



The effects of COVID-19 on imagined reproductive futures

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Abstract

Macro-level crises affect individual lives and behaviors. One of COVID-19's many effects was to disrupt the way people imagined their own and their children's futures or *imagined reproductive futures*. Using 65 interviews collected between March and July 2020 with mothers who experienced pregnancy, childbirth, and the postpartum period at the onset of COVID-19 in the US, this study examines two elements of reproduction and futurity; first, how the pandemic exacerbated health, economic, racial, and global emergency stressors to create unique reproductive experiences and nuanced imagined reproductive futures. Second, I use Lee Edelman's concept of *reproductive futurism* amidst COVID-19 to inquire whether reproduction maintains a compulsory sense of optimism amidst periods of social disruption. I find that despite the various stressors and in addition to the shared disruption of the pandemic, there remains a widespread maternal optimism about reproduction across birthing people with different intersectional social identities. Diverse imaginations of futurity are likely to impact reproductive practices and the meaning-making associated with them; in this research, I use maternal subjectivities to illustrate how narratives and experiences of reproduction are contextual, and offer a distinct avenue toward theoretical analyses of futurity.

Keywords Childbirth · Reproduction · Future · Crisis · COVID-19 · Optimism

Fetal and national futurity are intricately connected, as the future of the state is maintained through the birth and care for desired babies (Smith and Vasudevan 2017). Reproduction therefore exists in the "domain of the future" (Franklin and McNeil 1988) at both individual and national scales. Reproductive and governing bodies mobilize personal, biomedical, and political actions to proactively secure desirable and eugenically quell unwanted futures, creating a highly stratified reproductive landscape (Colen 1995). Beyond the outcomes of childbirth, reproduction

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collapses the past and present into a heightened state of potentiality (Gammeltoft 2013); during pregnancy, impending futures represented by “the child to come,” are biologically embodied and imaginatively speculated (Sheldon 2016). Pronatalist and patriarchal socialization enforces gestating people to base their identity around their capacity to mother. Thus, while any emotion may dictate prenatal anticipations, optimism postpartum organizes the present into logics that then appear identity affirming and pleasurable (Berlant 2011, p. 2), often at the expense of minimalizing tragic pasts or present suffering. As the well-being of children has been inextricably linked to the conduct of mothers (Caplan 1985; Hays 1996), maternal optimism has become widespread.

Such optimism about reproductive futures may be challenged during times of macro-level crises, especially at the individual level of people planning or engaging in reproductive activities. For example, one of COVID-19’s many effects was to disrupt the way people imagined their own and their children’s futures. The pandemic not only heralded a present marked by lives lost, but for those reproducing, it also changed the context to bring a new life into the world. I explore how mothers felt COVID-19 impacted their reproductive experiences, as well as their anticipations of the future related to reproduction—what I call *imagined reproductive futures* (Edelman 2004). Social restrictions and changing labor conditions, for example, might change household and economic related imagined reproductive futures, while systemic changes such as overcrowded hospitals and new medical restrictions could influence health related imagined reproductive futures. These changes might have minimal effects on future imagining for those who are temporarily inconvenienced, but they could also be far reaching, such as for people who view COVID-19 as a harbinger of escalating future global crises. The performance of maternal optimism or the pressure to display the “idealized version of maternal love,” (Collins 1989, p. 188) could thus be challenged amidst crisis as imaginaries of the future become less hopeful. But this response to COVID is not inevitable: the optimism and meaning-making associated with modern Western mothering may prove resilient and be invigorated based on the belief of a brighter future, regardless of present circumstances.

I examine how people during pregnancy, and during the postpartum period between March and July 2020—the onset of COVID-19 in the US—imagined reproductive futures. This study responds to calls from sociologists to empirically engage with futurity in sociological research (Adams 2004; Coleman 2017; Mische 2009) in two ways. First, by examining how imagined futures are reconstructed in the context of crisis; second, by examining how future projections are grounded or shaped by social stressors and processes.

I make two distinct contributions. First, I consider how reproductive experiences during COVID-19 exacerbated widely acknowledged pregnancy and childbirth-related stressors (including: fetal and maternal health stressors, economic stressors, racial stressors, and global emergency stressors) and how these stressors were experienced differently based on the birthing person’s structural position and intersectional social identities. Second, I revisit Lee Edelman’s concept *reproductive futurism* amidst COVID-19 to assess two key elements of futurity: whether reproduction retains a compulsory sense of optimism during COVID, and whether the image of



the fetus as receptacle of new life still seeds hope in the collective imaginary amidst periods of social disruption. I find that despite the various stressors expressed by respondents and in addition to the shared disruption of the pandemic, there remains a sense of compulsory maternal optimism about reproducing.

Literature

Childbirth & embodiment

Literature on reproduction focuses on what constitutes a “good birth,” organized into the well-defined categories of medicalized and de-medicalized care. Researchers have studied the impact of social identity on childbirth, particularly the choices people do or do not have in the delivery room, (Brubaker and Dillaway 2008, 2009; Davis-Floyd 2003; Fox and Worts 1999; Martin 2001), or the impact of intersectional social categories as both oppressive and as opportunities for resistance (Collins 1989; Hondagneu-Sotelo and Avila 1997; Oparah and Bonaparte 2015; Lopez 1993; Zadoroznyj 1999). However, the literature singles out childbirth rather than the broader reproductive experience. I explore how the context of reproduction may influence the reflections of the reproductive experience and future imaginaries.

If embodiment is a “medium for the constitution of society,” (Ignatow 2007, p. 119), reproduction allows us to investigate how societies are constituted by way of birthing future generations. Feminists have long addressed embodied experiences as a primary ground of knowledge production (Smith 1991). Situated knowledges (Haraway 1988) and intersectionality (Collins 1989; Crenshaw 1991) illustrated how complex social identities inform individuals’ perspectives and experiences. These concepts resist the essentialization of body-subjects based on sex/gender, allowing for the inclusion of many possible configurations of experience and subjectivity (Pitts-Taylor 2015, p. 119). I situate reproduction as an embodied source of knowledge production and consider intersectional situated knowledges of participants in their meaning-making of present experiences and the construction of future imaginaries.

Birth and futurism

Reproduction and the child-figure signify human and national futures. The imparted obligation of families to birth the future wealth of the nation occurs through reproductive choices and is governed by reproductive politics, “centralizing sexuality and reproduction as the basis for economic vitality” (Sheldon 2016, p. 116). While ideal reproductive practices are associated with the achievement of strong economic and national futures, reproduction is also managed to thwart unwanted futures. In the context of global warming, for example, sexual stewardship is heralded as an opportunity to achieve a livable future (Sasser 2017, 2018). Reproductive responsibility embodies patriotism, optimism, and purpose for the future.



Not all futures are considered equally; in the name of national futurity, oppressive race-biopolitics have shaped reproductive policies and practices. Based on intersectional social markers, simultaneous anti-natal and pro-natal policies support some families and target others. Reproductive decisions reflect debates over who belongs in the future—undoubtedly, the future does political work, by equating it with progress or by making urgent demands on the present in fear and anticipation (Smith and Vasudevan 2017). Reproductive scholars have long been concerned with what feminist futures resemble; particularly reproductive futures in relation to technology. By centralizing intersectional social identity and nontechnological analyses of future prospectation (Franklin and McNeil 1988), this scholarship offers a distinct avenue toward theoretical analyses of futurity.

Changing imaginations of futurity are likely to impact reproductive practices and the meaning-making associated with them. Researchers (Ginsburg and Rapp 1991; Morgan and Roberts 2012) have warned that no elements of reproduction can be understood “apart from the larger social context that frames them,” (Ginsburg and Rapp 1991, p. 330). Reproductive futures, then, are also best understood in light of current contexts; one of which is crisis.

Crisis

Crises impact future imaginaries in social, economic, and biomedical ways. When a vision of the future is threatened during a disaster, swift action is often taken as a bid for the claim that “extraordinary times call for extraordinary measures” (Brubaker 2020). Literature on the exploitation of crises has shown how for-profit interests often pawn disaster to engage in radical social and economic engineering at the expense of democracy, fairness and justice (Klein 2007). Governments also mobilize financial resources into potential future pandemics—often accompanied by increases in medical surveillance at the expense of alternative modes of healthcare (Adams et al. 2019; Caduff 2015; Frankfurter et al. 2020). Anticipative medicalization (Jasper 2020) considers the increasing attempts to control and surveil individual health in an attempt to allow fewer potential risks to well-being—disease, pathogens, defective genes—to escape (Conrad and Waggoner 2017). A similar phenomenon has been theorized in the reproductive literature about prenatal care expanding to include the period before conception, creating an ethic of anticipatory motherhood (Waggoner 2013).

