression management. Developing this notion of staged authenticity, Abidin (2017, p. 4) devises the concept of 'calibrated amateurism', an intentional performance that possesses a 'raw', 'unfiltered' aesthetic typically associated with an amateur. Performances of this kind are an increasingly popular online branding strategy that convey the impression of intimacy, accessibility and authenticity to appeal to followers (Jerslev & Mortensen, 2016). While the communicative techniques of the Disinformation Dozen on Instagram are more professional than the raw aesthetic associated with 'calibrated amateurism', they nonetheless use the appearance of backstage access (e.g., images with their family, personal anecdotes) and a relatable aesthetic to cultivate intimacy with their followers. While the literature focusing on normative ideals of motherhood suggest social media platforms have become an important locale for these performances, what is under-explored is how these discourses are perpetuated online by anti-vaccine influencers. In this article, we compensate for this neglect by exploring how notions of motherhood are performed online

via three interrelated themes – what we identify as the 'intuitive mother', the 'protective mother' and the 'doting mother' – that are marshalled to amplify anti-vaccine influencer content.

Methodology

To research how the maternal is represented by anti-vaccine advocates online, we used thematic analysis to examine the ways in which the maternal is portrayed by anti-vaccine influencers on Instagram. In this article we examine the self-presentation techniques of thirteen anti-vaccine influencers on Instagram, all of whom were based in the US at the time of this analysis. The case studies include the defamed former medical professional, Andrew Wakefield, who pioneered the discredited MMR study previously discussed, as well as twelve social media influencers who have been identified as creating two thirds of all misinformation shares on social media during the COVID-19 pandemic (CCDH, 2021b, p. 4).

These accounts were selected on the basis of their influence (e.g., social media followings and accelerated growth), engagement (i.e., shares) and capacity to target and profit from the vaccine hesitant. These twelve influencers, whom The Center for Countering Digital Hate (CCDH) refer to as the 'Disinformation Dozen', are estimated to be responsible for 65 per cent of anti-vaccine content during the COVID-19 pandemic (CCDH, 2021a), especially false and misleading information involving COVID-19 vaccines. We included Andrew Wakefield in this list given his prominence as a leader of the anti-vaccine movement and his capacity to profit from the anti-vaccine industry online, which is estimated to accrue annual revenues of at least 35 million USD (CCDH, 2021b). In addition to his highly publicised MMR study, Wakefield has produced and directed a series of films, including *Who Killed Alex Spourdalakis* (2015), *Vaxxed* (2016) and *1986: The Act* (2020), all of which purport a connection between vaccines and autism. Instagram was chosen as the site of data collection as this was – at the time of data collection – the main platform used by these influencers. The site's algorithm also actively recommends COVID-19 vaccine misinformation (CCDH, 2021a). The images shared on Instagram serve as powerful modes of persuasion that are often difficult to regulate

Table 1. The Instagram account details of the 'Disinformation Dozen' and Andrew Wakefield on 31 July 2021 when data collection was finalised, including their role in the affiliate marketing schemes for TTAV and TTAC anti-vaccine videos and conferences.

	User	Gender	Followers	TTAV/TTAC
1.	Joseph Mercola	M	306K	speaker
2.	Robert F. Kennedy Jr.	M	suspended	promoter
3.	Ty & Charlene Bollinger	M & F	17.4K	owner
4.	Sherri Tenpenny	F	73.5K	promoter
5.	Rizza Islam	M	suspended	–
6.	Rashid Buttar	M	suspended	promoter
7.	Erin Elizabeth	F	suspended	speaker
8.	Sayer Ji	M	suspended	promoter
9.	Kelly Brogan	F	134K	promoter
10.	Christiane Northrup	F	20.1K	–
11.	Ben Tapper	M	129K	–
12.	Kevin Jenkins	M	3468	–
13.	Andrew Wakefield	M	30.1K	speaker

(Baker & Rojek, 2020). In light of updated COVID-19 misinformation policies, several members of the Disinformation Dozen had their accounts suspended from Instagram during the pandemic for violating their policies and terms of service (see Table 1). As a result, we analysed the eight accounts available at the time of analysis for 19 months from 1 January 2020 to 31 July 2021.

