The "Unplanned" Effect: Impact of Fetal Ultrasound Images on Viewers' Abortion Stance

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ABSTRACT: As I recently showed in an article for secular philosophical audiences,[1] a small but non-negligible proportion of pro-abortion viewers of fetal ultrasound images—much like Abby Johnson as portrayed in the movie *Unplanned* and in her book of the same name—come to attribute personhood to fetal humans and to believe that abortion is morally unacceptable. And, as I argued there, such viewers should be presumed rational: their newfound ascription of personhood is relevantly similar to that of a viewer seeing a moving, human-shaped figure in the distance and inferring that the figure is a person.

This article will take the next natural step: analyzing the ethical and practical implications of the images' power and limitations. For example, should grassroots activism focus on showing prenatal ultrasound images to the general public? Should financing of high-resolution scanners be prioritized in crisis pregnancy centers? And should legal efforts focus on mandating the provision (and viewing?) of ultrasound images prior to abortion?

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[1] Giebel (2020b). Several passages from, or closely related to, this earlier paper have found their way into the current one (and I'm grateful to *Diametros* for its liberal copyright policies).

Introduction

ABBY JOHNSON DROPPED THE ULTRASOUND PROBE and ran, crying, from the procedure room. Despite working for years at the clinic, she'd never assisted with an abortion before. And, despite three pregnancies of her own, two of which she had aborted, she was surprised by the images on the monitor's screen: she'd expected to see something looking more like "tissue" or "cells." Upon seeing that the first-trimester fetal human she helped to abort was, well, human—that it had arms and legs, a heartbeat, etc., along with seemingly purposive movement—Johnson experienced a radical shift in judgment regarding the moral status of fetal humans.[2] She describes her reaction as follows:

> What was in this woman's womb just a moment ago was alive. It wasn't just tissue, just cells. That was a human baby—fighting for life! … What I have told people for years, what I've believed and taught and defended, is a lie.[3]

Johnson came to view fetal humans as persons with full moral status and abortion as morally impermissible; she quit her job at the clinic and ultimately became a pro-life activist.

Similarly, as I recently discussed in an article for secular philosophical audiences,[4] even among women about to procure abortions, voluntarily viewing images from a pre-procedure ultrasound seems to lead a small but non-negligible percentage to change their minds and continue their pregnancies after all.[5] And some pregnancy help centers, which report that around 30% of their clients are planning or seriously considering abortion, have found that after exposure to ultrasound images and further information regarding prenatal development, only 2% to 15% choose to abort.[6] Further,

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[2] For the sake of brevity, I use "fetal human" to refer to a human being at any stage of prenatal development.

[3] Johnson (2011): 7. See also the 2019 movie *Unplanned*, which depicts the same story.

[4] Giebel (2020b).

[5] Gatter, Kimport, Foster et al. (2014); cf. Upadhyay et al. (2017).

[6] South Dakota Legislature (2005): 19–20, 38. This greater impact of ultrasounds conducted in pregnancy help centers as opposed to abortion clinics likely reflects lower decision certainty among women seeking their services. By contrast, during the time period of the study 814 of the 819 women seeking abortion at South

the assumption of many pro-life groups—and of their pro-abortion opponents—is that viewing images of fetal humans will persuade observers to adopt pro-life positions.[7] In fact, some pregnancy care centers have been accused of using ultrasound images manipulatively to persuade women to continue their pregnancies.[8]

How should we understand the changes in ethical beliefs taking place among ultrasound viewers? Let's consider a few obvious explanations. First, viewing images of fetal humans, even as early as five to six weeks post-fertilization, may increase empathy. Second, the effect of the images on viewers' ethical judgments may be mediated by (or dispel) cognitive and empathic biases. Or, third, the ultrasound may simply provide new information, leading to ordinary belief formation or revision.

After summarizing my previous arguments regarding these explanations, this paper will take the next natural step: analyzing the ethical and practical implications of the images' power and limitations. For example, should grassroots activism focus on showing prenatal ultrasound images to the general public? Should financing of high-resolution scanners be prioritized in pregnancy help centers? And should legal efforts focus on mandating the provision of ultrasound images prior to abortion?