Based on past crisis responses, we might expect individual future imaginaries during COVID-19 to align with pessimistic or contracting future anticipations. Researchers have examined how the COVID-19 crisis disrupted the politics of reproduction in relation to changing access to reproductive healthcare, changes to the global flow of the reproductive industry (König and Jacobson 2021), and changing fertility trends (Luppi et al. 2020). This research analyzes how COVID-19 has exacerbated pre-existing tensions and explores the repercussions for future imaginaries.



Optimism and consequence

Contemporary discourses on Western ideals of ‘good mothering’ depend on white, middle-class, nuclear family norms and require intensive mothering, an exhaustive and expensive parenting practice that is child-centered, and self-sacrificing (Cappellini et al. 2019; Hays 1996; Randles 2021). Expressing maternal optimism occurs when the material and emotional labor of intensive mothering is outwardly displayed as enjoyable and purposeful. For those whose intersectional social identities make them vulnerable to the myth of irresponsible mothering (Haraway 1992; Ladd-Taylor and Umansky 1998), optimism is especially emphasized to resist stigma and prove themselves as good and moral mothers (Korteweg 2003; Herbst-Debby 2018). Maternal optimism has been correlated to resilient functioning and the ability to persevere in times of crisis (Scheier and Carver 1985; Wrosch and Scheier 2003); others have described the constant self-surveillance of intensive mothering as a “psychological police-state” that affects mothers across social identities (Henderson et al. 2010 in Murray and Tizzoni 2022). Sociological studies have noted the persistence of optimism in motherhood despite challenging circumstances. In their study on Chilean mothering in the context of a “hostile world,” Murray and Tizzoni (2021) found that hope, as an instance of optimism, mobilizes mothers to achieve what they expect for themselves and their children in the short and long-term. Lauren Berlant (2011) describes cruel optimism as the condition in which “the cruelty of the now” is accepted in service to the possibility of a better future. Patricia Hill Collins (1994, 1990) describes “motherwork” as the process by which “racial ethnic” mothers socialize their children to survive intersecting oppressions, while resisting and transcending these same power relations (2007, pp. 175–183). The pursuit of the resiliency that fuels maternal optimism may distract from systemic questions of structural inequities,

These are questions of equality and justice rather than growth and efficiency. Addressing them may require disidentification from a project joining the allures of optimism, practicality, scientific evidence and ‘people centeredness.’ (Henderson and Denny 2015)

Based on these literatures, we might, on one hand, expect COVID-19 and other present crises to be tolerated in service to optimistic future imaginaries, as a cultural requirement of resilient motherhood, for both ‘good mothers’ and those managing stigma to avoid being ‘bad mothers.’ On the other hand, disaster literature suggests that crises lead to a contraction of future imaginaries. Building upon this literature I inquire whether strong maternal optimism survives under pressure of various external crises. To do so, I borrow the concept and critique of reproductive futurism as a framework for analyzing these discrepancies.



Reproductive futurism

Lee Edelman drew from political discourse, cultural media, and queer theory to formulate a framework of reproductive futurism. Edelman described a nationalist orientation toward a future within the context of a hetero-reproductive society using the figure of the Child—a simultaneously innocent and demanding cultural symbol—as someone who justifies medical, political, and social action. Edelman incorporated three assumptions of the future in his analysis: that there is a future, that we have the obligation to improve it, and that it has unquestioned value and purpose (Edelman 2004). In defense and anticipation of a brighter future, the Child becomes a “‘disciplinary image’ that performs the ‘mandatory cultural labor of social reproduction,’” (Edelman in Katz 2008, p. 140) a personal and political *raison d’être*.

This conception of the future has endured critique for its heteronormative characteristics and failure to incorporate histories of racialization in the name of reproductive futurism, and has been expanded to become more inclusive, nuanced, and global. Scholars have pointed to biopolitical tactics enacted for the sake of a particular vision of the Child and state with grave material consequences, such as the policing of the Black body (Roberts 2014), the migrant, the queer, the drug using, the poor, and the ‘feeble-minded’. Amidst the rise of fetal-centrism, the Child has expanded to include the fetus. In the Anthropocene, the Child has also come to represent humanity and life itself as the last hope amidst eco-catastrophe (Sheldon 2016). While I draw from Edelman’s symbolism of the future represented by the Child, I align with recent scholarship that centralizes intersectional social identity. I use maternal subjectivities during COVID-19 to illustrate how narratives and experiences of reproduction are contextual, and investigate how they result in diverse conceptions of futurity—or imagined reproductive futures.

My findings contribute to recent literature on nuanced conceptions of reproductive futurism. For mothers in some intersectional social identities, the future remained expansive. Others anticipated contracting future imaginaries, in line with the disaster literature. Despite these divergent imaginaries, compulsory maternal optimism remained salient across most responses. Edelman analyzed reproductive futurism in the context of the state, whereas I use the individual as my unit of analysis, though mothers’ reproductive future imaginaries may parallel state imaginings of the future (Gammeloft 2013). By focusing on the interpretations of crisis on the individual scale and the subsequent reproductive futurities that emerge, this research maps the reproductive future imaginaries of the social body emerging from individual reproductive experiences during the COVID crisis.

Methods

With Institutional Review Board approval, I conducted 65 interviews—50 initial and 15 follow-up—with people who experienced pregnancy, labor, and postpartum during the pandemic. I recruited respondents in March and April 2020, using Instagram hashtags: #pandemicpregnancy, #pandemicbirth, #covidbirth and #covidpregnancy,



offering wide regional representation. The formation of group identities around disease categories or health experiences has increased in prevalence since the health activism in the 1980–2000s (Epstein 1995). Recently, hashtags have become a powerful tool for the construction of collective group identities, as well as an important recruitment method for hard to reach populations, such as people with rare medical conditions or in particular stages of pregnancy (Gelinas et al. 2017; Ramo and Prochaska 2012). I also used snowball sampling methods (Biernacki and Waldorf 1981).

Respondents ranged from 18 to 42 years old, lived in 12 states in the US, with one respondent from Puerto Rico and one respondent from Canada. I recruited respondents upon the requirements that they were experiencing or had experienced pregnancy, birth, or postpartum at the time of the interview period—March through July 2020. While there was variation in participant demographics, respondents were strategically chosen for their common reproductive experiences, rather than in an attempt to fulfill a random or representative sample. This strategy of qualitative research follows the pursuit of a case study sample, versus attempts of generalizability (Small 2009).

Semi-structured interviews focused on expectations, desires, and plans for the reproductive experience, both prior to COVID-19 and after the initial spread of the virus. I developed interviews to engage a wide range of topics related to the medical, financial, social, and personal components of the reproductive process. I obtained informed consent from the respondents prior to the interviews, that were conducted over the phone, recorded, transcribed verbatim, and lightly edited for clarity. The interviews averaged slightly under 1 h, with the longest lasting one and a half hours. Follow-up interviews were conducted with respondents who initially interviewed while pregnant and gave birth before July 2020.

The interview techniques and elements of analysis followed patterns of grounded theory (Strauss and Corbin 1997). Specifically, an abductive analytical approach emerging from a grounded theory foundation (Timmermans and Tavory 2012). The themes that I analyzed in the research were treated as emergent and continued throughout the data collection and coding processes. First, I wrote a series of memos based on the interviews. I grouped the interviews to ascertain preliminary themes and patterns and sorted them into clusters. Following initial coding to discern the scope of relevant themes, interviews were reanalyzed in a process of focused coding centered on futurity (Charmaz 2014).

This research focused on respondents who participated in family formation processes that include the embodied experiences of pregnancy, and childbirth. The purpose here is not to essentialize the family formation process to biological reproduction; however, the focus of this research is limited to those who experienced gestation.

Of the 50 people interviewed, 49 identified as women, one identified as a non-binary expectant mother; I identify them as such. I use the terminology “birthing people” and “people experiencing pregnancy, birth and postpartum” to speak to the multitudes of identities within this sample. Visibility of gender nonconforming, transgender or gender-neutral parenthood is critical in addressing inequalities and affirming the categories of parenthood that fall outside of the male/female man/



woman binaries (Reisner et al. 2016). In addition, acknowledgement and analysis that addresses biomedical violence against bodies with uteruses or gendered bodies categorized as women's is an important component of both historical and contemporary reproductive biopolitics. I acknowledge this tension, and for the purpose of this paper, use the words "maternal" "motherhood" and "women" when appropriate, not as a form of erasure of parents that fall outside this category, but to acknowledge the historicity and present use of these categories and their social meanings. In addition, I asked respondents to self-describe their racial-ethnic identities and identified them by such in my analysis; (40% identified as white, 18% identified as Black 18% identified as Hispanic, 16% identified as Asian American, 6% identified as Mixed Race, 2% identified as Ashkenazi Jewish).

