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Seeing Children's Futures Through Rose Colored Glasses: Does Optimism Bias toward Reproduction Discourage Anti-Natalism?

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SEEING CHILDREN'S FUTURES THROUGH ROSE COLORED GLASSES: DOES OPTIMISM BIAS TOWARD REPRODUCTION DISCOURAGE ANTI-NATALISM

by

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ABSTRACT

In order to examine the possibility that individuals continue having children and holding positive views toward reproduction regardless of how much their future children might suffer because of an optimism bias, I conducted two experimental studies examining the effect of optimism manipulation on people's opinions of *anti-natalism*, the position that it is morally wrong for individuals to reproduce. In Study 1, participants received an optimism (v. pessimism or control) manipulation about either themselves or a future child before being asked to read an essay about anti-natalism and a control essay having to do with parents being involved in school activities. Participants then rated their feelings about the authors and completed an anti-natalism scale. I predicted that individuals primed for optimism about their future children would be lower in support for anti-natalism than people primed with a negative emotion (pessimism), optimism about their self, and those in the control conditions. As for Study 2, participants received an optimism (v. pessimism or control) × self (v. economy) manipulation. I predicted that individuals primed for optimism about the economy would be lower in support for anti-natalism than people primed with a negative emotion (pessimism), optimism about their self, and those in the control conditions. Overall, I found that optimism (v. pessimism) did not reduce (or increase) support for anti-natalism in comparison to the other groups. Instead, it is suggested that anti-natalism is a relatively unpopular belief that is not easily manipulated.

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Having children is an integral part of the lives of most members of society. Though the birth rate has fallen around the world over the last few decades, most people eventually have children (The World Bank, 2017; Livingston, 2015). In the United States, for example, although the amount of people choosing to remain childless-by-choice or childfree has increased dramatically in the past few decades (15% of women remained childless in 2014), most Americans continue to have children and women in their 40s are actually more likely to have children than in the decades before (Livingston, 2015). What drives individuals' reproductive decision-making and perceptions of the reproductive decisions of others?

Certain societal and religious groups commonly endorse pro-natalism, the belief that people should have children. For example, some believe that people have an obligation to have children to keep society progressing or to make sure there are enough people to care for the elderly (Demeny, 1986; Gheaus, 2015).

Several religious denominations also support pro-natalism. For example, in relation to Christianity, Catholicism is known to support pro-natalism and pro-natalist policies. In 1968, Pope Paul VI proposed a blanket ban on artificial contraception due to the view that methods like the contraceptive pill could encourage "a general lowering of moral standards" (Ignaciuk & Kelly, 2020). The Catholic Church often teaches that it is morally wrong to take steps to actively prevent having children while sexually active, even if the individual or couple is choosing to refrain from having children because they do not want or cannot afford to support a child (Burke & Cohen, 2016). Though most

Catholics report using contraceptive methods to prevent unintended pregnancies (Jones & Dreweke, 2011), the Catholic Church remains against contraception, emergency contraception, sterilization, and abortion (Levada, 2008). What is more, the Catholic Church sometimes works to prevent individuals who desire foregoing parenthood or limiting their family size from doing so by preventing doctors in Catholic run hospitals from offering contraception and performing sterilization (Stulberg, Hoffman, Dahlquist, & Freedman, 2014).

More so, as birthrates have continued to fall throughout much of the world, some countries have attempted to implement pro-natalist policies to encourage people to have more children. Countries have attempted to raise their birth rates though a variety of methods like guaranteeing paid parental leave, providing tax credits to people who have children or a certain number of children, and encouraging the formation of romantic partnerships (United Nations, 2017).

1.1 Anti-Natalism

Though many countries are currently working to find ways to increase their plummeting birth rate, some groups hold views against reproduction. *Anti-natalism* is the philosophical position that it is morally wrong for individuals to have children. Anti-natalist thought posits that people should refrain from reproducing to prevent the future suffering of potential children or to prevent potential children from harming others (Benatar, 1997; 2006).

There are two main reasons for anti-natalist beliefs, *misanthropic* and *altruistic* (sometimes referred to as *philanthropic*) anti-natalism. Altruistic anti-natalism is the belief that people should not have children in order to prevent those children from

suffering. In support of altruistic anti-natalism, Benatar (1997; 2006) argues that individuals necessarily experience more pain and suffering in life than they do pleasure and happiness. Additionally, life is bad for many and is often filled with negative events like disease, starvation, and poverty (Benatar, 2006; 2017). Life, in his view, contains more suffering regardless of where someone lives or what social class they reside in. For example, much of life is filled with monotony. To be somewhat comfortable in life people must perform many tasks that they would otherwise choose to not do, like go to school, get a job, commute in traffic, perform household maintenance, cook, and clean. Benatar (2006) argues that the only way to prevent individuals from suffering and experiencing all of the monotony of life is by not bringing others into existence.

In contrast, misanthropic anti-natalism is the belief that people should not have children to prevent those children from harming others (Benatar, 2015). Individuals can harm others both actively and inadvertently. There are many ways that people can purposefully harm others, for example by engaging in assault, war, and murder. Individuals can also inadvertently cause harm to others by polluting the environment, overconsuming natural resources, adding to overpopulation, and spreading disease, among many other ways (Benatar, 2015). Many misanthropic reasons for supporting anti-natalism are contingent upon external factors, such as overpopulation and climate change. If the ongoing threats of climate change and overcrowding are ever resolved, then individuals supporting anti-natalism for these reasons will no longer have a reason to hold these beliefs (Benatar 2015; 2019).

1.2 Optimism and Anti-Natalism

If life is full of suffering, why do people continue having children? Benatar (2006) argues that individuals continue having children, irrespective of the suffering in life, because they have an innate bias toward optimism. According to Benatar (2006), individuals commonly view their lives as being better than they actually are and they believe that their children's lives will also be good, as such they see being born as a good thing. Benatar (2006) argues that without this optimism bias, people would be less likely to continue having children.

Previous research supports the thought that individuals who are more optimistic are less likely to support anti-natalism. I have previously found that believing your current or future children will be smarter, happier, or more successful than other peoples' children partially explained why individuals are resistant to anti-natalism (Brown & Keefer, 2022a). Additionally, individuals who thought their children were likely to be better than other children were less likely to support altruistic and misanthropic anti-natalism, and anti-natalism in general (Brown & Keefer, 2022a).

1.3 Optimism and Optimism Bias

So, what is optimism exactly? Optimism is the belief that good events are likely to occur, while bad events are unlikely to happen (Scheier & Carver, 1985; Weinstein, 1980). There are two types of optimism, *state* and *dispositional* or *trait* (Peters et al., 2010; Weinstein, 1980). In relation to dispositional optimism, previous research has found that individuals are generally more or less optimistic. Optimistic individuals usually view the future positively, while pessimistic individuals usually view the future negatively (Weinstein, 1980).

Though some individuals can be generally optimistic, optimism is an alterable characteristic. Individuals can be temporarily primed to view the future more positively or negatively (Kress, Bristle, & Aue, 2018; Peters et al., 2010; Peters, Meevissen, & Hanssen, 2013; Kluemper, Little, & DeGroot, 2009; Fosnaugh, Geers, & Wellman, 2009). Additionally, dispositional optimism and state optimism can interact. Bosch-Meevissen, Peters, & Alberts (2014) found that when primed for state optimism, individuals higher in dispositional optimism were less likely to show ego depletion. Optimism has also been found to be associated with better mood, health, and job performance (Kluemper, Little, & DeGroot, 2009; Segerstrom, et al., 1998; Scheier & Carver, 1985). Lastly, optimism has been found to increase as a person ages until around age 55, after which it decreases. This is thought to occur because individuals typically complete most of their life goals like attaining a degree, getting a stable job, buying a home, and having children by this age and thus have less to look forward to later in life (Schwaba et al., 2019).

Though individuals have a tendency to be optimistic, not all optimism is justified. Individuals can have an optimism bias, which means that they are overly optimistic and often focus on likely positive future events while ignoring likely negative future events (Chua & Job, 1999; Sharot et al., 2007; Sharot, 2011; Weinstein, 1980). For example, individuals often predict that a task will not take as long as it will actually take (Buehler, Griffin, & MacDonald, 1997) and individuals often overestimate their driving ability and underestimate their likelihood of being involved in a car accident (DeJoy, 1989).

Individuals cannot only be biased about the positivity of their own future, but also the future of their children. Previous research has found that individuals are

unrealistically optimistic about their children's futures and believe that they will have better temperament and health compared to other children (Lench, Quas, & Edelstein, 2006). Along with my previous findings that individuals who view their future children as likely being smarter, happier, and more successful than others are less likely to support anti-natalism, this leads one to wonder if optimism specifically about one's future children might lead to one being more resistant to anti-natalism.

CHAPTER II – THE CURRENT STUDIES

The purpose of the current studies is to examine the importance of optimism about the likely future of children and the society future children will grow up in on individuals' reluctance to support anti-natalism. Individuals have previously been found to remain resistant to anti-natalism and view anti-natalists negatively, even when reminded of a societal threat like overcrowding or disease (Brown & Keefer, 2022b). And as stated previously, viewing one's future children more positively has been found to partially mediate the relationship between optimism and reduced support for anti-natalism and individuals who rated their future children as being likely to be better off than other children were lower in support for anti-natalism (Brown & Keefer, 2022a).