After analysing the Instagram pages of these influencers, we examined the tactics they use to encourage mothers to join the anti-vaccine movement. We used thematic analysis (Braun & Clarke, 2006) to code content appealing to mothers, ideas of motherhood and children when presenting information about the alleged dangers of vaccines. We also examined the tactics used to promote anti-vaccine claims, including statements attacking the credibility of those promoting vaccines, personal anecdotes (e.g., stories of vaccine injury), and the use of expert opinion (e.g., an article or testimony written by an M.D or scientist with 'expert' credentials). We also collected content from influencers that while not explicitly referring to anti-vaccine sentiment, represented versions of the maternal that were associated with other health information (often, specifically about COVID-19). Upon analysing the posts, the data were broadly divided into three categories: the protective mother, the intuitive mother, and the doting mother.

Social media research raises ethical considerations of anonymity and informed consent. We chose to disclose the names of the influencers examined in this study for several reasons. Since the Center for Countering Digital Hate reported on these influencers in 24 March 2021, they have gained widespread public attention. Given their notoriety as members of the 'Disinformation Dozen' (CCDH, 2021b), it is not possible to maintain the anonymity of these influencers while discussing their online personas. Furthermore, the 13 influencers examined in this study are explicitly creating public content for social and economic gain. For these reasons, we chose to include their names in this study.

Findings

All of the influencers whose content we analysed deployed representations of motherhood to promote anti-vaccine messaging during the pandemic. While these representations varied in terms of how motherhood was represented online, the persistence of the maternal suggests an important and under-explored vector that influencers use to propagate anti-vaccine content. With these representations, influencers are able to appeal to cultural beliefs about motherhood, both experienced and imagined, to influence parental decision-making regarding vaccination. Our analysis identified three prominent, interrelated themes of motherhood used by anti-vaccine influencers to encourage vaccine refusal: the protective mother, the intuitive mother, and the doting mother.

The protective mother

A prominent theme that emerged from the data is the protective mother. Here, the mother's role is depicted primarily in terms of ensuring their child's safety and protecting them from harm. This theme is commonly manifest in terms of diet and lifestyle choices, a so-called 'natural' mother protecting her child from toxins and unnatural chemicals in the form of food and vaccines. As an example of this trope, Dr Mercola posted an image of a baby being fed, asking parents, 'How can you help lower your baby's exposure to

heavy metals?' (23 February 2021). For the most part, these influencers refute claims they are anti-vaccine; instead alleging to be concerned with 'safety' (Wakefield 3 July 2020). Despite their disavowals, protection is commonly framed in terms of refusing vaccination. This theme of protection is not aimed at vaccine ingredients in isolation. Instead, this motif is about protecting children from the nefarious interests of the State and pharmaceutical corporations, who produce vaccines and are believed to be driven by political and financial gain. As Wakefield claims, 'Protecting kids from dangerous things like forced masking, traumatising isolation, toxic injections, harmful foods & oppressive governments isn't a #conspiracytheory, that's just called good parenting' (@1986theact, 23 March 2021); the implication being that the protective mother and the 'good mother' are synonymous. This anti-vaccine rhetoric also combines with anti-mask and anti-lockdown messaging with the protective mother objecting to the State infringing on their children's civil liberties. In this regard, parents are not only perceived to be protecting their children's health, they are presented as protecting their children's rights and freedom. For example, Kevin Jenkins' Instagram feed includes a series of photographs with children in which he proclaims to be defending their rights: 'This is why we do what we do. It's for our children' (Jenkins, 28 May 2020). 'Are we going to stand up for her! The choice is yours! I know I am! (Jenkins, 29 May 2020); Dr Sherri Tenpenny equating masking with 'child abuse' (24 August 2020). Despite the fact that literal representations of mothers are visually absent from these posts, mothers are the implied audience with posts deliberately appealing to protective parental sentiment.