Data

Based on the experiences of interviewees who gave birth during the onset of the pandemic in the US, I systematize the narratives around various motifs and stressors that shaped the reproductive experiences and imagined futures of mothers beyond the effects of COVID-19. I distinguish between fetal and maternal health stressors, economic stressors, racial and political stressors, and global emergency stressors. In doing so, I illustrate the relativity of crisis and explore how imagined reproductive futures are constructed or altered in response. Many interviewees experienced multiple stressors listed; these categorizations are neither exhaustive nor exclusive. Following, I examine the salience of compulsory maternal optimism amidst respondent reflections.

Few stressors

The pandemic impacted the lives of everyone in this study, even the most socio-economically protected from infection and residual effects articulated changes to their imagined reproductive futures. For a small group of mothers—who were primarily partnered, financially stable and welcomed the news of pregnancy—new biomedical restrictions during labor were the most salient stressors. These mothers viewed COVID-19 as a short-term biomedical challenge that would change the experience of birth, but not have a strong impact on the future. Even as COVID-19 created a potentially threatening context for mothers and newborns, this did little to affect the tenor of motherhood for this group of respondents. Protected by their socio-economic status that afforded them stability and feelings of safety during and after labor, motherhood and the reproductive experience underwent few changes despite global disruptions. A first-time middle-class mother illustrated this,

I actually had always planned on doing something called *quarantena* [...] 40 days of being with your baby after the birth. We're Colombian, my culture does this [...] that had always been part of my birth plan. And now it's funny that I'm having quarantine before the baby, it's being imposed on me at this point. But my idea of early motherhood has not been changed so much by COVID-19.



While mothers who faced other stressors expressed reproductive regret, anxiety, or guilt about gestation and motherhood, those subjected to less stressors remained neutral or positive. A mother of two in this group expressed this,

If I knew that all this was going to happen, I would still have tried to have a baby. I mean, I wouldn't change anything that happened just because of COVID-19.

The disruption of the pandemic did little to threaten this mother's privilege and enthusiasm, reiterating the differential experiences of crises. I now consider this group's imagined reproductive futures in relation to their few relative stressors, finding strengthened hope and optimism about reproducing amidst COVID-19.

Reproductive futurism for respondents with few stressors

The majority of mothers in this study faced various stressors during reproduction—often compounded by COVID-19—that challenge the assumptions of reproductive futurism and created nuanced future imaginaries. Those with few stressors by contrast, generally welcomed reproduction and imagined optimistic reproductive futures. When asked how COVID-19 changed her future conceptions, an expectant mother described what many expressed, a general sense of awe at this historical episode, with no anticipation of a negative future effect. She imagined recounting the experience to her future child,

This was kind of a once-in-a-lifetime event, and you were born during it, and times were really weird, but it doesn't really matter, and it didn't really have an impact on your life [...] We got through it and that whole time, we were able to look forward to your arrival.

Beyond the minimal impact of COVID-19 on her family, pregnancy was an especially positive element of lockdown, giving this mother something to look forward to; her child representing an optimistic future, justifying present challenges.

Others similarly imagined the future as post-pandemic and anticipated recounting the experience to their children as one of historical importance, with little personal effect. Optimistic meaning-making of COVID-19's disruptions of reproductive experiences were available to mothers facing few stressors, as their safety and capacity to realistically imagine optimistic futures were unchallenged—specifically due to their disproportionate socio-economic privilege that shielded them from COVID-19's threats, and various compounding stressors. In their unchallenged optimism, these mothers may have reflected their trust that current policies serve their children's futures, or the inadequately universal framing of Edelman's futurism concept.

Most mothers described various stressors compounded by COVID-19 that influenced their reproductive experience and created nuanced reproductive future imaginaries. In addition to illustrating these diverse imagined futures, I examine how compulsory maternal optimism co-exists with both expansive and contracting future imaginaries.



Health stressors

Fetal health stressors—such as atypical fetal development—and maternal health stressors—primarily mental health related challenges—changed conceptions of life postpartum for mothers in this study. In combination with biomedical challenges of COVID-19 and future uncertainty in the wake of the pandemic, respondents facing biomedical stressors experienced especially challenging reproductive experiences, and held contracting future imaginaries compared to those with fewer or alternative stressors. In line with literature on fetal testing, and pregnancy and disability, mothers in this study anticipated healthy pregnancies prior to the processes of fetal testing; fetal health stressors then challenged expansive reproductive future imaginaries associated with expectations of healthy pregnancies. The biomedical restrictions imparted during COVID-19 made challenging fetal testing and perinatal mood and anxiety disorders (PMAD) even more difficult to experience or overcome, while the uncertainty of the pandemic made futures interrupted by unexpected fetal diagnoses and challenged by mental health stressors feel even less certain.

For these mothers, the social isolation enforced through biomedical restrictions during the pandemic negatively impacted their ability to cope with challenging fetal and maternal health stressors. For example, a mother of three described undergoing fetal testing that eventually determined her son had Down syndrome. Due to COVID-19 restrictions, she attended the twice weekly appointments throughout her pregnancy alone, while her doctors wore masks, gloves and face shields. She described how COVID-19 restrictions worsened the challenging appointments,

The only thing that I needed in this whole process was... someone to touch me. Like, a hug or a hand hold.... Like, a pat on the shoulder even, just some kind of physical touch was what I needed, but no one could even come within six feet. My husband couldn't be there, no other moms could be there, the doctors couldn't do it.[...] I've never realized how much I needed physical touch. Like, I can't... I can't do these appointments alone.

For a mother of two facing fetal health stressors during her last pregnancy, compulsory maternal optimism, and the expansive future imaginary she originally held were challenged by the difficult news she received,

[I'm] sad that this is our last pregnancy, and I'm feeling robbed of that experience. Sad that it's happening in coronavirus, and my husband can't be at these twice a week appointments that I'll have until this baby is born. Sad that every single time I go to the doctor, I'm going to be putting myself, and this whole family, and this baby at risk, because of coronavirus. Um, and just sad that this baby isn't going to have... the same life that we had thought this baby would have.

Maternal health stressors were exacerbated in the context of the pandemic too. Many in this study described mental health stressors such as PMAD, which



affect about a quarter of birthing people in the US (Susser et al. 2021). Some had symptoms of PMAD in previous pregnancies and feared repetition, while others reported increased symptoms during COVID-19, mirroring national increases of 150% during pregnancy and 115% postpartum (Ceulemans et al. 2021; Lebel et al. 2020). Mothers with mental health stressors held overwhelmingly contracting future imaginaries or were unable to imagine a future at all. For some, these symptoms pre-existed or overshadowed pandemic related stressors,

I have anxiety about sleeping at night and making sure [my son] is safe when he's sleeping. I've heard about sudden infant death syndrome, and it makes me really nervous. That's what I'm mostly anxious about, even with Coronavirus, is mostly what happens when we get home.

For others, however, COVID-19 exacerbated pre-existing mental health stressors by representing an added risk to already tenuous anticipations of childbirth. A first time mother with anxiety and depression illustrated this,

I felt a growing sense of anxiety every day. I felt the weight of the world was on my shoulders. There was just this sense of paranoia, and anxiety, and wanting to be happy about the birth... but also not wanting to think about what could go wrong on top of all the other risks that come with delivery. Now you've got this added risk of the virus, and being exposed to something and ultimately exposing your newborn child to it.

Like for those with fetal health stressors, the social isolation of the pandemic also interrupted essential care networks that mothers previously relied on to navigate PMAD, with potentially devastating effects. For example, a mother of two who faced perinatal OCD with her first child anticipated an isolated postpartum following delivery. She described how essential social support was with her first child, and the potential stakes of COVID-19 influenced isolation in conjunction with her maternal mental health stressors,

One of the compulsions that I had with OCD was that I couldn't be alone with the baby, I couldn't be alone by myself, because I had obsessive thoughts that I could potentially hurt myself, or I could potentially hurt the baby. And these intrusive thoughts are super real and super scary. Like, why am I thinking about this stuff every minute of the day? So, the support to me is essential, it's my life jacket. I just need that reassurance and that protection.

In addition to changing the gestational and postpartum experiences, fetal and maternal health stressors exacerbated by COVID-19 caused changes to how mothers imagined the future for themselves and their children.

Reproductive futurism for respondents with health stressors

For mothers with health stressors, the compulsory maternal optimism associated with reproduction on top of COVID-19 related stressors cast the reproductive



experience in a new light. A mother described the shift of experiencing her pregnancy as depressing rather than enjoying it as expected,

It's just stressful with everything going on in the world, it's overwhelming. I just feel really overwhelmed. [...] it's a whole different world than we're used to. Not being able to feel safe, and not having the slightest bit of control over what's going on around you. [...] it's very depressing to be pregnant and not be able to enjoy it. It's just really depressing.