Dakota's only abortion clinic received no information regarding their fetuses other than gestational age; almost all went through with the abortion. (One could of course question the objectivity of reports from pregnancy help centers—or from abortion clinics. But since these types of facilities are in a unique position to access the relevant data, some degree of reliance on their reports seems unavoidable. One work-around might be to conduct a study of reactions of non-pregnant viewers to ultrasound images. Of course, any such study, while affording more objectivity in data collection, would have its own limitations, including an inherent selection bias insofar as its participants would have to be willing to view such images.)

[7] Waldman (2014); Wolf (1995). As Sanger (2008) argues, the very point of laws mandating that pre-abortive women be offered the opportunity to view their ultrasound scans seems to be the hope that they will change their minds.

[8] For example, John Oliver, in the April 8, 2018, episode of his HBO television show "Last Week Tonight," played a recording (allegedly) of a pregnancy care center staff member saying, "She'll stay on that [ultrasound examination] table until she decides she wants the baby."

I. Empathy and Bonding

One obvious explanation for a shift in judgment regarding fetal humans among those viewing ultrasound images is increased empathy and (in the case of expectant parents) bonding or attachment. As several studies of responses to routine prenatal ultrasounds indicate, expectant parents tend to report "personification and attachment to their baby."[9] For example, one expectant mother reflected:

> The most important [aspect of the ultrasound scan] is to create a bond between the father, mother, and baby. Imagine seeing the head, four limbs, and a beating heart, and at the same time realizing that this is ours![10]

Another said:

> There is an individual who lives its own life, who becomes a person of its own, and I think this is easier to imagine when you have seen it. I have become much more protective. . . and I didn't feel that at all before the ultrasound. Maybe you feel more like a mother.[11]

And an expectant father remarked:

> Up until then it was just a sort of vague blobby thing that was going to happen seven months away. … Since then it has felt real, it has felt as though there's a human being.[12]

Similarly, another study found that a first-trimester ultrasound scan was associated with a modest but significant increase in second-trimester maternal attachment—even compared with expectant mothers who had viewed a more recent second-trimester scan.[13] Third-trimester ultrasound

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[9] Øyen, Aune (2016): 12. The authors cite several other studies with similar findings. Of course, people other than the parents would not necessarily develop a similar attachment to the fetal humans. But other viewers might well "personify" them, in the literal sense of attributing to them the metaphysical and moral status of persons, as Abby Johnson did after assisting with an ultrasound-guided abortion.

[10] Øyen, Aune (2016): 10.

[11] Dykes, Stjernqvist (2001): 98; see also Milne, Rich (1981).

[12] Draper (2002): 780.

[13] Öhman, Waldenström (2010).

scans have also been found to increase maternal bonding—the clearer the image, the stronger the effect.[14]

In one study, women undergoing routine ultrasound examinations even brought up their increased reluctance to pursue abortion:

> I feel that it is human. It belongs to me. I couldn't have an abortion now.[15]

> I am going all the way with the baby. I believe it is human.[16]

Even among women whose ultrasound images revealed serious fetal abnormalities leading to miscarriage or abortion, the most common theme researchers found in follow-up interviews was that the images made the fetal human seem more "real," "living," or "human"—which, in some cases, made the loss more difficult.[17]

Of course, it is not just pregnant women and their partners who can have strong responses to ultrasound images. For those not experiencing maternal or paternal bonding, empathy seems a natural explanation for this phenomenon: Coming to perceive the fetal human as "more real" or as a baby may encourage viewers to identify with the inferred interests, needs, and even feelings of the fetal human, leading to a "vicarious affective response" involving "feelings that are more congruent with another's situation than with [one's] own."[18] And if abortion is an imminent reality or likelihood in the case of a particular fetal human (or even if that possibility is imagined), the viewer may experience empathic distress: indeed, that's a reasonable explanation of Abby Johnson's reaction to the ultrasound images she viewed.

Empathy is generally considered a good quality: it tends toward benefiting others. And empathic distress, occurring when an observer sees someone in "discomfort, pain, danger, or some other type of distress" and has feelings corresponding to that person's situation, is positively correlated

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[14] de Jong-Pleij, Ribbert, Pistorius et al. (2013).

[15] Fletcher, Evans (1983): 392.

[16] Ibid.

[17] Black (1992): 48. The interviews were conducted one to two months after the pregnancies ended.