Additionally, research has yet to examine the effect of optimism v. pessimism manipulation on anti-natalism endorsement. It remains to be seen if manipulation of individuals' optimism toward their future children (v. their self) would further reduce or increase support for anti-natalism. Previous research (Brown & Keefer, 2022a) experimentally manipulated optimism about oneself, though not optimism about one's future children. Though there is currently a gap in literature comparing priming of optimism about oneself to optimism about one's future children, it can be assumed that optimism about one's future children might be a stronger influence on individuals' perceptions of children and reproductive decision-making than optimism about themselves. This is because individuals will be specifically asked to think about their children or future children and the lives they are likely to live, while when primed for being optimism about one's future, they are not specifically reminded of and asked to think about children, so they might instead be thinking of a time in the future before they

have children, an activity that they might do in the future without their children, or a time when their children are out of the home.

This is also an important comparison because in order to justify having children so that they can have a good life, one must be optimistic about their future children's lives, though they might not necessarily be optimistic about their own lives. For example, individuals often say that they are having children so that their children can have a better life than they have had. While in relation to pessimism, individuals who are pessimistic about their own lives might still believe that their children will live good and fulfilling lives, though individuals pessimistic about the lives of their future children should be less resistant to anti-natalism.

Also, optimism v. pessimism about the world future children are likely to grow up in and inherit has not been examined in relation to anti-natalism. Could the relationship between optimism v. pessimism be contingent on a certain area of importance to society (e.g. the economy)? While optimism manipulation more generally was found to show more resistance toward anti-natalism, it is yet to be seen if the manipulation of more specific types of optimism (e.g. optimism about children or the economy) would have the same effect. A thriving economy is something that is widely agreed upon to encourage societal growth and indicate a reason to be optimistic about the future. When the economy is strong, individuals might be more likely to be able to put money into more than the necessities, like a college or graduate level education, family vacations, a new home or car, a nice wedding, or a new baby. While when there are great financial difficulties, individuals are often just trying to get by and might not be in the process of planning for an optimistic future for themselves and their children. Additionally, when

the economy is good, individuals have more resources that they can use to give their children a good life. This can be seen in birth rates during prosperous economic times in comparison to difficult economic times. For example, around 2007 and 2008 there was a steep decline in the number of children being born, most likely due to individuals not being able to afford to have a new child and being pessimistic about the economic uncertainty a child would be born into (Livingston & Cohn, 2010).

Additionally, priming optimism about the economy is an ideal way to examine optimism in specific domains. Other ways could include the environment or public health, though a person's political affiliation might be more likely to confound the findings in a way that the economy is unlikely to. Many hold a negative view about being concerned with the environment (e.g., climate change and pollution) and public health (e.g., the COVID-19 pandemic and vaccinations), but while individuals often hold different views on how to best make the economy function and prosper, it is widely agreed that a strong economy is a positive for society.

To examine these possibilities, I conducted two studies manipulating specific types of optimism and pessimism. Study 1 compares optimism and pessimism toward individuals' future children to optimism and pessimism toward oneself. And Study 2 compares optimism and pessimism toward oneself to a specific area of interest to society, the economy.

In relation to both studies, I predicted that the optimism manipulation would show reduced support for anti-natalism in comparison to both the control and pessimism inductions. Specifically, I predicted that when collapsing across self v. other (child or economy) individuals primed for optimism would be most resistant to anti-natalism and

individuals primed for pessimism would be least resistant to anti-natalism, with individuals in the control condition scoring in between these two groups. This finding would replicate previous research (Brown & Keefer, 2022a) and further validate philosophical theories about the basis of anti-natalism.

More specifically, I predicted that optimism priming related to a specific focus (future children or the economy) would show the least support for anti-natalism while pessimism priming related to a specific focus would show the most support for anti-natalism. I predicted this because individuals primed for pessimism about their own children would be forced to think about negative things happening to their children and as mentioned previously, pessimism about the economy has been shown to lead to less children being born during trying economic times, thus pessimism about the economy is expected to influence people to be less resistant to anti-natalism. In contrast, individuals who are optimistic about the economy will likely believe that their children should have a bright economic future, be able to afford the education that they desire, and to be able to succeed in a well-paying career, thus making their life easier than it would be if they expected them to struggle financially.

Additionally, I included socioeconomic status (SES), trait optimism, depression, trait self-esteem, and positive and negative affect as potential covariates. Individuals high in SES likely have to worry less about their potential future children weathering an economic crisis. Individuals high in SES also likely have to worry less about their children's future in general as they can more easily afford things like housing, food, and tuition, and they are more likely to be able to leave their children an inheritance. Individuals high in SES have also been found to be more optimistic than individuals

lower in SES (Boehm et al., 2015). Additionally, depressed individuals have been found to be more pessimistic than non-depressed individuals, while individuals higher in optimism have been found to be higher in self-esteem (Alloy & Ahrens, 1987; Duy & Yildiz, 2019; MacLeod et al., 1999; Pyszczynski, Holt, & Greenberg, 1987; Scheier, Carver, Bridges, 1994). Additionally, anti-natalists have been found to be higher in depression (Schonegger, 2022). Lastly, individuals high in pessimism have been found to be high in negative affect, while individuals high in optimism have been found to be high in positive affect (Marshall et al., 1992; Robinson-Whelen, 1997).

CHAPTER III - STUDY 1

Study 1 examines the effect of induced optimism about ones' future children (in comparison to oneself) on anti-natalism. As an alternative to optimism, Study 1 also examined the effect of induced pessimism about ones' future children (in comparison to oneself) on anti-natalism. Though related, optimism and pessimism are often considered to be separate outcome expectancies (Sanna, 2010; Chang, Maydeu-Olivares, & D'Zurilla, 1997; Robinson-Whelen, MacCallum, & Kiecolt-Glaser, 1997; Marshall et al., 1992). For example, the Life Orientation Test (LOT) consists of separate optimism and pessimism factors in groups such as middle-aged and senior adults (Robinson-Whelen, MacCallum, & Kiecolt-Glaser, 1997). There are also differences in personality and mood associated with optimism and pessimism. Optimism has been associated with positive affect and extraversion, while pessimism has been associated with negative affect and neuroticism (Marshall et al., 1992).

Overall, I expected that individuals would be less supportive of anti-natalism in the optimism conditions and more supportive in the pessimism conditions, with the control conditions scoring in the middle. However, I further expected that these main effects would be moderated by the target of the prime. Specifically, I expected that individuals primed for optimism about future children would be lower in support for anti-natalism than individuals in the optimism about oneself condition. I predicted that individuals primed for pessimism about future children would be higher in support for anti-natalism than individuals in the pessimism about oneself condition. While optimism or pessimism about oneself might be more personal, anti-natalism is a belief against future children coming into existence, often to prevent those children from suffering. As

such, pessimism or optimism about those potential future children should be more salient as a justification for (or against) anti-natalism.

Another goal of the study was to treat socioeconomic status, affect, self-esteem, and depression as covariates to examine whether the predicted effects of the manipulation remained significant after controlling for these factors. I planned to include these covariates to determine whether any observed effects of the manipulation were due specifically to the content of that prime.

3.1 Method

3.1.1 Participants

I recruited 300 participants through Amazon Mechanical Turk. Participants were paid $1 for between 10 and 15 minutes of their time, participants were boosted by $1 if they went over 15-minutes. A power analysis in G*power (Faul, Erdfelder, Buchner, & Lang, 2009) based on a proposed 3 × 2 × 2 mixed-model ANOVA with a two-tailed test, $\alpha = .05$, and a target power of .80 suggested that a sample of 162 would be sufficient to detect a predicted medium effect size ($f = .25$). I oversampled due to the number of covariates, the likelihood of participants not finishing the study, my intention to remove anyone who did not want to have children, and the likelihood of attention check failures. 15 participants were removed from analyses for failing one or more attention checks, which consisted of two questions located approximately in the middle of the study asking them to click a certain option. Additionally, participants were screened through Cloud Research for being reliable participants and low in previous attention check failures before being allowed to participate. Lastly, 94 participants were removed from analyses

for not having or wanting children, thus data from 191 participants who completed the study were analyzed.

3.1.2 Materials

3.1.2.1 Demographics

Participants received a demographics questionnaire asking them their gender, age, and ethnic background, and if they wanted to have children in the future. I did not expect to find a difference in gender, age, or ethnic background, but it is standard practice to report these data. The gender of my participants was relatively diverse (109 cisgender women, 71 cisgender men, 2 transgender women, 2 transgender men, and 6 gender non-binary or other. My participants were also diverse in age, ranging from 23 to 77 (M = 41.70). My sample was predominantly white or Caucasian (132, 25 black or African American, 16 Asian or Pacific Islander, and 28 all other ethnicities). And the majority of my participants already had children (110, 56 wanted them but did not yet have them, and 25 had yet to decide if they wanted children or not).