While pregnancy offered parents with few stressors the capacity for optimistic future imaginaries despite COVID-19, mothers with fetal and maternal health stressors during the pandemic contracted their imaginaries of the future. Regardless of the primary concern—fetal diagnoses or PMAD symptoms—mothers with health stressors lacked the compulsory optimism suggested by reproductive futurism. Some described difficulty eliciting excitement, reproductive futurism's underlying current and the dominant cultural narrative of pregnancy. Instead, respondents were overwhelmed with despairing reproductive imaginaries. Poor generation of possible futures, and negative beliefs about the future are also primary elements of depression (Roepke and Seligman 2016) and difficulty imagining futures or faulty prospection may be causal symptoms of it. Mothers with mental health stressors revealed preoccupations with day-to-day survival as a barrier to future imaginaries—instead of a promise, the future became an unattainable destination. When asked how she imagined the future, a mother of three with depression and little social support due to pandemic restrictions described her preoccupation with challenging present circumstances,

You always feel like you're never quite doing enough. I am not the mom I want to be right now because I'm in survival mode. It's basically trying to get to nap time and then trying to get to bedtime, and then doing it all over again with no end in sight.

For those facing fetal health stressors, the future was often painful to articulate, and overwhelmingly contracting. While these mothers described COVID-19 as impacting their reproductive experiences, such as little support during challenging doctors' appointments and isolated postpartum periods, their imagined futures related to health stressors more than potential long-term effects of COVID-19. For example, a mother with fetal health stressors described her fears of the future,

Will I outlive my baby? Is my baby going to die before me? Will this baby, this adult be living with us for the rest of our lives now?

The disruption of optimistic imaginaries from health stressors also had surprising effects on the present. Unlike reproductive futurism's premise of a brighter future justifying difficult present experiences, fetal biomedical stressors sometimes had the opposite effect—creating enjoyment of the present under the shadow of future challenges. A pregnant mother anticipating a baby born with developmental abnormalities described this,



Every single week gets harder and harder and harder. [cries]. So, we're counting the easier days when things do go well. We're finding so much comfort in those days. They feel so good. The good feels so much better now than it would've ever before.

For the majority of respondents facing health stressors amidst COVID-19, however, the compounded disruption of optimistic imaginaries was overwhelming. A mother with fetal health stressors articulated,

Right now is really, really hard. I would not have wanted to be pregnant during a pandemic. We would've waited longer. Just all the 'what ifs,' what if we waited a little bit to not be in this situation of being pregnant, in a pandemic, and having a special needs child?

Though all mothers under pressure of health stressors tended to imagine contracting futures, as in all other categories, socio-economic context influenced participant response and capacity to manage co-existing stressors. To examine the effect of resources on reproductive imaginaries, I turn to economic and household stressors.

Economic and household stressors

Like the millions of Americans facing economic insecurity and unprecedented rates of unemployment during the pandemic, most mothers in this study reported economic stressors during their pregnancies. Some were able to continue working, though many became unemployed, had partners who lost jobs, or struggled with newborn expenses.

Economic stressors sometimes predated COVID-19, especially in the cases of unplanned pregnancies. However, the impact of COVID-19 on top of preexisting economic stressors was catastrophic for some families. Mothers employed as essential workers, in low wage jobs or who were unable to transition to virtual work faced difficult decisions between dangerous labor conditions and income loss. For example, a single mother expecting her first child from an unplanned pregnancy described the predicament of choosing to work or staying home to avoid infection,

I can't go to work because it's not safe for my daughter, but I really, really need to go to work because I can't afford to provide for my daughter.

Another first-time mother described her frustration with the illusion of choice between working to keep herself and her family safe, and maintaining a livable income,

When I hear people say, 'oh you shouldn't be at work!' I'm like, well that's very not reassuring. I wish that people would stop telling me that, because, do you want to pay my fucking bills? I wish that people would keep that in mind for when they just throw out these fucking ideas of, 'well you could just be at home!' Well sure! I'd love to never work again, but this is where we're at.

The US' lack of paid parental leave policy was impactful, as pregnant workers negotiated exiting dangerous labor conditions with their families' economic needs.



Single parents were especially vulnerable to economic stressors during COVID-19. A first-time mother who left a violent partner articulated this,

What I was using for maternity leave, I'm using for bills now, and any extra money that I had, I was going to use to purchase things for my daughter. I was able to buy her crib, but I was planning to have some sort of an income to help me raise money for my daughter. [...] Like, that's everything I've got.

These realities illustrate the absence of substantial public programs to help the economic security of new families. Pandemic related policy expansions are temporary—many have expired—demonstrating both the power of government benefits to reduce poverty and the looming hardship for families without essential resources. Further, those who did rely on public assistance were not guaranteed substantial aid. An expectant mother who lost their job during the pandemic notes the compounded effects of economic hardship,

We don't have any income, we weren't able to defer our mortgage, and I wasn't able to defer my student loans. And I applied for unemployment which still hasn't gone through. We have some money right now, and I think we'll be okay for a few months, but then after that, I really don't know.

Reproductive futurism for respondents with economic and household stressors

Imagined reproductive futures of respondents with economic stressors were generally short-term; without the security of next month's rent and pending newborn costs, participants were less likely to imagine long-term futures. While some future conceptions are abstract, economic stressors are immediately impactful, which may in part have explained the short-term imaginary of these mothers. Financial stressors are also situational, and manageable or urgent depending on household circumstances. Surprisingly, respondents were generally optimistic about the short-term future, even in the midst of economic instability and pandemic related challenges. Given the variation of economic stressors, several themes emerged for this group. The first was general anxiety about future economic insecurity instead of COVID-19 related stressors preoccupying reproductive future imaginaries. When asked if COVID-19 impacted how she imagined the future, a first-time mother situated the pandemic as one of many inevitable future disruptions, and centralized her immediate economic insecurity instead,

I feel like there's always going to be something going on in the world that will affect the future of our children, those things are going to be a part of, you know, parenthood. I just don't know how we're going to handle childcare.

Here, economic uncertainty dictated future conceptions and recalibrated the reach of the imagined future to the immediate.

A second theme aligns with Edelman's logic of reproductive futurism—that children will usher in a brighter future, despite present circumstances. A first-time mother facing pandemic related economic insecurity illustrated elements of compulsory maternal optimism in her anticipations of the future,



I'm still bringing a baby into this world, and he'll be loved, so it will be fine. I think certainly we'll be under more stress once this is all said and done. My husband was laid off, I'm taking a significant salary cut, it's not great, it's adding more stress on top of what's already a stressful situation. I just keep reminding myself to look at it from the baby's perspective, and none of that really matters. As long as we have the absolute essentials, we'll be fine.

Some mothers described the joy of a newborn as a welcome distraction, despite financial challenges. A mother of two demonstrated this commitment to optimism amidst hardship,

I have faith that everything's going to be okay, even though it's terrifying. I don't feel like I really have any other choice. I'd rather not be in that space of constant fear. I just want to focus on my baby as much as I can.

A third theme is the power that pregnancy held to make economic stressors visible and urgent. For two expectant mothers, this resulted in unprecedented community support.

I've gotten an outpouring of different types of support that I don't think I would have gotten otherwise; I've had friends and family just send us baby supplies and sign up for a meal train. We had someone gift us a large sum of money so we can pay our rent and just feel that security, which was really hard to accept, but also really heartwarming.

A mom in a Facebook group from my city said that she had some diapers and wipes for newborns, so I went to her house and she saw me—I was really pregnant—she started to cry, and said, 'I want to help you, I want to you to be safe,' and she started to give me a lot of things for the baby, she was really supportive and sympathetic.

In these cases, the visibility of pregnancy helped alleviate economic stressors in the short-term and allowed for a sense of optimism despite both financial and pandemic related challenges. Lastly, some respondents who overcame previous hardships had optimistic imagined futures based on experienced resilience. An expectant mother of two relied on her family's history of overcoming prior economic challenges to contextualize her current stressors,

I feel like whatever happens, I know that I'm going to be okay, and I feel almost worse for people who've never experienced poverty, who are totally shocked by it and confused and don't know resources. We're kind of thrifty, we've been doing it.