[18] Hoffman (2002): 29–30.

with helping behavior and is relieved when the observer succeeds in helping.[19]

Although the *pathos* root (referring to pity or sorrow) of the word "empathy" may seem to suggest that an empathy-based reaction is by nature purely emotional and even irrational, we humans are more complex than that. Our reason can guide our emotional responses—a key aspect, as philosophers since at least the time of Plato and Aristotle have pointed out, of our development of virtue or vice.[20] And early Confucian philosopher Mencius famously seemed to link empathic distress (a "feeling of alarm and compassion" upon seeing a child in danger) to cultivation of the key virtue of benevolence.[21] More recently, Christian Miller, a psychologically informed philosopher, has explored the relationship between empathy and virtuous compassion, arguing that empathy increases helping behavior by eliciting genuinely altruistic motivations.[22] And philosopher Michael Slote has worked to base an entire ethical theory on empathy.[23] So it seems that empathy has an important role to play, alongside and in cooperation with reason, in developing and exercising ethical virtue.

These philosophical and psychological assessments suggest that our empathic responses, like our sense impressions, are generally trustworthy. In the absence of strong evidence to the contrary, then, the empathic responses of Abby Johnson and the other women quoted in this article to fetal

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[19] Hoffman (2002): 30–36; see also chap. 6. For additional analysis, see Giebel (2020a), chap. 18.

[20] See, e.g., Plato (1992): bk. IV; Aristotle (1999): bk. II.

[21] Mencius (2004): 2A6. Of course, David Hume also associated benevolence with a sympathetic (today we might say "empathic") emotional response—but he thought reason was largely the passions' slave rather than their guide. See Hume (2011): II.3.3.

[22] Miller (2013): 108–119. As Miller defines it, "A person's ultimate desire is altruistic just in case: (i) It concerns what she thinks benefits (at least) one person who is not herself. (ii) The desire cannot be satisfied unless someone other than herself would be benefitted in her eyes, and benefitted in such a way that is independent of what would subsequently benefit her" (2013): 113.

[23] Slote (2007). Although analysis of Slote's work is beyond my scope here, for an interesting critique see Hourdequin (2015); for a discussion of his empathy-based analysis of abortion in particular, along with analysis of the impact of medical and social norms on empathy with fetal humans, see Mills (2018).

ultrasound images, leading to increased moral consideration of fetal humans, should be presumed rational and possibly conducive to ethical development.[24]

However, overreliance on empathy can help facilitate irrationality and even vice. For example, empathy can be over-aroused, causing the empathizing agent to become the "victim" of another's distress—and to focus on eliminating her own distress rather than that of the one actually suffering. And although there are many ways to reduce empathic overarousal (e.g., physical or mental distancing, meditation, talk therapy), its possibility serves as a good reminder to keep other tools, such as normative principles of justice, in our ethical toolkit.

Another limitation of empathy is that it is susceptible to bias: We tend to empathize more strongly with, e.g., those we know, those who are immediately present, and those who are more similar to us, which can lead us to disregard the more pressing needs of others. Indeed, psychologist Paul Bloom has recently argued that empathy's limitations are so serious that it tends to impact our ethical judgment negatively rather than positively.[25] We will next examine several types of bias that may be implicated in—or mitigated by—reactions to fetal images.

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[24] Even the pro-abortion author of the *Slate* article referenced earlier grants the rationality of these women: "Women who voluntarily look at ultrasounds and then decide against abortion are acting as rationally as the ones who decide to go through with it. We all make choices along a variety of axes: the financial axis; the relationship-status axis; the personal goals and dreams axis; the ethical axis; and, yes, the emotional axis. Expecting women to ignore any one scrap of data (as if they are not capable of weighing it, carefully, alongside the others) is underestimating women." Waldman (2014).

[25] Bloom (2016), esp. chap. 3 and 5; cf. Miller (2013): 126–29. Even Bloom (2016: chap. 4), however, acknowledges that it is fitting to care more—and perhaps even empathize more—with family members than with strangers. And of course, the debate about abortion concerns, among other things, whether the fetal human should be counted as a family member. To some extent, as Bloom (2016: chap. 1) acknowledges, his negative assessment of empathy, in contrast to other authors' positive assessments, is partly a function of the varying definitions among authors: e.g., Hoffman (2002) defines it as a vicarious affective response to another's situation; Slote (2007) defines it as sharing another's emotions; and others even use it roughly synonymously with "compassion" or "caring." For detailed analysis of these varied uses, see Batson (2009).