3.1.2.2 Self-Esteem Measure

Trait self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), a 10-item scale used to measure self-esteem. The Rosenberg Self-Esteem is on a 4-point Likert scale (1 = *Strongly Disagree*; 4 = *Strongly Agree*) that is commonly used to measure self-esteem (a = 0.92, M = 3.10, SD = 0.67). Questions include, “On the whole, I am satisfied with myself” and “I feel that I'm a person of worth”. Scores were averaged after appropriate reverse scoring.

3.1.2.3 Positive and Negative Affect

The PANAS (Watson et al., 1988) was used to measure participants' affect on a 7-point Likert scale (1 = *Strongly Disagree*; 7 = *Strongly Agree*). The PANAS measures trait positive (10-items including "attentive" and "enthusiastic"; a = 0. 91, M = 4.80, SD = 1.20) and negative affect (10-items including "afraid" and "nervous"; a = 0. 94, M = 2.00, SD = 1.20). Scores were averaged.

3.1.2.4 Dispositional Optimism

Trait optimism was assessed using the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994), a 10-item scale used to measure optimism. The LOT-R is on a 5-point Likert scale (1 = *Strongly Disagree*; 5 = *Strongly Agree*) that is commonly used to measure optimism (a = 0.94, M = 4.70, SD = 1.10). Questions include, "In uncertain times, I usually expect the best." and "Overall, I expect more good things to happen to me than bad.". Scores were averaged to create a composite.

3.1.2.5 Socioeconomic Status

SES was assessed using six-items previously used to measure socioeconomic status (Griskevicius et al., 2011). SES was measured on a 7-point Likert scale (1 = *Strongly Disagree*; 7 = *Strongly Agree*). Items included "I have enough money to buy things I want" and "My family usually had enough money for things when I was growing up" (a = 0.83, M = 3.70, SD = 1.40).

3.1.2.6 Depression Measure

To measure depression, I used the Center for Epistemologic Studies Depression Scale (the CES-D Scale; Radloff, 1977). The scale asks about individuals' mood over the last week and is on a 4-point Likert scale. Questions include, "I felt sad" and "I felt

depressed". CES-D scores are estimated as a sum of the items (scored 0-3), with higher scores reflecting greater depressive symptomology (a = 0.95, M = 1.70, SD = 0.68).

3.1.2.7 Priming Material

Participants in the optimism (n = 71), pessimism (n = 59), and neutral (n = 61) conditions read a brief news article and then completed a modified version of Best Possible Self writing prompt (King, 2001). The prime also discussed the participant's future (n = 98) or their children's future (n = 93). In the optimism + self condition (n = 37) participants read a news article listing five reasons they should be optimistic about the new year (Kenny, 2021) and then read a prompt saying, "Think about your life in the future. Imagine that everything has gone as well as it possibly could. You have worked hard and succeeded at accomplishing all of your life goals. Think of this as the realization of all of your life dreams. Now, write about what you imagined". While participants in the optimism + child condition (n = 30) read a news article about how innovations can be made to promote a better future for children (Fore, 2022) and then a prompt saying, "Think about your children's life in the future. Imagine that everything has gone as well as it possibly could. Your children have worked hard and succeeded at accomplishing all of their life goals. Think of this as the realization of all of their life dreams. Now, write about what you imagined".

Participants in the pessimism + self condition (n = 29) read a brief news article examining why there is so much public pessimism (Ezrati, 2021) and then they read a prompt saying, "Think about your life in the future. Imagine that everything has gone as bad as it possibly could. You have worked hard and but have not succeeded at accomplishing all of your life goals. Think of this as all of your dreams not being

realized. Now, write about what you imagined". While participants in the pessimism + child condition (n = 30) read a brief news article about how the COVID-19 pandemic has negatively affected children's education (Banerjee, 2022) and then they read a prompt saying "Think about your child's life in the future. Imagine that everything has gone as bad as it possibly could. Your children have worked hard and but have not succeeded at accomplishing all of their life goals. Think of this as all of their dreams not being realized. Now, write about what you imagined".

Participants in the neutral + self group (n = 32) read a brief news article about how the Super Bowl would be staying in Inglewood instead of moving elsewhere (Beacham, 2022) and then they read a prompt saying, "Think about your life in the future. Imagine that everything has stayed the same. Your life has not been overly bad or good. And you have been spending your time going through the motions. Now, write about what you imagined". While participants in the neutral + child condition (n = 29) read a news article about the top children's books of 2021 (Gambino, 2021) and then a prompt saying "Think about your children's life in the future. Imagine that everything has stayed the same. Their life has not been overly bad or good. And they have been spending their time going through the motions. Now, write about what you imagined". After being assigned to their condition, participants were asked to spend a few minutes carefully thinking about the writing topic and then writing about what they imagined.

3.1.2.8 Child Optimism Bias Manipulation Check

Participants were then asked about their optimism and pessimism about their children or future children using an adapted version of (Lench, Quas, & Edelstein, 2006). In comparison to other children, participants rated how likely their children are to

experience a series of 12 positive and 12 negative events. For example, positive events included “remaining healthy” and “completing college”, while negative events included “getting a divorce” and “becoming depressed”. Individuals rated the likelihood of an event happening to their future child in comparison to other children and responded on a 7-point Likert scale (1 = far below average; 7 = far above average; a = 0.94, M = 4.70, SD = 1.10).

3.1.2.9 Optimism Manipulation Check

Next, participants received an adapted version of the questionnaire for Future Expectations (FEX; MacLeod, 1996). This questionnaire has previously been used as a manipulation check for future expectancies (Hanssen et al., 2013). The FEX measures positive and negative expectancies. 10-items involve negative expectancies (e.g., “you will have health problems” and “people will find you dull and boring”) and 10-items involve positive expectancies (“e.g., “you will get a lot of satisfaction out of life” and “you will make good and lasting friendships”). Participants responded to each statement on a 7-point Likert-scale (1 = not at all likely to occur; 7 = extremely likely to occur; a = 0.93, M = 4.80, SD = 0.95).

3.1.2.10 Essay Responses

To subtly measure participants’ views on anti-natalism participants rated their responses to two essays after the manipulation. The anti-natalism essay was a shortened version of (Benatar, 1997), which argues that it is wrong to have children (a = 0.93, M = 2.70, SD = 1.50). And the parent essay was a shortened version of (Spera, 2005) which argues in support of parents being involved in education (a = 0.93, M = 5.70, SD = 1.00). I have previously used both essays to indirectly assess individuals’ views on anti-natalism

(Brown, Keefer, & Spadgenske, 2022). These essays were given to participants in randomized order. For both essays, participants were asked how friendly, responsible, ethical, kind, and fulfilled in life they feel the author of the essay was. Participants responded to these questions on a 7-point Likert-scale (1 = strongly disagree; 7 strongly agree). Participants also assigned a grade to the anti-natalism (*M* = 72.40) and parenting (*M* = 91.09) essays from 50 to 100.

3.1.2.11 Anti-Natalism Scale

I also measured individuals' explicit support for anti-natalism using a scale I created for this purpose (Brown, Keefer, & Spadgenske, 2022). The scale consists of 6-items measuring general anti-natalism (e.g., "it is morally wrong to have children"; *a* = 0.90, *M* = 1.80, *SD* = 1.20), 6-items measuring altruistic anti-natalism (e.g., "people should not have children because those children will eventually suffer"; *a* = 0.80, *M* = 2.20, *SD* = 1.20), and 6-items measuring misanthropic anti-natalism (e.g., "people should not have children in order to prevent overpopulation" "; *a* = 0.85, *M* = 2.20, *SD* = 1.20). Participants will rate these questions on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree).

3.1.3 Procedure

Participants were recruited for the study online through Amazon Mechanical Turk. They were given an informed consent statement and asked to continue on to the next page if they chose to participate in the study. Participants first received the demographics questionnaire, then the Rosenberg Self-Esteem Scale, the socioeconomic questions, the CES-D Scale, the LOT-R, and the PANAS in randomized order to prevent order effects. After measuring personality differences, participants were then randomly

assigned to one of the six priming conditions in my 3 (optimism vs. pessimism vs. control) × 2 (self vs. child) design. Next, they completed the two manipulation checks in randomized order to confirm that the manipulations worked as intended. Then they were given two essays in randomized order and asked to provide feedback on the essays and authors. From there they completed the anti-natalism scale. Lastly, they were presented with an onscreen debriefing.

3.2 Results

3.2.1 Manipulation Checks

To check if my manipulations were successful, I first ran a 3 (optimism v. neutral v. pessimism) × 2 (self v. child) ANOVA looking at state optimism. The resulting model indicated that there was not a significant interaction between thoughts about the future and thinking about yourself v. children on state optimism, $F(2, 185) = 1.45$, $p = .24$. There was also not an effect of thoughts about the future on state optimism, $F(2, 185) = .27$, $p = .77$. There was an effect of thinking about yourself v. children on state optimism ratings, $F(1, 185) = 5.44$, $p = .02$, $\eta_p^2 = .03$. Individuals in the child condition ($M = 4.90$) were significantly higher in state optimism than individuals in the self condition ($M = 4.56$).