Racial stressors

Research investigating how racism's impact on health continuously emphasizes reproduction as an area of unequal treatment; the racial disparities in maternal and infant mortality and inadequate pain management for birthing people of color has gained national attention. Persistent reproductive health disparities coupled



with disproportionate impacts of COVID-19 on communities of color magnified racial stressors that some mothers described throughout their pregnancies. In this study, the majority of mothers of color described racial stressors—specifically anti-Black racism in the context of police brutality and racialized medical harm—impacting their reproductive expectations and imagined futures both prior to and influenced by COVID-19. Several Black expectant mothers in this study specifically referred to disproportionate rates of maternal mortality for Black women during labor as influencing their expectations of childbirth. With the social restrictions in place during hospital delivery, a Black mother expecting her fourth child described her heightened fears of maternal mortality and medical neglect without her social support in the room to advocate for her,

I worry that, you know, not all hospital staff genuinely care about what they do or are happy with their jobs. And to know that I'm gonna be in the hospital or potentially could be in the hospital by myself... I don't think everyone has accountability if they do something wrong. That makes me nervous. And to be honest, you hear plenty of stories of Black women dying in childbirth.

Racial bias can have both longitudinal and acute effects on childbirth (Vedam et al. 2019). While some mothers described generalized fears of the high maternal death rate, others described specific instances of trauma during labor; specifically, the combination of racialized medical care and COVID-19 restrictions inhibiting social support and advocacy during traumatic deliveries. A Black mother of three described her delivery experience during COVID-19,

I had a bunch of people come into the room when I was there, and I felt uncomfortable. I guess I should've said no, but I couldn't say no because they were already there. I felt like I was being pressured to sign the consent to have a c-section. Thankfully my OBGYN gave me another chance when she was there. But when she wasn't there [cries] sorry, I just felt like they weren't listening to me.

Immigrant mothers in this study also expressed stressors during delivery, such as the absence of close family, language barriers and biases from medical staff based on race or immigration status. A mother of two from Mexico described her experience during labor without the capacity for social support during delivery,

I felt like they thought I didn't know what I was talking about. They would look at me like, 'you need this' and I wanted to know, why do I need to have these procedures? Why is my heart rate so fast? I felt like I was not being explained anything, they just felt like they knew what they were doing.

Not all mothers of color in this study described traumatic deliveries or racial stressors; some had positive experiences, described trust of their medical providers, or optimistic expectations. Class distinctions may in part explain the different labor experiences and expectations between the mothers who did anticipate or express racial stressors and those who did not; predominantly working and



middle-class mothers of color either anticipated or experienced racial stressors, whereas the mothers of color who did not were middle to upper class. Stressors that mothers experienced are neither exhaustive nor exclusive, as their various combinations created contexts of exacerbated stress for some, or minimized the effect of particular stressors for others.

In addition to maternal health disparities, during the spring and summer of 2020 while these interviews were conducted, racial politics in America recaptured public attention in the wake of numerous police killings of Black people, and the subsequent collective organizing during the Movement for Black Lives. The demand for an end to police brutality and a reckoning with the racist foundations and ongoing racial violence in the US sparked global uprisings, all while the US grappled with the disproportionate rates of COVID-19 infections, hospitalizations and deaths for communities of color. This context also influenced expressions of imagined reproductive futures for respondents in this study.

Reproductive futurism for respondents with racial stressors

The reality of racism and racial health disparities might have influenced the imagined reproductive futures of a broad range of respondents outside of those who identified racial stressors during their reproductive experiences—such as respondents preoccupied with pessimistic future imaginaries or who expressed global emergency stressors in the context of renewed national attention on racial violence. However, racial stressors shaping reproductive future imaginaries were notably localized among the Black mothers in this study, therefore their experiences are centralized in the analysis.

Racial stressors influenced reproductive future imaginaries for Black mothers in part due to COVID-19, and in part due to anticipations of raising children amidst anti-Black violence. Critics of Edelman have pointed to his assumptions of a singular future; by asking whose reproductive futures are implied in reproductive futurism, scholars have pointed to how Edelman's analogy excludes the histories and specificities of racial oppression, specifically how marginalized communities have been "systematically deprived of their own reproductive futures, biological or otherwise," (Sziarto 2017). This is clear in the context of COVID-19 too; for some Black mothers who articulated racial stressors, future imaginaries were influenced by fears of racial violence despite the threat of COVID-19. A Black mother of two illustrated this,

I'm kind of worried about COVID-19, but I'm more worried about what's going on in the US with the police. Being a Black person, to me that is more scary than the virus. And I'm not saying the virus is not scary, because having kids, it makes you nervous. But I'm more scared, my biggest worry is what's going on with the country.

Despite COVID-19's disproportionate effects on communities of color, most mothers with racial stressors imagined futures dictated by fears of survivability beyond the pandemic's reach,



I just want to feel safe. Honestly, I would like a space where I feel safe to raise my kids. You know, where I would be able to feel safe outside without getting killed. I just want to feel safe.

Some of these mothers reveal what Patricia Hill Collins called the “fundamentally contradictory institution” of Black motherhood amidst state-sponsored anti-natalism and racial violence (1998, p. 195). Some intolerable conditions of motherhood do not necessarily negate the possibility of optimism; hopes of fetal futurity may justify demand for political and social action. For those reproducing amidst renewed attention of ongoing racial violence, a safe and survivable imagined future was a necessary hope. A Black mother of three articulated this,

[What do I envision for] the future? I want to stay hopeful but... I guess just equality. I hope that we are able to feel safe going outside without getting killed or profiled by police. I just want to feel safe for my kids to go outside (cries). Sometimes, I do feel like we are heading there.

For a Black mother of two, social movements in response to racial violence inspired optimism,

We’ll tell [our children] how we made it in the time of uncertainty. We’ll tell them that people were brave enough to stand up against injustice. And because of them and their resistance, we hopefully, we’ll be able to be better now. And we’ll teach them how to be brave, and how to stand up for justice.

Despite racial and COVID-19 related stressors, this mother imagined recounting present struggles as a path toward an optimistic future. Alondra Nelson has spoken to this, “Dystopia can be an enduring state for Black communities, but that utopia is also always being imagined, embodied, dreamed and constituted in everyday acts of thriving,” (Nelson 2020). For the Black mothers interviewed, the ongoing impact of structural racism did not obliterate the capacity for hope, though the effects on maternal wellbeing should not go ignored. Black mothers in this study engaged less with the crisis discourse of COVID-19 than with the persistence of anti-Black violence in the US, and still refused crisis as the entirety of their maternal identities (Nash 2019, p. 105).

Not all who experience oppression or crisis engage with hope. Next, I examine the responses of mothers who described global emergency stressors and their resulting contracting and doomful future imaginaries. In some cases, pessimism in response to present crises may reveal threatened privilege, which can have devastating effects of alarmism. As the next section will illustrate, hope is not the unilateral response to reproductive stressors.

Global emergency stressors

For a group of mothers I interviewed, COVID-19 represented the tip of the iceberg in an imagined future of global emergencies. These borderless imagined disasters were identified based on respondents’ most pressing existential concerns—some discussed the population crisis, future pandemics, or eco-catastrophe; others spoke of



a general contracting future. COVID-19's massive media and public attention may have contributed to the catastrophic future that some articulated; for others, global emergency stressors predated the spread of the virus and had greater influence on their imagined reproductive futures than the pandemic, such as for this first-time mother,

My husband and I never expected the world to be like how my mom or grandmother lived in it. When the pandemic happened, it didn't surprise us that much.

Contracting futures were the context in which these mothers anticipated reproducing. For those who explicitly connected COVID-19 to contracting futures, the pandemic invited broader global disaster narratives to future conceptions instead of representing a singular threat. A first-time expectant mother situated the pandemic within her prior expectations of future global emergencies,

It's a scary time, because you're aware of certain dangers, but the current pandemic really makes you sit back and think about everything that your child is gonna go through.

Despite COVID-19's exacerbation of some mothers' global emergency stressors and generally contracting reproductive future imaginaries, respondents justified their decisions to reproduce. A first time mother described over-population and future pandemics as influencing her future imaginary,

If I die and I didn't become a mom, I'd feel like something was missing. So, we want to compromise—we're just gonna have one child. Hopefully that will kind of be a compromise for both sides.

Notably, mothers in this group did not report experiencing material effects of global emergency stressors throughout their pregnancies, though contracting future imaginaries did affect reported mental health.

Reproductive futurism for respondents with global emergency stressors

Mothers reporting global emergencies stressors already anticipated contracting futures. As a mother of three stated, COVID-19 had little effect on her imagined reproductive future in relation to other anticipated global emergencies,

Maybe it's a pessimistic, but I think [COVID-19] is the first of many disasters that are going to happen over [my daughter's] life. I guess depending on what happens in the future, I wonder if this is even gonna be a big thing, considering climate change, and a lot of other scary things that I think could happen in the future; we're already expecting these disruptive events.