There are a series of techniques used by influencers to convey the theme of the protective mother. Evocative, visual imagery is used to affectively connect with online audiences, appealing to the protective dimensions of motherhood. For example, several posts by Dr Sherri Tenpenny adopt the visual technique where children and babies are depicted directly gazing into the camera to appeal to audiences to protect them. These posts continue the media's interest in representing 'distant suffering' as a concern worthy of our attention via the display of evocative images of children suffering (Chouliaraki, 2008); in the context of depicting the effects of vaccine injury on innocent children. Another technique used is an epistolary presentation where letters addressed to expectant mothers warning them of the danger of vaccines and encouraging them to refuse vaccinating their children is designed to evoke the protective instincts of mothers (see @1986theact). Letters addressed, 'Dear Expectant Mother … ', warn pregnant mothers of the dangers of vaccines by appealing to their maternal impulse to protect their child.

Video updates and handwritten letters supposedly written by mothers apologising to their children for failing to protect them from harm feature prominently on these accounts. Stories of vaccine injury and death are used as direct warnings to convey the risks associated with vaccines through an evocative and highly charged personal narrative of regret and despair. For example, one post reads:

> To my kids, Mummy is so sorry. Future parents and parents unaware of vaccine risks Please Read [*sic*]. Vaccine inserts. You don't want to be a future me praying on your knees asking God for a do-over. Love Mum. (@1986theact, Jan 11, 2021)

There is a clear absence of the father in these portrayals. While parents are called on to refuse mask-wearing and protect their children's civil liberties, it is consistently the mother who is imagined as the author and recipient of anti-vaccine messaging.

In addition to these personal anecdotes, hashtags are commonly used to extend audience reach. This is achieved by associating anti-vaccine messages with popular protest movements, such as Black Lives Matter. For example, theories of medical racism, which draw attention to the racist policies and practices that historically informed the medical academy (e.g., unequal access to health care, the segregation of medical facilities and involuntary medical experimentation on racial minorities – see Nuriddin et al., 2020), began to circulate on Andrew Wakefield's account on 2 June 2020, a week after George Floyd was killed. Several of Wakefield's posts in the following week drew on this theme of medical racism to encourage vaccine hesitancy by claiming that the government is 'endangering' black children via vaccination despite knowing that 'African American boys are 236% more likely to be diagnosed with autism when vaxxed with MMR'. The theme of medical racism, which is presented as 'the new apartheid', was also employed by Kevin Jenkins and Robert F. Kennedy Jr., before Kennedy's Instagram account was suspended. While the issue of medical racism appeared to have limited impact, Wakefield's association of anti-vaccine content with the Save the Children charity proved to be more effective in extending audience reach. From the 3 May 2021, Wakefield hijacked the #SavetheChildren, #SaveourChildren and #SavetheBabies hashtags to promote his new film, *1986 – The Act*. This resulted in a significant increase in engagement with likes on subsequent posts using these hashtags more than doubling from 1171 to 2990. The #SavetheChildren hashtags not only made Wakefield's posts more discoverable, they associated the anti-vaccine movement and the Save the Children movement as common efforts to protect innocent children from harm.

The intuitive mother

The intuitive mother is another prominent theme found in our sample to promote vaccine refusal. In these posts maternal intuition is celebrated as an innate form of wisdom, symbolically pitched against the abstract, professionalised knowledge of medical experts and elites. This symbolic coding privileges intuitive knowledge as a superior form of knowledge derived from lived experience in contrast to the medical establishment (Baker & Rojek, 2019b). This shared rejection of mainstream medicine is precisely why the Disinformation Dozen, many of whom have medical qualifications, are able to align themselves with the intuitive mother. Andrew Wakefield, for example, describes his most recent film as 'a story about one of the most powerful forces in the universe: maternal intuition' (@1986theact, 26 June 2020). One post featuring a mother holding her young child quotes Wakefield directly, 'A mother's intuition: it's real and we have to believe in it' (@1986theact, 17 December 2020), aligning Wakefield with mothers against the medical establishment, who are alleged to have ignored or harmed them. Another of Wakefield's posts features a mother embracing her child accompanied by the statement: 'maternal intuition is a force of nature' (@1986theact, 7 October 2020). Both posts use the captions to highlight a mother's ability to 'sense danger', noting that mothers 'are biologically and spiritually equipped to protect their child from that danger'. The overarching message is that truth is not about 'logic' but grounded in feeling and intuition. This framing builds on a legacy of positioning anti-vaccine content as natural and holistic in contrast to mainstream medicine, which is depicted as purely instrumental.