As part of my optimism manipulation primed individuals for optimism towards ones' children, I then ran a 3 (optimism v. neutral v. pessimism) × 2 (self v. child) ANOVA looking at optimism toward children. The resulting model did not indicate am interaction between thoughts about the future and thinking about yourself v. children on optimism toward children, $F(2, 185) = 1.72$, $p = .18$. There was an effect of thoughts about the future on child optimism, $F(2, 185) = 7.26$, $p < .001$, $\eta_p^2 = 07$. Pairwise

comparisons indicated that individuals in the pessimism condition (M = 4.43) were significantly lower in optimism toward children than individuals in the neutral condition (M = 5.04, p < .001). Additionally, individuals in the optimism condition (M = 4.79) were significantly higher in optimism about future children than participants in the pessimism condition (p = .03), though it is important to note that there was not a significant difference in child optimism between the optimism and neutral conditions (p = .13). There was also an effect of thinking about yourself v. children on child optimism ratings, $F(1, 185) = 8.35$, $p = .004$, $\eta_p^2 = .04$. Individuals in the child condition (M = 4.94) were higher in optimism toward children than individuals in the self condition (M = 4.58).

3.2.2 Essay Ratings/Grades

I then submitted essay ratings to a 3 (between-subjects: optimism v. neutral v. pessimism) × 2 (between-subjects: self v. child) × 2 (repeated measure: anti-natalism vs. control) mixed-model ANOVA. There was not a significant interaction between thoughts about the future and thinking about yourself v. children on essay ratings, $F(2, 185) = 0.13$, $p = .88$. There was also not a significant interaction between thoughts about the future and essay ratings, $F(2, 185) = .40$, $p = .67$. There was not a significant interaction between thinking about yourself v. children and essay ratings, $F(1, 185) = .52$, $p = .47$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. children, $F(2, 185) = .86$, $p = .42$. The resulting model indicated only a main effect of essay ratings, $F(1, 185) = 507.75$, $p < .001$, $\eta_p^2 = .73$, participants liked the anti-natalist author (M = 2.66) significantly less than the author of the parenting article (M = 5.73), regardless of condition. There was not a significant main

effect of thoughts about the future, $F(2, 185) = .17$, $p = .84$. There was also no significant main effect of thinking about yourself v. children, $F(1, 185) = .17$, $p = .68$.

To determine whether my predicted covariates changed these results, I submitted essay ratings to a 3 × 2 × 2 mixed model ANCOVA controlling for self-esteem, positive affect, negative affect, trait optimism, SES, and depression. There was not a significant interaction between thoughts about the future and thinking about yourself v. children on essay ratings, $F(2, 179) = .06$, $p = .94$. There was also not a significant interaction between thoughts about the future and essay ratings, $F(2, 179) = .84$, $p = .43$. There was not a significant interaction between thinking about yourself v. children and essay ratings, $F(1, 179) = .24$, $p = .63$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. children, $F(2, 179) = .65$, $p = .52$. The resulting model again indicated only a main effect of essay ratings, $F(1, 179) = 5.20$, $p = .02$, $\eta_p^2 = .03$. . There was not a significant main effect of thoughts about the future, $F(2, 179) = .55$, $p = .58$. There was also no significant main effect of thinking about yourself v. children, $F(1, 179) = .23$, $p = .63$.

From there I submitted essay grades to the same 3 (between-subjects: optimism v. neutral v. pessimism) × 2 (between-subjects: self v. child) × 2 (repeated measure: anti-natalism vs. control) mixed-model ANOVA. There was not a significant interaction between thoughts about the future and thinking about yourself v. children on essay grades, $F(2, 185) = 1.85$, $p = .16$. There was also not a significant interaction between thoughts about the future and essay grades, $F(2, 185) = 1.16$, $p = .32$. There was not a significant interaction between thinking about yourself v. children and essay grades, $F(1, 185) = .05$, $p = .83$. Additionally, there was not a significant interaction between thoughts

about the future and thinking about yourself v. children, $F(2, 185) = 1.17$, $p = .31$. The resulting model indicated only a main effect of essay grades, $F(1, 185) = 241.25$, $p < .001$, $\eta_p^2 = .57$, participants graded the anti-natalist essay ($M = 72.38$) significantly lower than the parenting article ($M = 91.09$), regardless of condition. There was not a significant main effect of thoughts about the future, $F(2, 185) = .39$, $p = .68$. There was also no significant main effect of thinking about yourself v. children, $F(1, 185) = .02$, $p = .88$.

To determine whether my predicted covariates changed these results, I submitted essay grades to a 3 × 2 × 2 mixed model ANCOVA controlling for self-esteem, positive affect, negative affect, trait optimism, SES, and depression. There was not a significant interaction between thoughts about the future and thinking about yourself v. children on essay grades, $F(2, 179) = 2.45$, $p = .09$. There was also not a significant interaction between thoughts about the future and essay grades, $F(2, 179) = 2.17$, $p = .12$. There was not a significant interaction between thinking about yourself v. children and essay grades, $F(1, 179) = .66$, $p = .42$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. children, $F(2, 179) = 1.18$, $p = .31$. Controlling for these variables showed that there was no longer a main effect of essay grading, $F(1, 179) = .73$, $p = .40$. There was not a significant main effect of thoughts about the future, $F(2, 179) = 1.01$, $p = .37$. There was also no significant main effect of thinking about yourself v. children, $F(1, 179) = .22$, $p = .64$.

3.2.3 Anti-Natalism Scale

The three anti-natalism scale components were all positively correlated with each other, the anti-natalism scale ratings, and the anti-natalism scale grading (complete

correlations can be found in Table 2). This suggests that specific beliefs about anti-natalism are linked to the likability of the author of the anti-natalism article and participants' views about the anti-natalism article.

Additionally, the anti-natalism scale components, article rating, and article grading were generally negatively correlated with trait optimism, the optimism manipulation check, and optimism about one's children. This suggests that while the manipulations generally did not appear to be successful, individuals higher in optimism about their lives and the lives of their children are less likely to support anti-natalism. Though it is important to note that ratings of the control essay were negatively correlated with all three anti-natalism scale components, suggesting that thinking about parenting, even when reproduction is not mentioned, might influence individuals to be more resistant to anti-natalism.

I then ran 3 (optimism v. neutral v. pessimism) × 2 (self v. child) ANOVA looking at unspecified anti-natalism ratings. The resulting model did not indicate an interaction between thoughts about the future and thinking about yourself v. children on unspecified anti-natalism, $F(2, 185) = .92$, $p = .40$. There was not an effect of thoughts about the future on unspecified anti-natalism, $F(2, 185) = .41$, $p = .66$. Lastly, there was no effect of thinking about yourself v. children on unspecified anti-natalism ratings, $F(1, 185) = 1.26$, $p = .26$.

Using the same model as above, I examined altruistic anti-natalism. The resulting model did not indicate an interaction between thoughts about the future and thinking about yourself v. children on altruistic anti-natalism, $F(2, 185) = 1.30$, $p = .28$. There was not an effect of thoughts about the future on altruistic anti-natalism, $F(2, 185) = .22$, $p =$

.81. There was also no effect of thinking about yourself v. children on altruistic anti-natalism ratings, $F(1, 185) = 1.50$, $p = .22$.

Using the same model to examine misanthropic anti-natalism, the resulting model did not indicate an interaction between thoughts about the future and thinking about yourself v. children on misanthropic anti-natalism, $F(2, 185) = .92$, $p = .40$. There was not an effect of thoughts about the future on misanthropic anti-natalism, $F(2, 185) = .86$, $p = .43$. There was also no effect of thinking about yourself v. children on misanthropic anti-natalism ratings, $F(1, 185) = .26$, $p = .61$.

3.2.4 Exploratory Regression Analyses

To examine the optimism and anti-natalism correlational relationships found above I performed a multiple regression. When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict anti-natalism article ratings, my model was found to be significant, $R^2 = .05$, $F(3, 187) = 3.54$, $p = .02$, but the individual predictors were not found to be significant (ps > .25), likely because the three optimism measures were all highly correlated.

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict anti-natalism article grading, my model was found to be significant, $R^2 = .10$, $F(3, 187) = 7.10$, $p < .001$. State optimism marginally predicted lower anti-natalism article gradings ($B = -2.86$, $p = .07$), trait optimism also marginally predicted lower article gradings ($B = -2.57$, $p = .07$), optimism toward children did not predict article gradings ($p = .60$).

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict support for general anti-natalism, my model

was found to be significant, $R^2 = .17$, $F(3, 187) = 12.39$, $p < .001$. Trait optimism predicted less support for general anti-natalism ($B = -.26$, $p = .01$), (all other ps > .14).

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict support for altruistic anti-natalism, my model was found to be significant, $R^2 = .06$, $F(3, 187) = 3.96$, $p = .009$. State optimism marginally predicted less support for altruistic anti-natalism ($B = -2.07$, $p = .08$), (all other ps > .26).