These mothers also expressed the least compulsion toward maternal optimism than mothers with other stressors. Alternatively, reproducing amidst felt or anticipated global emergencies evoked a sense of maternal obligation—to serve, protect, and 'save' doomed future imaginaries. An expectant mother described her



felt responsibility to birth the generation that could alleviate harm from impending disasters,

You never know what the world is going to be. But then you think about it, it's like, no, you need to be part of the generation to create the generation of children and future that you want to see.

Despite the lesser degree of optimism among these mothers, the cultural pressure toward maternal optimism remained; for some, this inspired reproductive guilt. A mother of three described this,

I feel like pregnancy and motherhood is a very celebrated and happily emotionally charged experience, and I don't feel as if people like to talk about the negative. But the guilt of the experience is real. Before I had three kids, I was feeling guilty about bringing in a third child, because who knew what the world would be? And now my exact fears are coming true.

Another mother shared her guilt about reproducing amidst COVID-19 and other anticipated global emergencies,

Bringing a child into a world that is already shattered and broken right now... it's like, what am I doing? It's almost as if I feel resentful toward myself, like what am I doing to you? Why am I doing this? Why am I putting a child through this who didn't have a choice?

Researchers have pointed to the connection between race and global disaster or “ecoanxiety” (Albrecht 2011). While the effects of the global disasters these mothers described would and already do disproportionately affect communities of color, some scholars have questioned whether climate anxiety is a particularly white and upper-class phenomenon. Jaquette Ray (2020) claims that newfound climate related anxieties of a contracting future reveal the insolation from oppression that many who describe these stressors have been afforded. While this is a profound analysis, mothers in this study described broader contracting futures than climate change and were made up of a more diverse sample than white middle-upper class respondents. This may be due to the unavoidable impact and media coverage of COVID-19 increasing global emergency stressors across racial and socio-economic groups; it could also be the increasing impact of climate emergencies on all populations.

In either case, respondents in this sample justified their reproductive decisions, despite contracting future imaginaries and reproductive guilt. A mother expecting her first child who described overpopulation and climate change among her global emergency stressors justified her decision to become pregnant,

In the last couple years, what it really came down to was this image of being old and preparing to die, and not having a child. That was really heart breaking to me.

Unlike some mothers with racial stressors who held future hope despite present challenges, this group varied in its commitment to hope, yet chose to reproduce and justified the choice either through guilt, duty, or compromise. Although these



mothers were not exclusively white and upper-class, many borrowed from racist logic embedded in “populationism,” and the urgent heroism of responsible family planning as a solution to global problems (Sasser 2017, 2018). Despite respondents’ personal justifications, the impacts of their contracting future imaginaries may contribute to the growing popularity of wielding crisis narratives to inspire scientific racism, and neo-Malthusian logics and policies.

Discussion

The future is not what it used to be. In this research, I have illustrated how in the context of childbirth during COVID-19—and with the influence of additional and coexisting stressors during reproduction—reproductive futurism, as in Edelman’s polemic, is no longer as it was once conceptualized. I have analyzed how collective crisis is experienced differentially through conditions that affect childbirth by developing the concept ‘imagined reproductive futures’ to capture how mothers imagine, and have the capacity to imagine, diverse futures. I found evidence that troubled the assumptions of a monolithic future implied in Edelman’s concept by showing how stressors and intersectional social identity influenced future prospection.

Reproductive scholars have long been concerned with what feminist futures look like; while much of the literature centralizes reproductive futures in relation to technology, this research rejects technological determinism (Haraway 1985) as an avenue of future theorization. By centralizing social identity and nontechnological analyses of future prospection (Franklin and McNeil 1988), I offer a distinct avenue toward theoretical analyses of futurity. Within this context, I have shown first how imagined futures are reconstructed in the context of crisis and second, how future projections are shaped by social processes, as dynamic forces that influence behavior.

My analysis suggests that health stressors of fetal diagnoses and perinatal mood and anxiety disorders challenge expansive conceptions of futurity, while COVID-19 negatively impacted the ability to navigate and cope with unknown futures. Feminist and disability scholars have pointed to the prenatal genetic testing as following the logic of perfection, in which having an ‘imperfect’ child both culturally ‘others’ people with disabilities, and transforms the meaning of mothering a child with a disability (Buchbinder and Timmermans 2011). I found that fetal health stressors in conjunction with the unknown future of COVID-19 recast reproduction as despairing and compounded reproductive regret for many of these mothers. My analysis also found that compulsory maternal optimism was absent for those facing maternal mental health stressors. These findings of imagined reproductive futures counter reproductive futurism’s adherence to a utopian monolithic ideal.

I also found that mothers facing economic stressors expressed general anxiety about future insecurity that preoccupied their imagined reproductive futures instead of preoccupations with the pandemic. However, compulsory maternal optimism remained as mothers’ anticipations of ‘perfect’ newborns persisted, despite immediate economic hardship. Hope by means of optimism (Murray and Tizzoni 2021) may mobilize mothers to imagine achieving what they want for their children’s futures, despite systemic realities of structural inequalities (Henderson and Denny



2015). This was the case for mothers who identified racial stressors too; COVID-19 related stressors were eclipsed by anti-Blackness in the US, while compulsory optimism remained as a means of necessary hope and as a refusal of crisis singularly representing Black mothers' maternal identities.

Alternatively, my data suggest that mothers expressing global emergency stressors held contracting imagined reproductive futures that pre-existed COVID-19, with varying commitments to hope. While anticipatory pessimism in the global context was salient, individual optimism and meaning-making of motherhood amidst crisis remained. The consequence of reproductive guilt challenge Edelman's original conception of reproductive futurism, though expressions of reproductive duty despite contracting imaginaries reflects the pervasive inclination in contemporary society and normative motherhood narratives toward applying meaning and purpose to reproductive decision-making.

Context and imagined reproductive futures are mutually constituted. What might otherwise be considered the primary and secondary aims of the study intertwined when respondents illustrated how reproduction during COVID-19 was experienced differentially and thus led to diverse imagined reproductive futures. If a collective ethic can emerge from the perspective of these mothers, it is compulsory tendency toward maternal optimism despite present circumstances. The role of the mother—in Western cultural discourse—is the obligation,

In spite of her intimate familiarity with a tragic past, [to] take on the romance of motherhood, thus “inscribing her denial of history, her own flight from suffering, across the body and mind of her child” (Rose 2018, p. 183; Yianna Liatros 2021)

We can now add—a prioritization of optimism in spite of her intimate familiarity with a tragic past—and diverse and contracting conceptions of the future.

Compulsory optimism is not only an effect of normative motherhood, but increasingly required as a biological necessity with intergenerational consequences. Epigenetic studies have drawn attention to the womb and maternal behaviors as “environments of consequence for the future,” (Lappé 2016). The mother/child dyad has become the organizing principle around which researchers study the biological effects of stress, trauma and adversity on individual and intergenerational health (Landecker and Panofsky 2013; Lappé 2016; Martine and Jeffries Hein 2021). My analysis suggests that compulsory maternal optimism is increasingly consequential and pervasive, despite present challenges and future imaginaries that suggest otherwise. I uncover ambivalence toward compulsory optimism only in contexts of health stressors in which parental expectations of ‘perfect’ children and idealized motherhood have been destabilized (Landsman 1998). Future research might explore the limits of compulsory maternal optimism and its effects on maternal wellbeing.

These findings have implications for feminist and health researchers; as the reality of reproductive choice shifts amidst abortion policies in the US, future research might investigate the persistence of compulsory optimism despite reproductive regret. Imagined reproductive futures amidst affective, temporal and material stressors will also be a useful site of analysis as global crises evolve in coming decades.



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Declarations

Conflict of interest The corresponding author states that there is no conflict of interest.