II. Bias

Accounts of cognitive bias are myriad: Depending upon who's counting, we may be susceptible to dozens or even hundreds of different biases. So once again we'll limit our discussion to a few of the most obvious categories, noting how they relate to our previous analysis of empathy and bonding.[26]

Self-serving bias. Perhaps most obviously, we have a natural tendency to interpret our own actions, motives, and traits more favorably than those of others; and we try to justify actions and judgments that serve our own interest. We also have a strong tendency to focus upon and even seek out information that confirms our preexisting beliefs.

An interesting aspect of abrupt changes in belief, such as those of Abby Johnson and of the women who declined abortion after viewing pre-procedure ultrasound images, is that they appear to flout strong natural inclinations to tell themselves that their past judgments and decisions and their current courses of action are morally unproblematic. Instead, these viewers change course in ways that would seem obviously counter to their own personal or financial interest. A plausible explanation of this change in belief and action, then, must be powerful enough to account for the strength of the biases that were set aside. If the new information itself doesn't fully explain a particular shift in judgment and action, we might suspect that a countervailing bias is at play; we'll consider two additional common types of bias.

Familiarity bias. In addition to favoring ourselves, we tend to favor those familiar to us: our family members and friends, members of groups with which we identify, and people similar to us in various ways. Familiarity bias is empathic as well as cognitive: It impacts the degree to which we empathize with—and respond to—another's distress.[27] In the case of third

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[26] Cognitive biases are distinct from any bias in the presentation or framing of the information itself: Although a biased presentation obviously can impact the cognitive processing and moral judgments of its recipients, the way in which it does so is beyond the scope of this essay.

[27] Hoffman (2002: chap. 8); cf. Bloom (2016). For example, college students are more willing to help strangers who are fellow students from the same university than those from another university in the same town: see Graziano, Habashi (2015): 239–240; Coke, Batson, McDavis (1978). For an interesting study showing the

parties viewing ultrasound images, perhaps the images provide sufficient familiarity to tip the scales of judgment in favor of the fetal human—or at least *less* strongly in favor of the more-familiar pregnant woman's competing interests. In the case of a change in judgment on the part of the woman herself, she might even come to see the fetal human as a family member. But these explanations, like those regarding the related phenomenon of self-serving bias, seem more easily interpreted primarily as instances of overcoming preexisting biases than as acquiring new ones—after all, the pregnant woman and her interests remain more familiar than those of the fetal human despite any increase in its familiarity.

Here-and-now bias. In addition to familiarity bias, one other cognitive bias dramatically impacts empathy: here-and-now bias—especially in its more specific instantiation, the identifiable victim effect.[28] For example, philosopher Peter Unger used a variety of hypothetical cases to show that we (irrationally, he argued) prefer to rescue one immediately present victim rather than use the same resources to save many distant victims by donating to organizations like Oxfam.[29] Although the mother is obviously present during an ultrasound scan, she is not the star of the show—the scan focuses almost exclusively on the fetus. So a viewer who considers the fetal human to be subject to possible danger might be prone to a cognitive and empathic bias favoring the rescue of the fetal human over sparing the woman (or anyone else) significant distress. Such an explanation seems quite plausible in the case of imminent abortion: There is an obvious—even mortal—danger to the fetal human. The seriousness of such danger, however, casts into doubt our common usage of the term "bias."

Unlike empathy, bias is generally taken to be a negative attribution: The term "bias" normally refers to a disproportionate, unfair weighting of the relevant considerations. But psychology, as an empirical discipline, can show only that we weight such considerations *differently*—it does not directly address whether such differences are *unfair*. And favoring here-and-now considerations is not necessarily irrational or unethical: In an emergency, the

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tendency, even among infants, to prefer those who share trivial similarities, see Mahajan, Wynn (2012).

[28] Hoffman (2002): 14; cf. chap. 8.

[29] Unger (1996).

immediate situation appropriately takes precedence. And if the viewing agent reasonably believed the fetal human to have significant moral status, then an imminent possibility of abortion could reasonably be considered an emergency.[30] Thus, any attribution of irrationality assumes that the viewer's inferences regarding the moral status of the fetal human are unreasonable—and I'll argue next that that assumption is itself unreasonable.