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict support for misanthropic anti-natalism, my model was found to be significant, $R^2 = .12$, $F(3, 187) = 8.67$, $p < .001$. State optimism marginally predicted less support for misanthropic anti-natalism ($B = -.21$, $p = .08$), trait optimism also marginally predicted less support for misanthropic anti-natalism ($B = -.20$, $p = .07$), optimism toward children did not predict support for misanthropic anti-natalism ($p = .74$).

3.3 Discussion

Study 1 consisted of a study examining the effect of optimism (v. pessimism) + child (v. self) manipulation on individuals support for or resistance to anti-natalist beliefs. Generally, my hypotheses were not supported. Firstly, my manipulation checks suggested that at least partially my manipulations might not have been successful at manipulating optimism and pessimism.

Additionally, individuals largely did not express differences in essay rating or grading, or anti-natalism scale rating based on condition. Overall, somewhat unsurprisingly, this suggests that anti-natalism and choices and opinions surrounding

childbearing are deeply held and are difficult to manipulate. Additionally, this again suggests that anti-natalism is a widely unpopular belief. Regardless of condition, support for anti-natalism was quite low, as were ratings and gradings of the anti-natalism article.

Though the previous manipulation was generally unsuccessful, state optimism, trait optimism, and optimism toward one's children were negatively correlated with support for anti-natalism. Additionally, overall, state optimism, trait optimism, and child optimism predicted reduced support for anti-natalism. This suggests that though individuals were seemingly not generally primed to be more optimistic v. pessimistic, individuals who are optimistic are lower in anti-natalism than individuals who are less optimistic.

There could be multiple reasons for why the previous manipulation might not have worked, namely Study 1 explicitly had people think about their current or future children's lives in a positive or negative light. As individuals are expected to be biased toward optimism for their children, individuals might already be highly optimistic about their children and also resistant to pessimism about their children when explicitly told about their children's imagined futures, when a more indirect manipulation might influence individuals to feel less directly threatened about their children, while also thinking more deeply about what how another factor might positively or negatively affect their children's futures. As such, I conducted a second study using the economy as a way to indirectly influence individuals' thoughts about their children's futures.

CHAPTER IV – STUDY 2

Study 2 examines the effect of induced optimism about the economy (in comparison to optimism about oneself) on anti-natalism. As in Study 1, pessimism is employed as an alternative to optimism, Study 2 also examines the effect of induced pessimism about the economy in comparison to oneself on anti-natalism. Beyond hopefully showing main effects of optimism and pessimism on anti-natalism, I also predicted that optimism or pessimism about the economy would be more important to anti-natalism than optimism or pessimism about oneself, as the future economy should greatly affect one's future children and individuals who think that their children will have a promising economic future should have less reason to support anti-natalism. This is because the future economy is something that will be experienced by future children. If the economy enters another severe depression or recession, then future children will suffer from a lack of high paying jobs, education opportunities, and necessary resources. While a strong economy will help future children obtain good jobs, degrees, and enough resources.

4.1 Method

4.1.1 Participants

As the overall structure of Study 2 is the same as Study 1, I planned to recruit approximately 300 participants. I recruited 326 participants through Amazon Mechanical Turk. Participants were paid $1 for between 10 and 15 minutes of their time, participants were boosted $1 if they went over 15-minutes. 14 participants were removed from analyses for failing attention checks which consisted of two questions asking them to click a certain option. Participants were again screened through Cloud Research for being

reliable participants and low in previous attention check failures before being allowed to participate. Additionally, 80 participants were removed from analyses for not having or wanting children, thus data from 232 participants who completed the study were analyzed.

4.1.2 Materials

4.1.2.1 Demographics

As in Study 1, participants received a demographics questionnaire asking them their gender, age, and ethnic background, and if they wanted to have children in the future. I did not expect to find a difference in gender, age, or ethnic background, but it is standard practice to report these data. The gender of my participants was relatively diverse (129 cisgender women, 86 cisgender men, 1 transgender woman, and 16 gender non-binary or other. My participants were also diverse in age, ranging from 21 to 84 (M = 45.29). My sample was predominantly white or Caucasian (189, 16 black or African American, 9 Latino(a) or Hispanic, 13 Asian or Pacific Islander, and 6 multiracial). And the majority of my participants already had children (156, 35 wanted them but did not have them, and 41 had yet to decide if they wanted to have children or not).

4.1.2.2 Self-Esteem Measure

As in Study 1 trait self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965; a = 0.93, M = 3.10, SD = 0.66).

4.1.2.3 Positive and Negative Affect

The PANAS (Watson et al., 1988) was once again used to measure participants' positive (a = 0. 89, M = 4.60, SD = 1.10) and negative affect (a = 0. 95, M = 1.80, SD = 1.20).

4.1.2.4 Dispositional Optimism

Trait optimism was assessed using the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994; a = 0. 92, M = 3.40, SD = 1.00).

4.1.2.5 Socioeconomic Status

Socioeconomic Status (SES) was assessed using six-items previously used to measure socioeconomic status (Griskevicius et al., 2011; a = 0.79, M = 3.60, SD = 1.30).

4.1.2.6 Depression Measure

To measure depression, I again used the Center for Epistemologic Studies Depression Scale (the CES-D Scale; Radloff, 1977; a = 0.94, M = 1.70, SD = 0.59).

4.1.2.7 Priming Material

Participants in the optimism (n = 81), pessimism (n = 74), and control (n = 77) conditions completed a modified version of the Best Possible Self writing prompt (King, 2001). The prime also discussed the participant's future (n = 108) or the future economy (n = 124). In the optimism + self condition (n = 34) participants first read a short news article about why they should be optimistic about the new year (Kenny, 2021) and then read a prompt saying, "Think about your life in the future. Imagine that everything has gone as well as it possibly could. You have worked hard and succeeded at accomplishing all of your life goals. Think of this as the realization of all of your life dreams. Now, write about what you imagined". While participants in the optimism + economy condition (n = 47) read a news article about why economists were optimistic about the new year (Quinn, 2022) and then read a prompt saying, "Think about the economy in the future. Imagine that everything has gone as well as it possibly could. The future economy

is strong and successful. Think of this as the realization of a strong economy and economic prosperity. Now, write about what you imagined".

Participants in the pessimism + self condition (n = 37) read a news article about why there is so much public pessimism (Ezrati, 2021) and then a prompt saying, "Think about your life in the future. Imagine that everything has gone as bad as it possibly could. You have worked hard and but have not succeeded at accomplishing all of your life goals. Think of this as all of your dreams not being realized. Now, write about what you imagined". While participants in the pessimism + economy (n = 37) condition read a news article about consumers having a negative view about the economy (PYMNTS, 2022) and then a prompt saying "Think about the economy in the future. Imagine that everything has gone as bad as it possibly could. The future economy is weak and unsuccessful. Think of this as the realization of a weak economy and economic hardship. Now, write about what you imagined".

Participants in the neutral + self condition (n = 37) first read a short news article about the location of the Super Bowl (Beacham, 2022) and then a prompt saying, "Think about your life in the future. Imagine that everything has stayed the same. Your life has not been overly bad or good. And you have been spending your time going through the motions. Now, write about what you imagined". While participants in the neutral + economy condition (n = 40) read a news article about China's new economic ambassador to New Zealand (McKenzie, 2022) and then read a prompt saying "Think about the economy in the future. Imagine that everything has stayed about the same. The future economy is going at a steady pace, the economy is neither strong nor weak. Now, write about what you imagined". After being assigned to their condition, participants were

asked to spend a few minutes carefully thinking about the writing topic and then writing about what they imagined.

4.1.2.8 Child Optimism Bias Measure

Though I did not attempt to manipulate optimism about future children in Study 2, I included the same child optimism measure used in Study 1 as I thought that optimism about the economy might increase individual's optimism about their children's future (a = 0.94, M = 4.70, SD = 0.86).

4.1.2.9 Optimism Manipulation Check

Next, participants received the same adapted version of the questionnaire for Future Expectations (FEX; MacLeod, 1996) used in Study 1 (a = 0.92, M = 4.60, SD = 0.96).

4.1.2.10 Essay Responses

As in Study 1, participants rated their responses to two essays after the manipulation. The anti-natalism essay was a shortened version of (Benatar, 1997; a = 0.92, M = 2.80, SD = 1.30). And the parent essay was a shortened version of (Spera, 2005; a = 0.90, M = 5.70, SD = 0.89). As in Study 1, participants also assigned a grade to the anti-natalism (M = 73.00) and parenting (M = 90.20) essays from 50 to 100.

4.1.2.11 Anti-Natalism Scale

As in Study 1, I also measured individuals' explicit support for general anti-natalism (a = 0.92, M = 1.70, SD = 0.98), altruistic anti-natalism (a = 0.79, M = 2.20, SD = 1.10), and misanthropic anti-natalism (a = 0.86, M = 2.20, SD = 1.20).