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References

- Adams, Jacqueline. 2004. The imagination and social life. *Qualitative Sociology* 27 (3): 277–297. <https://doi.org/10.1023/B:QUAS.0000037619.28845.ef>.
- Adams, Vincanne, Dominique Behague, Carlo Caduff, Ilana Löwy, and Francisco Ortega. 2019. Re-imagining global health through social medicine. *Global Public Health* 14 (10): 1383–1400. <https://doi.org/10.1080/17441692.2019.1587639>.
- Albrecht, Glenn. 2011. Chronic environmental change: Emerging 'psychoterratic' syndromes. In *Climate change and human well-being: Global challenges and opportunities, international and cultural psychology*, ed. I. Weissbecker, 43–56. New York: Springer.
- Berlant, Lauren. 2011. *Cruel Optimism*. Duke University Press.
- Biernacki, Patrick, and Dan Waldorf. 1981. Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods & Research*. <https://doi.org/10.1177/004912418101000205>.
- Brubaker, Rogers. 2020. Populism and nationalism. *Nations and Nationalism* 26 (1): 44–66. <https://doi.org/10.1111/nana.12522>.
- Brubaker, Sarah Jane, and Heather E. Dillaway. 2008. Re-examining the meanings of childbirth: Beyond gender and the 'natural' versus 'medical' dichotomy. In *Advancing gender research from the nineteenth to the twenty-first centuries*, vol. 12, ed. M. Texler Segal and V. Demos, 217–244. Bingley: Emerald Group Publishing Limited.
- Brubaker, Sarah Jane, and Heather E. Dillaway. 2009. Medicalization, natural childbirth and birthing experiences. *Sociology Compass* 3 (1): 31–48. <https://doi.org/10.1111/j.1751-9020.2008.00183.x>.
- Buchbinder, Mara and Stefan Timmermans. 2011. Medical technologies and the dream of the perfect newborn. *Medical Anthropology* 30(1): 56–80.
- Caduff, Carlo. 2015. *The pandemic perhaps: Dramatic events in a public culture of danger*. Berkeley: University of California Press.
- Caplan, Paula J. 1985. Mother-blaming in major clinical journals. *American Journal of Orthopsychiatry* 55(3): 345–353.
- Cappellini, Benedetta, Vicki Harman, Alessandra Marilli, and Elizabeth Parsons. 2019. Intensive mothering in hard times: Foucauldian ethical self-formation and cruel optimism. *Journal of Consumer Culture* 19 (4): 469–492. <https://doi.org/10.1177/1469540519872067>.
- Ceulemans, Michael, Veerle Foulon, Elin Ngo, Alice Panchaud, Ursula Winterfeld, Léo. Pomar, Valentine Lambelet, Brian Cleary, Fergal O'Shaughnessy, Anneke Passier, Jonathan L. Richardson, Titia Hompes, and Hedvig Nordeng. 2021. Mental health status of pregnant and breastfeeding women during the COVID-19 pandemic—a multinational cross-sectional study. *Acta Obstetrica Et Gynecologica Scandinavica* 100 (7): 1219–1229. <https://doi.org/10.1111/aogs.14092>.
- Charmaz, Kathy. 2014. Grounded theory in global perspective: Reviews by international researchers. *Qualitative Inquiry* 20 (9): 1074–1084. <https://doi.org/10.1177/1077800414545235>.



- Coleman, Rebecca. 2017. A Sensory sociology of the future: Affect, hope and inventive methodologies. *The Sociological Review* 65 (3): 525–543. <https://doi.org/10.1111/1467-954X.12445>.
- Colen, Shellee. 1995. 'Like a mother to them': stratified reproduction and West Indian childcare workers and employers in New York. In: *The Global Politics of Reproduction: Conceiving the New World Order*. University of California Press: London, 78–102.
- Collins, Patricia Hill. 1989. The social construction of black feminist thought. *Signs: Journal of Women in Culture and Society* 14 (4): 745–773. <https://doi.org/10.1086/494543>.
- Conrad, Peter, and Miranda Waggoner. 2017. Anticipatory medicalization: Predisposition, prediction, and the expansion of medicalized conditions. In *Medical ethics, prediction, and prognosis*. New York: Routledge.
- Crenshaw, Kimberle. 1991. Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review* 43 (6): 1241–1299. <https://doi.org/10.2307/1229039>.
- Davis-Floyd, Robbie E. 2003. *Birth as an American rite of passage: Second edition, with a new preface*, 2nd ed. Berkeley: University of California Press.
- Edelman, Lee. 2004. *No future: Queer theory and the death drive*. Durham: Duke University Press.
- Epstein, Steven. 1995. The construction of lay expertise: AIDS activism and the forging of credibility in the reform of clinical trials. *Science, Technology, & Human Values*. <https://doi.org/10.1177/016224399502000402>.
- Fox, Bonnie, and Diana Worts. 1999. Revisiting the critique of medicalized childbirth: A contribution to the sociology of birth. *Gender and Society* 13 (3): 326–346.
- Frankfurter, Claudia, Taylor A. Buchan, Jeremy Kobulnik, Douglas S. Lee, Adriana Luk, Michael McDonald, Heather J. Ross, and Ana C. Alba. 2020. Reduced rate of hospital presentations for heart failure during the COVID-19 pandemic in Toronto, Canada. *Canadian Journal of Cardiology* 36 (10): 1680–1684. <https://doi.org/10.1016/j.cjca.2020.07.006>.
- Franklin, Sarah, Maureen McNeil, Barbara Katz Rothman, Gena Corea, Rita Arditti, Renate Duelli Klein, and Shelley Minden. 1988. Reproductive futures: Recent literature and current feminist debates on reproductive technologies. *Feminist Studies* 14 (3): 545–560. <https://doi.org/10.2307/3178064>.
- Gammeltoft, Tine M. 2013. Potentiality and human temporality: Haunting futures in vietnamese pregnancy care. *Current Anthropology* 54 (S7): S159–S171. <https://doi.org/10.1086/670389>.
- Gelinas, Luke, Robin Pierce, I. Sabune Winkler, Glenn Cohen, Holly Fernandez Lynch, and Barbara E. Bierer. 2017. Using social media as a research recruitment tool: Ethical issues and recommendations. *The American Journal of Bioethics: AJOB* 17 (3): 3–14. <https://doi.org/10.1080/15265161.2016.1276644>.
- Ginsburg, Faye, and Rayna Rapp. 1991. The politics of reproduction. *Annual Review of Anthropology* 20: 311–343.
- Haraway, Donna. 1985. A Manifesto for Cyborgs: Science, technology and socialist feminism in the 1980s. *Socialist Review* 80: 65–108.
- Haraway, Donna. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies* 14 (3): 575–599. <https://doi.org/10.2307/3178066>.
- Haraway, Donna Jeanne. 1992. *Promises of monsters: A regenerative politics for inappropriate/d others*. New York: Routledge.
- Hays, Sharon. 1996. *The cultural contradictions of motherhood*. London: Yale University Press.
- Henderson, Jennifer, and Keith Denny. 2015. The resilient child, human development and the 'postdemocracy.' *BioSocieties* 10 (3): 352–378. <https://doi.org/10.1057/biosoc.2015.24>.
- Henderson, Angie C., Sandra M. Harmon, and Jeffrey Houser. 2010. A new state of surveillance? Applying Michel Foucault to modern motherhood. *Surveillance & Society* 7 (3/4): 231–247. <https://doi.org/10.24908/ss.v7i3/4.4153>.
- Hondagneu-Sotelo, Pierrette, and Ernestien Avila. 1997. 'I'm here but I'm there': The meanings of latina transnational motherhood. *Gender & Society* 11 (5): 548–571. <https://doi.org/10.1177/089124397011005003>.
- Ignatow, Gabriel. 2007. Theories of embodied knowledge: New directions for cultural and cognitive sociology? *Journal for the Theory of Social Behaviour* 37 (2): 115–135. <https://doi.org/10.1111/j.1468-5914.2007.00328.x>.
- Jasper, Ursula. 2020. The anticipative medicalization of life: Governing future risk and uncertainty in (global) health 1. In *The politics and science of prevision*. London: Routledge.
- Jaquette Ray, Sarah. 2020. *A field guide to climate anxiety how to keep your cool on a warming planet*. University of California Press.



