Center for Bio-Ethical Reform

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Dear Pro-Life Supporter,

The Center for Bio-Ethical Reform (CBR) has produced a series of four new prenatal development images. Depicting two embryos and two fetuses, the pictures detail the remarkable complexity of real babies, alive in the uterus, at seven, eight, nine, and ten weeks following fertilization. We have enclosed printed copies of these images because our donors played a major role in enabling us to develop these pictures. Digital versions can also be downloaded from our website at www.AbortionNO.org/prenatal. We hope you will post them on social media and pray they will go viral.

A high percentage of abortions occur between seven and ten weeks and for many mothers, their preborn child's resemblance to a newborn can be a significant factor in deciding whether to abort. That issue was a focus of an important paper published by the late Thomas Strahan in 2002. Tom was a pro-life attorney and writer and he was a good friend of CBR. He made a substantial contribution to the pro-life movement.

The paper was titled "Misrepresentation and ignorance of prenatal development as a factor in psychological injury following induced abortion." The paper concludes that:

> The misrepresentation of the stage of development of fetal life by counselors in abortion clinics or on forms provided to the women at the time of abortion appears to be substantial and widespread. No knowledge on fetal development is required of abortion counselors in standards developed by the National Abortion Federation, in abortion-counseling articles or in medical textbooks describing the practice of abortion. However, information on this subject is relevant and material to a decision regarding childbirth or abortion, and it has been shown that such information can make a difference in decision-making.
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> Many women may be ignorant about fetal development … [and therefore] there is a need for comprehensive information on the subject, as part of the requirement of informed consent. Many women who are provided false or misleading information on fetal development report this to be a significant factor in subsequent emotional and psychological distress following induced abortion.

It also quotes the majority opinion in *Central Missouri v. Danforth*, (1976), which allowed states to require that mothers certify in writing that they had given informed consent to abortionists prior to their terminations. The Court ruled it "imperative" that consent be given with "full knowledge" of abortion's "nature and consequences."

Any intellectually honest definition of "full knowledge" must include pictures to describe what no words could ever be adequate to describe. In that connection, the Court ruled in Planned Parenthood v. Casey (1992) that the states could require that mothers be given "an opportunity to see materials [including pictures] designed to inform her of the probable anatomical and physiological characteristics of the unborn child …." As a Pennsylvania state legislator, I was a prime sponsor of the informed consent bill which

preceded *Casey*. It was litigated in the Supreme Court case of Thornburgh v. American College of Obstetrics and Gynecology (1986). A major limitation in the effectiveness of both bills was our inability to mandate that mothers actually view our prenatal pictures. Abortionists were able to offer our images in ways which greatly reduced the odds of mothers agreeing to see them. We have spent the intervening decades working to expose the majesty of prenatal development and the horror of abortion whether or not mothers wanted to see either. Our new prenatal image signs augment our already widely used abortion photo signs to accomplish those purposes.

CBR's embryo and fetus pictures are derived from many smaller images "stitched" together in much the same manner NASA uses to combine satellite photo "tiles" to form a large "mosaic."

ENDOSCOPES: The Center for Bio-Ethical Reform's (CBR) human embryo and fetus imagery was initially derived by teams of physician researchers and clinicians employing endoscopy (and its subsets, embryoscopy and fetoscopy) to diagnose and treat prenatal disorders *in utero*. Endoscopes are medical imaging devices which permit the minimally invasive, high resolution observation of tissues inside the human body. At the distal end of these instruments is an objective lens designed for imaging. At the proximal end is an eyepiece, or sensor, which enables viewing.

HOW THEY WORK: These scopes generally consist of a tube which encloses a relay lens system (in rigid endoscopes) or a fiber bundle (for fiber-optic, or flexible, endoscopes) for illumination and to transmit an image from the objective lens inside the body to the proximal end outside.

Said differently, endoscopes use optical elements to direct light to the area sought to be illuminated and transmit the resulting image to the eye or detector. Rigid endoscopes generally offer superior resolution or magnification. But an endoscope's objective lens is only approximately 1/5 of an inch in diameter, and this relatively small size substantially narrows the observer's field of view (even with the addition of supplemental lenses such as "negative" or "prism" optics, etc.).

CONSTRAINTS: This limitation is further compounded by the need to use the scope in very confined spaces, with only short distances separating the objective lens from the anatomical structures being imaged. As a consequence, only a small segment of the embryo or fetus is observable at any point along the timeline of the scan. An endoscope's construction must also accommodate frequently conflicting design considerations. The resulting compromises can involve not only fields of view, but depths of field (meaning thickness of the plane of focus) and image illumination and magnification, as well as distortion issues (i.e., stretched or compressed perspective), etc.

WORK-AROUNDS: So to depict a high quality, single image of the entire embryo or fetus, large numbers of smaller, more detailed pictures must be joined together in a manner suggestive of the process by which puzzle pieces are assembled to form a completed picture.

This technique employs a complex proprietary process which combines segmental scans to create a final composite image. The resulting picture is digitally adjusted to preserve each segment's original color, resolution, contrast, illumination, etc. Technicians also correct for vignetting (image degradation or loss at the periphery of the frame).

MAGNETIC RESONANCE IMAGING & ULTRASOUND: Our process resembles the image enhancement process described in the British medical journal *Lancet* which recently published a prenatal magnetic resonance imaging (MRI) study involving the creation of 3D pictures to diagnose and treat congenital heart problems afflicting fetuses still in the uterus. The BBC reports that "A series of 2D pictures of the heart are taken from different angles using an MRI machine" to image the fetus.