As Attwell et al. (2018, p. 1625) have shown in relation to vaccine rejecting parents, this symbolic framing presents the vaccinating mainstream as an 'Unhealthy Other', who neglect their health, enact 'inadequate parenting values', 'wilful or misguided ignorance', and are complicit in the 'toxic practices' that characterise mass industrial society.

This theme of maternal intuition is communicated on Wakefield's account via personal anecdotes in the form of quotes (from 3 January 2021), video updates (from 12 May 2021) and letters to expectant mums (from 14 December 2020). Mothers' stories are recounted as a way to spread disinformation by legitimising fears, uncertainty and doubts regarding vaccines. The theme of the intuitive mother is also supported by various hashtags: #TrustTheMoms, #protectyourchildren, #guardyourheart, #TrustYourBody, #TrustYourGut, #MotherKnowsBest, #Mothersintuition, which reveal the innate wisdom of maternal intuition. The holistic psychiatrist, Kelly Brogan, similarly conveys the power of intuition to promote vaccine hesitancy. At the heart of her message is the importance of somatic wisdom: 'Your body is wise. Your body is perfect' (Brogan, 13 April 2020). In a post promoting her new book, *Regenerate*, Brogan describes the text as an attempt to liberate people from the medical system through accessing intuitive, bodily wisdom:

> Get informed, get inspired, and get support for that intuition inside that says a scary, warfare-based paradigm of fighting bad genes, bad germs, and bad symptoms cannot be the best medicine available for me. My body is infinitely wiser than I have been lead to believe. (Brogan, 31 March 2020)

Brogan's appeal to bodily wisdom is embodied in her natural, ethereal aesthetic and was mobilised in a 'Thank You Body Rally' that began in Miami on 16 October 2020 before moving online. The online movement featured a series of influential anti-vaccine influencers expressing their gratitude for their body and joining Brogan in, 'choos[ing] empowerment, joy, and positivity and to honor the incredible wisdom of the human body' (Brogan, 17 September 2020). While bodily wisdom is presented as a universal human attribute, Brogan's posts emphasise female power – sharing videos of fellow females 'speaking truth to power' (Brogan, 14 May 2020) – and accessing their 'collective intuition' (Brogan, 4 July 2020) as a way to liberate themselves from corporate and government control.

The doting mother

In contrast to the indirect appeals to motherhood employed in the protective and intuitive themes canvassed above, the doting mother comprises depictions directly showcasing mothers through posts that communicate unwavering devotion to their children. Representative of standard social media posts where users post directly about their lived experience, this variant of motherhood is another strategy used by influencers to promote anti-vaccine content. Here, hegemonic motherhood is invoked with mothers presenting themselves as key caregivers who are devoted to their children and display childrearing as a 'priceless' act (Newman & Henderson, 2014, pp. 473–474).

This variant of the doting mother is commonly associated with influencers who themselves are mothers and who advocate anti-vaccine sentiment. The Instagram account of the influencers, Ty and Charlene Bollinger, exemplifies this theme of the doting mother. Here the veneration of family and God is present in posts that seek to humanise and

present a 'personal front' mixed in with other posts promoting vaccine refusal and their paid-for disinformation docuseries about cancer and vaccines: *The Truth About Cancer* (TTAC) and *The Truth About Vaccines* (TTAV). The Bollingers enlist Andrew Wakefield and many members of the Disinformation Dozen as affiliates to promote these films (CCDH, 2021b; see Table 1 above). These affiliate marketing schemes are disguised through a style of self-branding that celebrates glamour and domesticity. What appear to be intimate and domestic depictions of Charlene Bollinger with her family are in fact ideological in that they portray anti-vaccine messaging through an appeal to aspects of Bollinger's private life. For example, in one post Charlene Bollinger celebrates her daughter's 10th birthday by sharing an image of herself and her daughter leaving their house for a 'Mummy/Daughter Happy Birthday date'. The post is accompanied by a series of hashtags, including #charity, #happy, #joy #ttac and #ttav (acronyms for 'The Truth About Cancer' and 'The Truth About Vaccines'). This birthday celebration post not only depicts the doting mother as charitable, joyous and caring, anti-vaccine sentiment is communicated through the guise of a fun family post that stages motherhood as Bollinger's raison d'etre: 'This is my why'.