- Katz, Cindi. 2008. Childhood as spectacle: Relays of anxiety and the reconfiguration of the child. *Cultural Geographies* 15 (1): 5–17.
- Klein, Naomi. 2007. *The shock doctrine: The rise of disaster capitalism*. New York: Macmillan.
- König, Anika, and Heather Jacobson. 2021. Reproweb: A conceptual approach to elasticity and change in the global assisted reproduction industry. *BioSocieties*. <https://doi.org/10.1057/s41292-021-00260-6>.
- Korteweg, Anna C. 2003. Welfare reform and the subject of the working mother: "Get a job, a better job, then a career". *Theory and Society* 32(4): 445–480.
- Ladd-Taylor, Molly, and Lauri Umansky. 1998. *"Bad" mothers: The politics of blame in twentieth-century America*. New York: NYU Press.
- Landecker, Hannah and Aaron Panofsky. 2013. From social structure to gene regulation and back: A critical introduction to environmental epigenetics for sociology. *Annual Review of Sociology* 39(1): 333–357.
- Landsman, Gail H. 1998. Reconstructing motherhood in the age of "perfect" babies: Mothers of infants and toddlers with disabilities. *Signs: Journal of Women in Culture and Society* 24(1): 69–99. <https://doi.org/10.1086/495318>
- Lappé, Martine. 2016. The maternal body as environment in autism science. *Social Studies of Science* 46 (5): 675–700. <https://doi.org/10.1177/0306312716659372>.
- Lebel, Catherine, Anna MacKinnon, Mercedes Bagshawe, Lianne Tomfohr-Madsen, and Gerald Giesbrecht. 2020. Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. *Journal of Affective Disorders* 277: 5–13. <https://doi.org/10.1016/j.jad.2020.07.126>.
- Lopez, Iris. 1993. Agency and constraint: Sterilization and reproductive freedom among puerto rican women in New York City. *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 22 (3/4): 299–323.
- Luppi, Francesca, Bruno Arpino, and Alessandro Rosina. 2020. The impact of COVID-19 on fertility plans in Italy, Germany, France, Spain, and the United Kingdom. *Demographic Research* 43: 1399–1412.
- Martine, Lappé and Robbin Jeffries Hein. 2021. You are what your mother endured: Intergenerational epigenetics early caregiving and the temporal embedding of adversity. *Medical Anthropology Quarterly* 35(4): 458–475. <https://doi.org/10.1111/maq.12683>
- Martin, Emily. 2001. *The woman in the body: A cultural analysis of reproduction*. Boston: Beacon Press.
- Mische, Ann. 2009. Projects and possibilities: Researching futures in action. *Sociological Forum* 24 (3): 694–704. <https://doi.org/10.1111/j.1573-7861.2009.01127.x>.
- Morgan, Lynn M., and Elizabeth F. S. Roberts. 2012. Reproductive governance in Latin America. *Anthropology & Medicine* 19 (2): 241–254. <https://doi.org/10.1080/13648470.2012.675046>.
- Murray, Marjorie, and Constanza Tizzoni. 2022. Raising children in hostile worlds in Santiago de Chile: Optimism and 'hyper-agentic' mothers. *The Sociological Review* 70 (1): 92–107. <https://doi.org/10.1177/00380261211056169>.
- Nash, Jennifer C. 2019. Birthing black mothers: Birth work and the making of black maternal political subjects. *WSQ: Women's Studies Quarterly* 47 (3–4): 29–50. <https://doi.org/10.1353/wsq.2019.0054>.
- Nelson, Alondra. Interviewed by Brandon Ogbunu. *Wired*. 15 July, 2020, <https://www.wired.com/story/how-afrofuturism-can-help-the-world-mend/>
- Oparah, Julia Chinyere, and Alicia D. Bonaparte. 2015. *Birthing justice: Black women, pregnancy, and childbirth*. New York: Routledge.
- Pitts-Taylor, Victoria. 2015. A Feminist carnal sociology?: Embodiment in sociology, feminism, and naturalized philosophy. *Qualitative Sociology* 38 (1): 19–25. <https://doi.org/10.1007/s11133-014-9298-4>.
- Ramo, Danielle E., and Judith J. Prochaska. 2012. Broad reach and targeted recruitment using Facebook for an online survey of young adult substance use. *Journal of Medical Internet Research* 14 (1): e28. <https://doi.org/10.2196/jmir.1878>.
- Randles, Jennifer. 2021. 'Willing to do anything for my kids': Inventive mothering, diapers, and the inequalities of carework. *American Sociological Review* 86 (1): 35–59. <https://doi.org/10.1177/0003122420977480>.
- Reisner, Sari L., Asa Radix, and Madeline B. Deutsch. 2016. Integrated and gender-affirming transgender clinical care and research. *Journal of Acquired Immune Deficiency Syndromes (1999)* 72 (Suppl 3): S235–S242. <https://doi.org/10.1097/QAI.0000000000001088>.



- Roberts, Dorothy. 2014. *Killing the black body: Race, reproduction, and the meaning of liberty*. New York: Knopf Doubleday Publishing Group.
- Roeperke, Ann Marie, and Martin E. P. Seligman. 2016. Depression and prospection. *British Journal of Clinical Psychology* 55 (1): 23–48. <https://doi.org/10.1111/bjc.12087>.
- Rose, Jacqueline. 2018. *Mothers: An essay on love and cruelty*. New York: Farrar, Straus and Giroux.
- Sasser, Jade. 2017. Sexual stewardship: Environment, development, and the gendered politics of population. In *Handbook on gender & environment*. Abingdon: Routledge.
- Sasser, Jade. 2018. Public health in the anthropocene: Exploring population fears and climate threats. In *Global health & security: Critical feminist perspectives*. Abingdon: Routledge.
- Scheier, Michael F., and Charles S. Carver. 1985. Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology* 4 (3): 219–247. <https://doi.org/10.1037/0278-6133.4.3.219>.
- Sheldon, Rebekah. 2016. *The child to come: Life after the human catastrophe*. Minneapolis: University of Minnesota Press.
- Small, Mario Luis. 2009. ‘How many cases do I need?’: On science and the logic of case selection in field-based research. *Ethnography* 10 (1): 5–38. <https://doi.org/10.1177/1466138108099586>.
- Smith, Dorothy E. 1991. Writing women’s experience into social science. *Feminism & Psychology* 1 (1): 155–169. <https://doi.org/10.1177/0959353591011019>.
- Smith, Sara, and Pavithra Vasudevan. 2017. Race, biopolitics, and the future: Introduction to the special section. *Environment and Planning d: Society and Space* 35 (2): 210–221. <https://doi.org/10.1177/0263775817699494>.
- Strauss, Anselm, and Juliet M. Corbin. 1997. *Grounded theory in practice*. Thousand Oaks: SAGE.
- Susser, Leah C., Victoria M. Wilkins, and Lauren H. Sternberg. 2021. Perinatal planning guide: Mitigating perinatal mood and anxiety disorders during the COVID-19 pandemic. *The Primary Care Companion for CNS Disorders* 23 (5): 21nr02953. <https://doi.org/10.4088/PCC.21nr02953>.
- Sziarto, Kristin M. 2017. Whose reproductive futures? Race-biopolitics and resistance in the black infant mortality reduction campaigns in milwaukee. *Environment and Planning d: Society and Space* 35 (2): 299–318. <https://doi.org/10.1177/0263775816655803>.
- Timmermans, Stefan, and Iddo Tavory. 2012. Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory*. <https://doi.org/10.1177/0735275112457914>.
- Vedam, Saraswathi, Kathrin Stoll, Tanya Khemet Taiwo, Nicholas Rubashkin, Melissa Cheyney, Nan Strauss, Monica McLemore, Micaela Cadena, Elizabeth Nethery, Eleanor Rushton, Laura Schummers, Eugene Declercq, the GVTm-US Steering Council. 2019. The giving voice to mothers study: Inequity and mistreatment during pregnancy and childbirth in the United States. *Reproductive Health* 16 (1): 77. <https://doi.org/10.1186/s12978-019-0729-2>.
- Waggoner, Miranda R. 2013. Motherhood preconceived: The emergence of the preconception health and health care initiative. *Journal of Health Politics, Policy and Law* 38 (2): 345–371. <https://doi.org/10.1215/03616878-1966333>.
- Wrosch, Carsten, and Michael F. Scheier. 2003. Personality and quality of life: The importance of optimism and goal adjustment. *Quality of Life Research* 12 (1): 59–72. <https://doi.org/10.1023/A:1023529606137>.
- Yianna Liatros. 2021. Mothers: An essay on love and cruelty—book review. *Th Polyphony: Conversations Across the Medical Humanities*. <https://thepolyphony.org/2021/03/25/mothers-an-essay-on-love-and-cruelty-book-review/>. Accessed June 1, 2022.
- Herbst-Debby, Anat. 2018. Doing good motherhood: Creating their own responsible single mother model. *Women’s Studies International Forum* 69 : 151–158.
- Collins, Patricia Hill. 1994. Shifting the center: race, class and feminist theorizing about motherhood. *Mothering ideology, experience and agency*. Routledge. 45–65.
- Murray, Marjorie and Constanza Tizzoni. 2021. Raising children in hostile worlds in Santiago de Chile: Optimism and ‘hyper-agentic’ mothers. *The Sociological Review*. 70 (1).
- Collins, Patricia Hill. 1998. It’s all in the family: Intersections of gender, race and nation. *Hypatia* 13 (3): 62–82.
- Collins, Patricia Hill. 1998. It’s all in the family: Intersections of gender, race and nation. *Hypatia* 13 (3): 62–82.
- Collins, Patricia Hill. 1990. *Black feminist thought: knowledge, consciousness and the politics of empowerment*. Boston: Unwin Hyman.
- Gammeloft, Tine M. (2013). Potentiality and Human Temporality: Haunting Futures in Vietnamese Pregnancy Care. *Current Anthropology* 54 (7): 159–171.



Zadoroznyj, Maria. 1999. Social class, social selves and social control in childbirth. *Sociology of Health & Illness* 21 (3): 267–289. <https://doi.org/10.1111/1467-9566.00156>.

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