III. Cognitive Processing, Fast and Slow

Regardless of whether a judgment favoring someone with here-and-now distress is always accurately described as a bias, here-and-now thinking is clearly different from the slower, less-intuitive style of thinking we might use for data analysis or logical proofs. A dual-process account of cognition[31] may usefully explain the reactions of some viewers of fetal ultrasound images.

On the "fast" side of human cognition, fetal humans' characteristically human appearance may encourage an automatic, intuitive judgment that they are due moral consideration. Further, visual imagery in general tends to favor consideration of concrete actions and their immediate impact, while verbal descriptions tend to favor more abstract ends to be achieved. People with more visual cognitive styles generally tend to judge sacrificing one person to save others as less morally acceptable than do those with more verbal styles—and those more vividly visualizing the plight of the one to be sacrificed are more likely to judge the sacrifice morally unacceptable.[32]

A similar effect could quite plausibly be found with fetal ultrasound images. Seeing a vivid image of the fetal human in real time may lead viewers toward an intuitive judgment that it would not be acceptable to sacrifice its interests in favor of the interests of others. This explanation seems especially

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[30] Further, Johnson and the non-aborting mothers clearly didn't act unfairly—they were not duty-bound to favor their own interests. (And, as Aristotle argues, it really doesn't make sense to accuse someone of committing an injustice against herself anyway.)

[31] See Kahneman (2011), which provides an accessible summary of his work in dual-process cognition. For an interesting take on its application to moral judgment, see Haidt (2012). For recent developments and critiques of dual-process theory, see, e.g., Evans, Stanovich (2013); De Neys, Pennycook (2019); De Neys (2017); Beary (2022).

[32] Amit, Greene (2012): 862, 866.

likely in a case like that of Abby Johnson, whose shift in judgment occurred upon seeing via ultrasound the actual demise of a fetal human.

Like empathy (and sensation), while "fast," intuitive thinking is an ordinary human phenomenon and generally serves us well, it can occasionally lead us astray, especially when overused.[33] Unfamiliar or difficult situations tend to call for more reliance on our other main type of cognitive process: the explicit and deliberate weighing of information.

Perhaps the most obvious explanation for attribution of moral status to fetal humans is that ultrasound images convey previously unknown (or at least unprocessed) information—reasons or evidence—forming the basis of the new judgment. Thus the viewers may be making ordinary, presumptively rational inferences of the sort we routinely make in response to new information in other contexts—for example, our formation or alteration of beliefs about today's weather upon glancing out the window. Such reason-based inferences, even when made quite quickly, fall into the "slow," deliberate category of cognitive processing insofar as they are conscious and explicit.

What might the new information be in this case? As the quotations in section I suggest, these ultrasound viewers learned that fetal humans resemble more mature human beings: Viewers emphasized seeing faces, arms, legs, and purposive movement. As one pregnant woman summarized *her experience*:

> We were slightly ambivalent before [the ultrasound scan] … I didn't plan on getting pregnant. … But actually seeing [the images] made a very big difference; it was no question after that. … It's suddenly having a conception of what emerging life really is.[34]

In at least some of these cases, then, there seemed to be a conscious inference from something like "this appears to be a living human being" to "this being's moral status is similar to that of other living human beings." Further, as the authors studying the effects of pre-abortion ultrasounds noted, the ultrasound examinations provided information additional to the image itself: particularly gestational age—and increased gestational age was

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[33] See Kahneman (2011), esp. part II.
[34] Black (1992): 49.

associated with increased likelihood of continuing the pregnancy.[35] In such cases, there was very likely an explicit inference from the fetal human's age or level of development to its moral status, or at least to the undesirability of aborting it.

Explicit, reason-based inferences are paradigmatic of rational thought, so the burden of proof falls squarely upon one who would deny the inference's rationality. In the cases we've examined the inferences appear to be from information like the fetal human's features and movement to the conclusion that s/he was "a person," "a living human," "a baby." And such inferences don't seem at all irrational: In fact, they are quite analogous to the automatic judgments we form every day upon encountering moving, human-shaped beings.