The techniques deployed to portray the doting mother in the case of Charlene Bollinger suggest an attempt at 'authentically' presenting motherhood as a type of 'staged authenticity' wherein children are used to 'reveal inner workings' of a social life that lends itself to an aura of superficiality (MacCannell, 1973, p. 595). Her followers are teased with a glimpse into ostensibly backstage regions (Goffman, 1959, p. 128), which increases the sense of intimacy with her audience. Bollinger's audience are privy to aspects of the private nature of motherhood. This intimate portrayal resonates with other anti-vaccine social media content that Smith and Graham (2019, p. 1211) argue privileges social interactivity in order to effectively create 'communities of people who are affected by and are sceptical of vaccine practices'.

Moreover, despite the account being jointly shared with Charlene's husband Ty – as denoted in their account's username – Ty remains absent from these posts. As the father of their child, and joint owner of the account, Ty's absence is significant. It is Charlene, the doting mother, who is represented to promote anti-vaccine messaging. Charlene's performance as the doting mother is suggestive of the importance of the maternal in communicating anti-vaccine messaging and building an online following. The doting mother is similarly invoked frequently in Wakefield posts, which remind audiences that 'no one will ever love you as much as your mother' (@1986theact, 26 March 2021) and that 'motherhood is a love story with no ending' (@1986theact, 13 April 2021). Accompanied by illustrations of mothers tenderly embracing their child, the mother–child relationship is elevated as paramount and pure. The by-product of this symbolic framing is that the mother's experience – and accounts of vaccine hesitancy and vaccine injury – is elevated above paternal and abstract medical expertise.

Discussion

All of the tropes analysed privilege a feminine, intuitive, holistic approach to knowledge. The protective mother ensures the safety of her child by protecting them from harm. They seek to provide protection not only from the harmful substances allegedly in vaccines, but from the nefarious interests of the State, pharmaceutical companies, experts

and elites. The intuitive mother appeals to an innate form of bodily wisdom derived from human perception and lived experience: what has been referred to as 'native expertise' (see Baker and Rojek, 2019b). What elevates this ostensibly feminine form of intuitive knowledge as 'pure' and true is the way it is symbolically constructed in relation to the abstract, professionalised knowledge of medical experts, corrupted by vested, political interests. This trope feeds into broader cultural beliefs that a child's own parents necessarily know what is best for them (Berman, 2020, p. xiv; Bobel, 2010). The perceived failures of scientific institutions and experts further elevate what has been described as the 'mummy gut' as a significant sense and decision-making tool (Carrion, 2018, p. 320). Invoking 'intensive mothering' (Hays, 1996), the doting mother is one who cares for their child. In contrast to the protective mother, the mother–child relationship is displayed with enthusiastic devotion as a joyous experience. In this regard, this evocation of motherhood is reminiscent of the perfected maternal where mothers must outwardly enjoy this role to perform this version of motherhood convincingly (DeGroot & Vik, 2021, p. 45).

All the tropes identified portray a limited and restricted representation of the maternal. Whereas popular media representations of the maternal have shifted overtime from a perfected version of the 'good mother' – devoted, sensitive and joyous – to satirical representations of mothers 'behaving badly' (Littler, 2020; Miller et al., 2017), commonly oscillating between the two by combining idealisation with self-deprecation, the tropes put forward by anti-vaccine advocates appeal to more traditional understandings of femininity and the maternal. These depictions of the maternal not only represent traditional notions of motherhood, they reinforce hegemonic understandings of the 'good mother' via restricted presentations of motherhood that rest on an idealised model of 'domesticity' (Gentile, 2011) and an all-encompassing devotion to child rearing (DeGroot & Vik, 2021; Douglas & Michaels, 2004; Newman & Henderson, 2014). This version of motherhood is valorised as an ideal, while simultaneously curtailing other variants that fail to conform with this hegemonic standard.