4.1.2.12 Procedure

As in Study 1, participants were recruited for the study online through Amazon Mechanical Turk. They were given an informed consent statement and asked to continue on to the next page if they chose to participate in the study. Participants first received the demographics questionnaire, then Rosenberg Self-Esteem Scale, the socioeconomic questions, the CES-D Scale, the LOT-R, and the PANAS in randomized order to prevent order effects. After measuring personality differences, participants were then randomly assigned to one of the six priming conditions in our 3 (optimism v. pessimism v. control) × 2 (self v. economy) design. Next, they completed the two manipulation checks in randomized order to confirm that the manipulations worked as intended. Then they were given two essays in randomized order and asked to provide feedback on the essays and authors. From there they completed the anti-natalism scale. Lastly, they were presented with an onscreen debriefing.

4.2 Results

4.2.1 Manipulation Check

To see if my manipulations were successful, I ran a 3 (optimism v. neutral v. pessimism) × 2 (self v. economy) ANOVA looking at state optimism. The resulting model indicated that there was not a significant interaction between thoughts about the future and thinking about yourself v. economy on state optimism, $F(2, 226) = .98$, $p = .38$. There was not an effect of thoughts about the future on state optimism, $F(2, 226) = 2.10$, $p = .13$. There was also not an effect of thinking about yourself v. the economy on state optimism ratings, $F(1, 226) = .33$, $p = .57$.

4.2.2 Essay Ratings/Grades

I then submitted essay ratings to a 3 (between-subjects: optimism v. neutral v. pessimism) × 2 (between-subjects: self v. economy) × 2 (repeated measure: anti-natalism vs. control) mixed-model ANOVA. The resulting model indicated that there was a significant interaction between thoughts about the future and thinking about yourself v. the economy on essay ratings, $F(2, 226) = 3.09$, $p = .05$, $\eta_p^2 = .03$. Pairwise comparisons indicated that individuals in the neutral + economy condition rated the anti-natalist article significantly higher than all other conditions (ps < .05), all other differences were found to be non-significant (ps > .26, all means can be found in Table 3). There was not a significant interaction between thoughts about the future and essay ratings, $F(2, 226) = 1.46$, $p = .23$. There was also not an interaction between thinking about yourself v. economy and essay ratings, $F(1, 226) = .02$, $p = .90$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. the economy, $F(2, 226) = 1.30$, $p = .27$. There was a main effect of essay ratings, $F(1, 226) = 746.83$, $p < .001$, $\eta_p^2 = .77$, participants liked the anti-natalist author ($M = 2.80$) significantly less than the author of the parenting article ($M = 5.70$), regardless of condition. There was a significant main effect of thoughts about the future, $F(2, 226) = 3.08$, $p = .05$, $\eta_p^2 = .03$. Pairwise comparisons indicated that individuals in the neutral condition ($M = 3.11$) rated the anti-natalism article significantly higher than both the optimism ($M = 2.65$, $p = .03$) and pessimism conditions ($M = 2.61$, $p = .02$). There was no significant main effect of thinking about yourself v. children, $F(1, 226) = .38$, $p = .54$.

To determine whether my predicted covariates changed these results, I submitted essay ratings to a 3 × 2 × 2 mixed model ANCOVA controlling for self-esteem, positive

affect, negative affect, trait optimism, SES, and depression. Controlling for these variables indicated that there remained a significant interaction between thoughts about the future and thinking about yourself v. the economy on essay ratings, $F(2, 220) = 3.40$, $p = .04$. There was not a significant interaction between thoughts about the future and essay ratings, $F(2, 220) = 1.17$, $p = .31$. There was also not an interaction between thinking about yourself v. economy and essay ratings, $F(1, 220) = .13$, $p = .71$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. the economy, $F(2, 220) = 2.50$, $p = .09$. There was no longer a main effect of essay ratings, $F(1, 220) = .32$, $p = .58$. There was also no longer a significant main effect of thoughts about the future, $F(2, 220) = 1.90$, $p = .15$. Lastly, there was no significant main effect of thinking about yourself v. children, $F(1, 220) = .01$, $p = .99$.

From there I submitted essay grades to the same 3 (between-subjects: optimism v. neutral v. pessimism) × 2 (between-subjects: self v. economy) × 2 (repeated measure: anti-natalism vs. control) mixed-model ANOVA. The resulting model indicated that there was not an interaction between thoughts about the future and thinking about yourself v. the economy on essay grades, $F(2, 226) = 1.24$, $p = .29$. There was not a significant interaction between thoughts about the future and essay grades, $F(2, 226) = 1.01$, $p = .37$. There was also not an interaction between thinking about yourself v. economy and essay grades, $F(1, 226) = .06$, $p = .80$. Additionally, there was not a significant interaction between thoughts about the future and thinking about yourself v. the economy, $F(2, 226) = 1.57$, $p = .21$. The resulting model indicated only a main effect of essay grades, $F(1, 226) = 259.27$, $p < .001$, $\eta_p^2 = .53$, participants graded the anti-natalist essay ($M = 72.97$)

significantly lower than the parenting article (M = 90.17), regardless of condition. There was not a significant main effect of thoughts about the future, $F(2, 226) = 1.66$, $p = .19$. Lastly, there was not a significant main effect of thinking about yourself v. the economy, $F(1, 226) = 1.81$, $p = .18$.

To determine whether my predicted covariates changed these results, I submitted essay grades to a 3 × 2 × 2 mixed model ANCOVA controlling for self-esteem, positive affect, negative affect, trait optimism, SES, and depression. There was not an interaction between thoughts about the future and thinking about yourself v. the economy on essay grades, $F(2, 220) = 1.58$, $p = .21$. There was not a significant interaction between thoughts about the future and essay grades, $F(2, 220) = 1.30$, $p = .28$. There was also not an interaction between thinking about yourself v. economy and essay grades, $F(1, 220) = .04$, $p = .83$. Controlling for these variables, there was a marginally significant interaction between thoughts about the future and thinking about yourself v. the economy, $F(2, 220) = 2.65$, $p = .07$. Controlling for these variables showed that there was no longer a main effect of essay grading, $F(1, 220) = 1.17$, $p = .28$. There was not a significant main effect of thoughts about the future, $F(2, 220) = .99$, $p = .38$. Lastly, there was not a significant main effect of thinking about yourself v. the economy, $F(1, 220) = 1.43$, $p = .23$.

4.2.3 Anti-Natalism Scale

The three anti-natalism scale components were all positively correlated with each other, the anti-natalism scale ratings, and the anti-natalism scale grading. This suggests that specific beliefs about anti-natalism could influence the likability of the author of the anti-natalism article and participants' views about the anti-natalism article.

Additionally, the anti-natalism scale components, article rating, and article grading were generally negatively correlated with trait optimism, the optimism manipulation check, and optimism about one's children (all correlations can be found in Table 4). This suggests that while the manipulations generally did not appear to be successful, individuals higher in optimism about their lives and the lives of their children are less likely to support anti-natalism. Additionally, while altruistic and misanthropic anti-natalism were not correlated with SES, individuals higher in SES were significantly lower in support of general anti-natalism (shown in Table 4), suggesting that SES might preclude anti-natalism more generally.

I then ran 3 (optimism v. neutral v. pessimism) × 2 (self v. economy) ANOVA looking at unspecified anti-natalism ratings. The resulting model did not indicate a significant interaction between thoughts about the future and thinking about yourself v. the economy on unspecified anti-natalism, $F(2, 226) = .27$, $p = .76$. There was also not an effect of thoughts about the future on unspecified anti-natalism, $F(2, 226) = 2.26$, $p = .11$. Lastly, there was also no effect of thinking about yourself v. the economy on unspecified anti-natalism ratings, $F(1, 226) = .96$, $p = .33$.

Using the same model as above, I examined altruistic anti-natalism. The resulting model did not indicate a significant interaction between thoughts about the future and thinking about yourself v. the economy on altruistic anti-natalism, $F(2, 226) = .17$, $p = .84$. There was also not an effect of thoughts about the future on altruistic anti-natalism, $F(2, 226) = 1.90$, $p = .15$. There was an effect of thinking about yourself v. the economy on altruistic anti-natalism ratings, $F(1, 226) = 4.22$, $p = .04$. Individuals in the economy

condition (M = 2.30) were higher in altruistic anti-natalism than individuals in the self condition (M = 2.02).

4.2.4 Exploratory Regression Analyses

To expand upon the previously found relationships between optimism and anti-natalism further I conducted a multiple regression. When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict anti-natalism article ratings, my model was found to be significant, R^2 = .02, F(3, 228) = 2.66, p = .05, but the individual predictors were not found to be significant (ps > .16), likely because the three optimism measures were highly correlated with each other.

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict anti-natalism article grading, my model was found to be significant, R^2 = .05, F(3, 228) = 4.41, p = .005, but the individual predictors were not found to be significant (ps > .11), again, likely because the three optimism measures were highly correlated with each other.

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict general anti-natalism, my model was found to be significant, R^2 = .11, F(3, 228) = 9.57, p <.001. Optimism about one's children predicted less support for general anti-natalism (B = -.30, p < .001), trait optimism also marginally predicted less support for general anti-natalism (B = -.14, p = .06), though state optimism did not predict support (p = .99).

When performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict altruistic anti-natalism, my model was found

to be significant, $R^2 = .04$, $F(3, 228) = 2.97$, $p = .03$, but the individual predictors were again not found to be significant (ps > .15).