IV. Implications and Possible Next Steps

Thus far we have considered several possible explanations for the onset of a belief in the moral standing of fetal humans and/or the impermissibility of elective abortion upon viewing live fetal ultrasound images: (a) empathic response, (b) cognitive bias, or (c) ordinary processing of new information. Under each of these explanations the viewer's judgment is presumptively rational. Our empathic responses are generally reliable and conducive to developing virtues such as justice and benevolence. The viewers' revised judgments likely indicate *overcoming* self-serving or familiarity bias. And, whether the viewers form their new judgments via intuitive cognitive processing or explicit inference, their exercise of these ordinary cognitive processes is presumptively rational. I take this all to be good news, indicating that the use of fetal images to encourage formation of a belief in the humanity of the fetal human does not amount to a manipulative attempt to get others to override their rational judgments.[36]

So where do we go from here? In this final section, we'll consider a few possible avenues for the effective use of fetal ultrasound images: legislation

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[35] Gatter, Kimport, Foster et al. (2014): 86.

[36] For present purposes, I'll take it as obvious that there is something at least ethically suspect about attempting to change people's minds by getting them to abandon reasoned judgment and instead think irrationally. (I will not go so far as to claim that it could never be justified, even in a dire emergency.)

mandating that clinics provide ultrasound images before beginning any abortion procedure, grassroots activism aimed at showing prenatal ultrasound images to the general public, and fundraising efforts to ensure that pregnancy help centers are equipped with high-resolution scanners. First, a disclaimer. The following are the starter ideas and analyses of an academic philosopher with no experience in implementing these sorts of things. If any of my suggestions are worthwhile, I'll have to rely on others to work out the details.

Mandatory Pre-Abortion Ultrasound Provision

Should political pro-life efforts focus on legislation mandating provision and viewing of ultrasound images? On the one hand, assuming abortion is to remain legal in many states, I'm in favor of any reasonable method of reducing its frequency. Further, I think people making medical decisions should be provided with the information relevant to their decision—and the information these images provide is obviously relevant to a decision regarding abortion. So those are two significant points in favor of a "yes" answer: we should focus on ultrasound laws.

On the other hand, though, there are limits to our time, finances, and political capital; given the primary goal of reducing abortions, we have to prioritize the strategies that will likely be most effective. And while that sort of thing is most decidedly not my area of expertise, I do have some statistics on the effects of mandatory ultrasound laws. For example, among over 5,000 women seeking abortions at a Wisconsin clinic, 8.7% chose to continue their pregnancies prior to a 2013 mandatory ultrasound law, compared to 11.2% post-law.[37] And in a study of over 15,000 women seeking abortions at a clinic in Los Angeles, where about 43% of clients voluntarily viewed their ultrasound images, among the 7.4% of women who had reported medium or low certainty about their decision to abort, over three times as many of those viewing the pre-abortion ultrasound images chose to forego the abortion and continue their pregnancies compared with those who did not view the images. But both figures were low: 4.8% of viewers declined abortion versus 1.3%

[37] Upadhyay et al. (2017). Researchers found this statistically significant effect to be impacted by gestational age and the mother's financial situation; selective qualitative follow-up interviews suggested decision certainty was also a factor.

of non-viewers (or about 23 versus 8 live births). (Among the 85.4% of women who reported high certainty, viewing the ultrasound images did not make a statistically significant impact on their decisions.)[38]

Zooming out to the effect on statewide abortion numbers, although I'm not able to find figures on the effect of mandatory ultrasound image viewing specifically, the available statistics suggest that informed consent requirements more generally reduce a state's overall abortion rate by about 7%; for comparison, we'll note that Medicaid abortion funding restrictions reduce abortion rates by 8-9% and parental involvement laws reduce abortion rates by about 4% (or 15% for minors).[39] So while the effect of ultrasound viewing is (as I said earlier) not negligible, I hope that this effect size isn't the best we can do. A related consideration is that requiring ultrasound scans does increase the cost of providing abortions—which may have a longer-term impact on abortion rates. I'll leave it to the legal and political experts to compare the success of ultrasound laws to other promising legal strategies.