Despite the fact that most of the Disinformation Dozen are men, there is a noticeable absence of representations of masculinity and fatherhood in their posts. With the exception of posts that oppose mandatory vaccinations and purport to defend individual rights and civil liberties, it is women in general, and mothers in particular, who are represented and directly appealed to in anti-vaccine posts. The overriding presumption is that childrearing is a maternal concern with mothers the primary target of anti-vaccine posts. Individual responsibility is reframed as a maternal responsibility. This is clearly expressed by the letters and video updates addressed by mothers to their children apologising for vaccinating and subjecting them to harm. Here vaccine injury is depicted as a maternal responsibility: 'To my kids, Mummy is so sorry' (@1986theact,11 January 2021), 'I struggle with forgiving myself' (@1986theact, 14 December), 'I am so sorry we learned the hard way' (@1986theact, 10 March 2021), signed, 'Mummy', 'Mother', 'Mum'. The implicit message communicated to a presumed maternal audience is one of regret; if only these mothers had followed their maternal intuition instead of listening to medical professionals: 'I will never forgive myself for allowing the voice of doctors to overcome my inner voice … with endless love Always, Mum' (@1986theact, 16 February 2021).

The anti-vaccine posts analysed convey a particular framing of authenticity. Native knowledge in the guise of the protective, intuitive and doting mother become a means of invoking authenticity that is framed in opposition to the 'contrived' and 'corrupted' knowledge of the government and medical establishment. These tropes legitimise the belief that a child's own parents, and mothers in particular, know what is best for their children. Authenticity implies that mothers already possess the knowledge and wisdom they seek; they simply need to be brave enough to trust themselves and listen to their authentic 'inner voice' and intuition. In contrast to the raw, unfiltered aesthetic of 'calibrated amateurism' increasingly dominant on social media (Abidin, 2017), the maternal tropes explored in this article are deployed as a means of obtaining cultural legitimacy in anti-vaccine communities through projecting staged authenticity. The posts purport to divulge the inner workings of motherhood through allusions to backstage style (Goffman, 1959, p. 128) that connect through intimacy, yet appear filtered. As a result, social space is opened up permitting outsiders to 'view details of the inner operation' (MacCannell, 1973, p. 596). Here attention is similarly garnered in a mode characteristic of influencers by turning private events into a public performance to capture public attention. This strategy is designed to foster intimate connections with audiences both 'real' and imagined; real in the sense of relating to people's lived experience and imagined in terms of appealing to pregnant women and future mothers (e.g., letters of this kind commonly addressed to 'Dear Expectant Mum').

Conclusion

While opposition to mandatory vaccination and concerns about the safety and efficacy of vaccines have occurred for centuries (Berman, 2020), digital technologies have fundamentally altered how anti-vaccine messages are communicated to the public. In addition to lowering the barriers of entry to content creation and increasing the speed and scale with which content can be disseminated, social media enables non-experts to achieve visibility and status as influencers online (see Baker and Rojek, 2019a, 2019b). In this article, we have analysed the techniques used by thirteen anti-vaccine influencers to promote vaccine refusal. Some of these techniques exploit the affordances of digital technologies, such as using hashtags to achieve visibility and extend audience reach with varying degrees of success, while others cross-pollinate their claims within like-minded groups. Many anti-vaccine advocates appeal to representations of the maternal as the subject and object of anti-vaccine content, both actual mothers and expectant mothers. In addition to generic claims that vaccines cause harm, injury and death, tropes of the protective mother, the intuitive mother and the doting mother are used to encourage vaccine refusal by invoking hegemonic ideals of the 'good mother' as one who is natural, holistic, and authentic; anti-vaccination a feminine ideal to which mothers ought to aspire. Authenticity is framed here as a form of embodied native expertise, uncorrupted by culture, the State and corporate interests. While researchers have explored the techniques anti-vaccine activists use to persuade parents not to vaccinate their children such as storytelling (Shelby & Ernst, 2013), memes, questions and personal anecdotes (Baker, Wade, & Walsh, 2020), framed in relation to neoliberalism, risk and individual choice (Reich, 2014), there remains an assumption in the media and popular culture that suburban, middle-class mothers are largely to blame for vaccine refusal (Lubrano, 2019; Winter, 2020). Our research demonstrates that many of these online anti-vaccination marketing

campaigns strategically target mothers as the primary caregivers by using a combination of idealism and guilt to influence mothers not to vaccinate their children and undermine their confidence in scientific and medical experts.

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