Lastly, when performing a multiple regression using optimism toward one's children, state optimism, and trait optimism to predict misanthropic anti-natalism, my model was found to be significant, $R^2 = .08$, $F(3, 228) = 6.99$, $p < .001$. Additionally, optimism about one's children predicted less support for misanthropic anti-natalism ($B = -.20$, $p = .05$), as did trait optimism ($B = -.26$, $p = .006$), though not state optimism ($p = .89$).

Using the same model to examine misanthropic anti-natalism, the resulting model did not indicate an interaction between thoughts about the future and thinking about yourself v. the economy on misanthropic anti-natalism, $F(2, 226) = .32$, $p = .73$. There was also not an effect of thoughts about the future on misanthropic anti-natalism, $F(2, 226) = .82$, $p = .44$. Lastly, there was no effect of thinking about yourself v. the economy on misanthropic anti-natalism ratings, $F(1, 226) = .02$, $p = .88$.

4.3 Discussion

Study 2 consisted of a study examining the effect of optimism (v. pessimism v. neutral) x economy (v. self) manipulation on individuals' support for or rejection of anti-natalist beliefs. As in Study 1, my hypotheses were generally not supported. Firstly, my manipulation checks suggested that my manipulations might not have been successful at manipulating optimism and pessimism.

As in Study 1, though the previous manipulation was generally unsuccessful, state optimism, trait optimism, and optimism toward one's children were negatively correlated with support for anti-natalism. Additionally, overall, optimism predicted reduced support

for anti-natalism. This again suggests that though individuals were seemingly not generally primed to be more optimistic v. pessimistic, individuals who are optimistic are lower in anti-natalism than individuals who are less optimistic.

Lastly, as in Study 1, individuals largely did not express differences in essay rating or grading, or anti-natalism scale rating based on condition. Overall, this again suggests that anti-natalism and choices and opinions surrounding reproduction are deeply personal and are difficult to manipulate. Again, suggesting that anti-natalism is a widely unpopular belief. Regardless of condition support for anti-natalism was quite low, as were ratings and gradings of the anti-natalism article.

CHAPTER V – GENERAL DISCUSSION

The goal of Study 1 was to examine if individuals biased toward optimism surrounding their children or future children would show less support toward anti-natalism than individuals optimistic about their future, pessimistic about their children's future children, or pessimistic about their future. While the goal of Study 2 was to examine if individuals biased toward optimism surrounding the economy would show less support toward anti-natalism than individuals optimistic about their future, pessimistic about the economy, or pessimistic about their future.

Overall, my hypotheses were not supported. First, my manipulation checks showed either no or partial success, suggesting that either a stronger manipulation might be needed to successfully influence individuals' perceptions of anti-natalism or that anti-natalism is largely stable and difficult to manipulate. While individuals' optimism was correlated with lower ratings of the anti-natalism essay and scale components and, overall, optimism predicted reduced support for anti-natalism, my priming optimism and pessimism conditions did not show a difference in anti-natalism rating. In general, support for anti-natalism was quite low, as were ratings and gradings of the anti-natalism article. This supports the idea that anti-natalism is a generally unpopular and difficult to manipulate belief. Additionally, this reinforces the idea that individuals' thoughts and decisions surrounding reproduction are deeply held and unyielding to the opinions of others and outside factors.

It is important to note that optimism about oneself both generally and at the current moment and optimism about one's children predicted decreased support for anti-natalism as measured using article ratings, article gradings, and anti-natalism scale

measures. While optimism about one's children did not generally predict greater reduced support for anti-natalism in comparison to personal optimism measures, optimism generally reduced support for anti-natalism, suggesting that optimism whether about oneself or one's children precludes individuals from supporting anti-natalist beliefs.

5.1 Limitations and Future Directions

There were a few limitations with the current studies. Both studies were conducted in early 2022, a time with a variety of extenuating circumstances, namely the congoing COVID-19 pandemic, the invasion of and ongoing war on Ukraine by Russia, concerns surrounding inflation and a potential recession globally and in the United States in particular, and ongoing concerns surrounding the probe into the January 6, 2021, insurrection on the United States government. As early 2022 was a time of great anxiety, stress, and pessimism in the United State, this could have influenced my results. While the news articles that I presented to participants were real articles posted on news websites around the time of the study, many news articles were on the internet showing contrary opinions. In particular, there were many articles about why people should be pessimistic about the future of the world and United States, especially about why there is reason to be pessimistic about the economy, while news articles about why one should be optimistic about the future in general, children, or the economy were difficult to find. Even neutral articles about the economy were difficult to come across at the time. Individuals could have had a difficult time believing the articles presented. Future research could examine induced optimism and pessimism at a more stable and less anxious time for the United States and world in general.

Another limitation is the potential that the manipulations might not have been strong enough to successfully manipulate optimism or pessimism enough to influence thoughts about anti-natalism. My manipulation check for Study 2 was found to be unsuccessful and my manipulation checks for Study 1 only partially indicated a successful manipulation, as while individuals in the pessimism condition were significantly lower in optimism than individuals in the optimism and neutral conditions, there was not a significant difference in optimism between individuals in the optimism and neutral conditions.

Additionally, the results raise doubts about whether the neutral + economy condition was acting as it was intended. Individuals in the neutral + economy condition rated the anti-natalism essay significantly higher. One reason this could be is that the prime mentioned a Chinese economic advisor to New Zealand. While all of my participants were located in the United States and thus should seemingly not be concerned about a Chinese economic advisor in New Zealand, participants might have been threatened by the mention of China as it is a powerful competitor to the United States and this could have led them to think about China in relation to the United States, possibly making them more unsure about the future of American children if China continues to compete with the United States. To prevent bias against another country from potentially influencing the results, future research could instead present a news article discussing an economic advisor in the United States working with a country that is usually viewed possibly by Americans.

Also, the overwhelming majority of participants in both studies already had children, which could cause them to be more resistant to anti-natalism, regardless of what

evidence they are presented with. Parents usually want the best for their children, they don't want their children to experience a life of suffering, thus being present with this information is likely deeply upsetting. This is likely especially unsettling to individuals who are already parents as they have children that can suffer, and their parents are solely responsible for them being born and thus being able to experience suffering. As such, parents might attempt to ignore these reminders and instead work to strengthen their belief that reproducing is good and they did the right thing. Future research could employ a sample of participants who want but do not yet have children as they might be less resistant to reminders that life could be bad for their children given that they can still prevent those children from being born and thus suffering in some way.

More so, the control article participants read was related to parenting though not reproduction specifically. Though this has not been previously found to be related to ratings of anti-natalism, it is possible that the control article inadvertently caused individuals to think positively about having children or some other thought that negatively influenced their opinions of anti-natalism. Future work could instead present a control essay that is entirely unrelated to children or parenting to see if the same effect would be found.

Lastly, as support for anti-natalism has been found to be overwhelmingly low and mostly not subject to change, future work could compare anti-natalism to the choice to be childfree or childless-by-choice. As previously mentioned, much of the population is now choosing to forgo having children or to have less children than previous generations, thus making this choice much more common than anti-natalism. As such, individuals might be more likely to support being childfree when primed for pessimism in comparison to

optimism, while support for anti-natalism might remain the same after pessimism manipulation. Therefore, childfree individuals and the choice to remain childfree seem to be a promising future comparison to anti-natalists and support for anti-natalism.

5.2 Conclusion

I presented two studies examining the effect of optimism manipulation on individuals support for anti-natalism and anti-natalist arguments. Study 1 examined optimism manipulation (self v. child) in comparison to pessimism (self v. child) and a neutral control (self v. child) on anti-natalism. Instead of optimism about one's children, Study 2 examined optimism toward oneself in comparison to optimism about the future economy which is likely to also be linked to optimism about one's future children. Specifically, optimism (self v. economy) was compared to pessimism (self v. economy) and a control group (self v. economy).

This project attempts to lead to a better understanding of why some individuals might hold negative views about reproduction and why many continue having children, even when negative events are occurring to society and potentially themselves and their children. Additionally, this work attempted to help better understand why the birth rate is declining in many parts of the world. For example, birth rates have been found to decline during economic hardships like recessions and depressions (Johnson, 2014; Livingston & Cohn, 2010; Livingston, 2011). While the hypotheses of these studies were not supported, individuals low in SES did show increased support for general anti-natalism in comparison to individuals high in SES, indicating that SES could be important to beliefs surrounding reproduction. Lastly, as the birth rate continues to decline with our current

economic difficulties and public health crisis caused by the COVID-19 pandemic, reproductive psychology becomes of great importance to study.