Providing Free Ultrasounds via Pregnancy Care Centers

Just this morning, an email landed in my inbox soliciting (and promising a match for) donations to provide free high-resolution ultrasounds in mobile pregnancy clinics. It came with a story of a young woman who walked past such a mobile clinic—a staff member who happened to be outside asked the woman if she needed a pregnancy test. Although the woman replied that she just needed information about how to get an abortion, she agreed to a free ultrasound exam. During the scan, she saw a perfectly formed fetal human moving around and rubbing his eyes with his little fists. The mother exclaimed, "Oh my! It's a baby!"—and abandoned her abortion plans.[40]

As I mentioned earlier in this paper, pregnancy care centers describe this sort of response as typical, resulting in only 2–15% of clients choosing abortion even though 30–50% were initially abortion-minded. So, clearly,

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[38] Gatter, Kimport, Foster et al. (2014). The remaining 7.2% of cases were missing decision certainty reports.

[39] New (2011).

[40] Email from Focus on the Family entitled "A Must-Read Testimony," received 6/1/22.

ultrasound images can be quite persuasive in this situation—for the women who come across the right pregnancy centers and accept their services.

So unless the market for these services is already saturated, which seems quite unlikely, directing more funds toward creating pregnancy help clinics and supplying them with high-resolution scanners can be expected to save additional lives. Since research entities like the CDC and the Guttmacher Institute don't collect stats on the results of visits to such clinics, though, I can't even begin to estimate their effect on overall abortion rates or compare that effect to the impact of mandating ultrasound scans in abortion clinics. This may be an area in which a good statistician or social scientist could be of help.

Even without such stats, though, we can point out an obvious advantage of this strategy: it's much more in our control than is state- or federal-level legislation. Those of us who care about this issue can dedicate some of our own resources to it through donations, fundraising, and/or volunteering. Like our political capital, though, our personal resources are of course finite—making comparison of the effectiveness of this approach to other personal, interpersonal, and/or charitable approaches desirable.

Going Public with Ultrasound Images

Speaking of limited resources (and unavailable statistics), a third and final general strategy for pro-life use of prenatal ultrasound footage is making pre-recorded images available to general audiences. Someone with enough money for a Superbowl ad could make a fun follow-up to the wildly popular 2016 Doritos commercial, which NARAL found threatening enough to rant via Twitter about its offense of "humanizing fetuses."[41] Most of us don't have that kind of capital, but pro-life groups can (and some do) place high-resolution images of fetal humans on billboards, posters, and hand-held signs. And many of us with captive audiences in our classrooms have valid reasons to show these images to our students as well. For example, when discussing reproductive technologies or abortion in my ethics classes, I routinely put helpful information about prenatal development—including ultrasound images—in my PowerPoint slides. (I haven't added videos yet; maybe I should.) Those who teach classes in human biology or

[41] McCarthy (2016).

developmental psychology probably have good reasons to use such images as well.

Can we measure the effect of exposure to still and/or recorded ultrasound images on the general, non-pregnant public? For example, I've occasionally wondered whether a good survey about views regarding fetal humans could be given before and after courses using these images. (And maybe the same survey could be given in non-image-using control courses?) Although I'm not a social scientist, I'm just informed enough to know that getting reliable stats would be a daunting task, requiring a good survey instrument, enough willing instructors, and enough students for a large sample size, as well as the ability to isolate the effect of the images from other variables. Can it be done? I don't know. Could we start with something less ambitious, like the studies I mentioned earlier of expectant parents with the open-ended questions about how viewing the images affected them? (Even undergrads could run a study like that, I think, and I'd be curious to see how it came out.) Is there an in-between, moderately ambitious study that the social scientists among us can devise?

Conclusion

In this paper I've argued that viewing live footage of prenatal ultrasound scans can have a significant impact on people's perception of fetal humans and on women's abortion decisions—and that this impact appears to be due to presumptively rational responses such as increasing empathy, overcoming cognitive biases, and making inferences about the fetuses' humanity based on the information the images provide. I've also sketched a few responses to the effectiveness of ultrasound images: legislative efforts to require pre-abortion ultrasound scans, fundraising efforts to provide the scans via pro-life pregnancy care centers, and organizational and individual efforts to show ultrasound images or recorded video to the general public—but, as I warned you up front, these are just the starter assessments of a philosopher. I now invite the rest of you, with your varied expertise and life experiences, to help assess the merits of these approaches, propose additional strategies, and fill in the details.

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