APPENDIX A – Tables

Table 1 *Study 1 means and standard deviations (by thoughts about future and child v. self conditions combined)*

	OptChild	OptSelf	PessChild	PessSelf	NeutChild	NeutSelf
Child Optimism	4.89 (.97)	4.70 (.88)	4.53 (.93)	4.31 (.83)	5.42 (.93)	4.70 (.89)
State Optimism	4.72 (.98)	4.71 (1.09)	4.98 (1.06)	4.35 (.95)	5.04 (1.45)	4.57 (.95)
Self-Esteem	3.02 (.62)	2.96 (.71)	3.23 (.57)	3.19 (.60)	3.14 (.81)	3.04 (.70)
Positive Affect	4.76 (1.29)	4.68 (1.19)	5.03 (1.11)	4.74 (1.16)	5.21 (1.24)	4.63 (.98)
Negative Affect	2.08 (1.42)	2.07 (1.29)	1.97 (1.08)	2.08 (1.19)	2.01 (1.09)	2.06 (1.15)
Trait Optimism	3.44 (1.06)	3.20 (.96)	3.62 (.96)	3.29 (1.04)	3.54 (1.22)	3.26 (1.03)
SES	3.50 (1.31)	3.61 (1.42)	3.94 (1.41)	3.40 (1.47)	3.78 (1.32)	3.76 (1.38)
Depression	1.76 (.67)	1.80 (.63)	1.61 (.54)	1.76 (.65)	1.66 (.79)	1.82 (.82)
AN Essay	2.41 (1.10)	2.85 (1.49)	2.80 (1.44)	2.80 (1.61)	2.55 (1.52)	2.57 (1.81)
AN Grade	68.56 (14.2)	73.86 (16.14)	75.63 (15.37)	73.52 (15.07)	73.86 (15.29)	69.28 (17.57)
Control Essay	5.69 (.95)	5.81 (.82)	5.70 (1.11)	5.70 (1.08)	5.62 (1.31)	5.88 (.92)
Control Grade	91.59 (7.72)	91.30 (6.33)	90.60 (6.83)	90.62 (8.77)	90.93 (5.89)	91.38 (8.75)
General AN	1.73 (1.03)	2.06 (1.36)	1.72 (.84)	2.09 (1.26)	1.80 (1.16)	1.67 (1.23)

Table 1 (continued)

Altruistic AN	1.93 (1.10)	2.38 (1.17)	2.09 (1.10)	2.43 (1.19)	2.22 (1.31)	2.05 (1.13)
Misanth AN	2.19 (1.13)	2.47 (1.39)	2.19 (1.03)	2.44 (1.29)	2.20 (1.51)	1.95 (.95)

Table 2 *Study 1 observed correlations between all variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. ChildOpt	-	**.58*** ·**	**.29*** **	**.27*** **	**-.21** **	**.34*** **	**.29** **	**-.29*** **	**-.29** **	-.13	**.26*** **	.13	**-.28*** **	-.05	**-.20** **
2. StateOpt		-	**.69*** **	**.56*** **	**-.47*** **	**.68*** **	**.44*** **	**-63*** **	**-.22** **	**-.29*** **	**.24*** **	.10	**-.36*** **	**-.21** **	**-.33*** **
3. Self Est			-	**.52*** **	**-.60*** **	**.69*** **	**.38*** **	**-.80*** **	**-.25*** **	**-.32*** **	.07	-.04	**-.45*** **	**-.30*** **	**-.42*** **
4. Pos Aff				-	**-.33*** **	**.54*** **	**.33*** **	**-.41*** **	-.02	**-.17***	**.24*** **	**.15***	**-.25*** **	-.14	**-.26*** **
5. Neg Aff					-	**-.41*** **	**-.24** **	**.71*** **	**.24** **	**.23** **	-.04	.02	**.45*** **	**.33*** **	**.36*** **
6. TraitOpt						-	**.40*** **	**-.70*** **	**-.20** **	**-.29*** **	.02	.02	**-.36*** **	**-.21** **	**-.31*** **
7. SES							-	**-.42*** **	.11	.02	.08	-.03	.02	.09	-.01
8. Depress								-	**.30*** **	**.31*** **	-.01	.05	**.45*** **	**.32*** **	**.37*** **
9. AN Essay									-	**.64*** **	-.05	.02	**.49*** **	**.45*** **	**.41*** **
10. AN Grade										-	.0003	.11	**.45*** **	**.39*** **	**.37*** **
11. Cont Essay											-	**.62*** **	**-.19** **	**-.16***	**-.22***
12. Cont Grade												-	-.12	**-.18***	-.13
13. General AN													-	**.68*** **	**.69*** **
14. Altruistic AN														-	**.70*** **
15. Misanth AN															-

Table 3 *Study 2 means and standard deviations (by thoughts about future and econ or self conditions combined)*

	OptEcon	OptSelf	PessEcon	PessSelf	NeutEcon	NeutSelf
Child Optimism	4.71 (.72)	5.04 (.85)	4.53 (.80)	4.57 (.89)	4.55 (.88)	4.86 (.99)
State Optimism	4.74 (.94)	4.78 (.94)	4.42 (.99)	4.49 (.85)	4.71 (.93)	4.39 (1.10)
Self-Esteem	3.15 (.56)	3.14 (.69)	3.09 (.68)	3.26 (.66)	3.11 (.68)	2.96 (.74)
Positive Affect	4.71 (1.02)	4.09 (1.33)	4.87 (1.09)	4.69 (1.04)	4.81 (1.01)	4.65 (1.23)
Negative Affect	1.72 (1.08)	1.51 (.88)	2.00 (1.27)	1.64 (1.01)	1.98 (1.31)	2.19 (1.33)
Trait Optimism	3.59 (.90)	3.25 (.97)	3.22 (1.22)	3.50 (.96)	3.41 (1.00)	3.24 (1.13)
SES	3.67 (1.13)	3.48 (1.39)	3.67 (1.43)	3.77 (1.30)	3.57 (1.24)	3.62 (1.25)
Depression	1.59 (.49)	1.68 (.62)	1.68 (.62)	1.53 (.50)	1.73 (.66)	1.80 (.66)
AN Essay	2.51 (1.33)	2.84 (1.26)	2.56 (1.32)	2.66 (.94)	3.43 (1.38)	2.77 (1.45)
AN Grade	70.81 (14.21)	73.03 (13.75)	71.46 (16.82)	71.76 (13.71)	78.67 (14.34)	72.24 (16.17)
Control Essay	5.73 (.91)	5.56 (.87)	5.70 (.95)	5.64 (.98)	5.70 (.80)	5.78 (.87)
Control Grade	91.09 (6.95)	89.97 (8.36)	90.32 (7.15)	88.22 (10.06)	91.65 (5.14)	89.38 (10.08)
General AN	1.52 (.79)	1.47 (.67)	1.83 (1.02)	1.76 (1.05)	1.90 (1.06)	1.64 (1.21)
Altruistic AN	2.13 (1.12)	1.82 (.84)	2.28 (1.19)	2.09 (.98)	2.51 (1.18)	2.12 (1.16)
Misanth AN	2.10 (1.03)	2.17 (1.17)	2.29 (1.18)	2.14 (1.28)	2.30 (1.31)	2.46 (1.28)

Table 4 *Observed correlations between all variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Child Opt	-	**.56*** **	**.26*** **	**.17** **	**-.20** **	**.28*** **	**.21** **	**-.27*** **	-.12	**-.17** **	**.18** **	**.20** **	**-.30*** **	**-.15***	**-.20** **
2. State Opt		-	**.59*** **	**.45*** **	**-.45*** **	**.61*** **	**.36*** **	**-.57*** **	**-.15***	**-.19** **	**.19** **	.12	**-.24*** **	**-.19** **	**-.21** **
3. Self-Est			-	**.47*** **	**-.60*** **	**.73*** **	**.37*** **	**-.76*** **	**-.24*** **	**-.31*** **	.11	.04	**-.30*** **	**-.18** **	**-.31*** **
4. Pos Aff				-	**-.30*** **	**.51*** **	**.33*** **	**-.46*** **	-.06	**-.20** **	**.26*** **	**.21** **	-.12	-.02	-.10
5. Neg Aff					-	**-.53*** **	**-.28*** **	**.69*** **	**.17** **	**.19** **	.03	.004	**.32*** **	**.23*** **	**.27*** **
6. Trait Opt						-	**.42*** **	**-.69*** **	**-.16***	**-.20** **	.12	.12	**-.22*** **	-.12	**-.26*** **
7. SES							-	**-.38*** **	-.08	-.06	.05	.09	**-.13***	-.03	-.09
8. Depression								-	**.19** **	**.23*** **	-.11	-.08	**.32*** **	**.22*** **	**.29*** **
9. AN Essay									-	**.65*** **	-.04	.02	**.42*** **	**.35*** **	**.36*** **
10. AN Grade										-	.04	.12	**.29*** **	**.21** **	**.29*** **
11. Control Essay											-	**.56*** **	**-.19** **	**-.14***	**-.16***
12. Control Grade												-	-.10	-.10	-.09
13. General AN													-	**.60*** **	**.65*** **
14. Altruistic AN														-	**.61*** **
15. Misanth AN															-

APPENDIX B – IRB Approval Letter

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-048
PROJECT TITLE:	Future Expectations Survey
SCHOOL/PROGRAM	School of Psychology
RESEARCHERS:	PI: Faith Brown Investigators: Brown, Faith~Keefer, Lucas A~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Exempt Category
APPROVAL STARTING:	28-Feb-2022

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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