The story explains that "Sophisticated computer software pieces the images together, adjusts for the beating of the heart and builds … [a] 3D image of the heart." A pediatric cardiologist describes the resulting 3D images as "beautiful."

This MRI research is part of a fetal diagnostic project which is also exploring scans using "four ultrasound probes at the same time – current scans use one – to get a more detailed picture." This process produces a more wholistic composite image.

NASA COMPOSITE IMAGERY (SINGLE MEDIUM): CBR's imaging process is also conceptually similar to the technologies used by the National Atmospheric and Space Administration (NASA) to produce wide-area satellite images of the earth's surface. Until the launch of the Deep Space Climate Observatory Satellite (DSCOVR), which now orbits one million miles from the surface, NASA had no camera positioned sufficiently far from earth to capture the entire globe in a single photograph. As previously noted, an endoscope's objective lens must also operate too near to an embryo or fetus to permit its whole anatomy to be imaged in a single frame. This is the same constraint which complicates the capture of satellite imagery. Previous pictures of the earth could, therefore, only be created using digital stitching technology to make one large composite image from smaller segments. Scientists sometimes describe this final image (or "data set") as a "mosaic," comprised of many individual "tiles."

HYBRID IMAGERY (MULTI-MEDIA): A satellite picture can also be augmented by aerial photography (cameras on aircraft platforms) to improve image resolution. Hybrid images of this sort can be created by superimposing black-and-white imagery (for still higher resolution) over color pictures of the same area, the latter to optimize chromic (color) fidelity.

The scientific press, for instance, reports that the Landsat Image Mosaic of Antarctica (LIMA) "combined over one thousand precise, calibrated satellite images with other data from the continent's surface to create a single picture of the entire continent." The high magnification factor (think telephoto lenses which enlarge image features) of each of these puzzle pieces yielded a composite picture depicting more detail than would have been visible in a single photo shot with a wide-angle lens.

APPLICATIONS: NASA uses this mosaicking process to image celestial bodies of nearly every description. The Juno spacecraft made composite images of Jupiter; InSight of Mars; Cassini of Saturn; and Hubble of the Sombrero Galaxy.

So an exquisite depiction of a challenging subject, whether prohibitively small or large, near or far, may involve vastly more complexity than meets the eye of the casual observer.

WHERE DO WE GET THESE PICTURES: We hope that question will be answered by our sources themselves. We are trying to stimulate a better informed discussion of life before birth and we encourage our image sources to join that conversation – not least because they are immensely talented professionals with fascinating stories to tell. But everyone has the right to decide for themselves whether and to what extent they wish to participate. We must respect those decisions.

WHAT CONSIDERATIONS MIGHT INFLUENCE PARTICIPATION DECISIONS: Everyone will obviously bring their own unique perspectives to those kinds of questions, but any treatment of prenatal development is a conversation with implied relevance to elective abortion.

Science has sadly become so politicized that professionals in the sciences, medicine, education, etc., are increasingly cautious in their navigation of environments which can be treacherous for those whose views deviate from orthodoxy. "Climate science," for instance, is only one of the many disciplines which can be fraught with professional peril for those who espouse politically incorrect points of view. Professionals

perceived to be even slightly outside the mainstream of "settled science" (an oxymoron in its own right) can be shunned or boycotted and encounter opposition in securing research grants, career promotions, publication of papers, and even employment itself. Pressures of these sorts enforce group-think and stifle rigorous scientific inquiry. Discussing abortion can be even more perilous.

TWO SETS OF RULES: Few, if any, observers would be particularly curious about the identities of the astrophysicists, astronomers or cartographers involved in a NASA satellite mapping project. From a political perspective, the contours of the lunar landscape are relatively inconsequential. But the appearance of the embryo and early fetus can have profound public policy implications. The public display of prenatal imagery can, therefore, seem provocative and even threatening to some.

An outdoor urban exhibit of CBR's seven-week embryo photo sign has, for example, repeatedly attracted abortion rights protestors who systematically attempt to obscure these images with tarps and bed sheets. A physician involved with the displays of this image was recently forced to retain legal counsel to defend against a formal complaint filed against him with the medical governing board in the Western democracy in which he practices medicine. His use of this living embryo sign to educate passersby regarding prenatal development was a stated basis for the ultimately unsuccessful attempt to secure his censure and the suspension or even revocation of his license. Assaults of this sort on expressive rights chill the willingness of other professionals to challenge the often unwise conventional wisdom.

THE END OF PUBLIC DISCOURSE: These and many other examples of censorship and persecution help explain the public reticence of professionals whose convictions are likely to be disfavored by powerful establishment elites. CBR's presence on university campuses is increasingly the only hope students have of seeing and hearing the truth about prenatal development and abortion. We often have to threaten lawsuits to gain access to public spaces on public university campuses, and private Christian schools virtually never give us permission to come onto their property. At public universities, pro-life students are increasingly unwilling to sponsor our visits and when we come anyway, they often turn out to protest our presence because our exhibits involve graphic photo signs. These are usually Christian students who are afraid that our presence will attract persecution by which they will also be victimized.

These students are the proverbial "canaries in the coal mine" because as regards abortion, their cowardice usually mirrors the craven anxiety exhibited by the churches in which they were raised. We are going to begin to display our new living embryo and fetus pictures outside churches whose pastors are leading their congregations away from the abortion wars. Developing these images was immensely expensive and displaying them will also be costly. Please help us defray these expenses. We are doing vital work few other pro-life groups are able or even willing to undertake. Look at the photo cards we have enclosed in the envelope in which this letter was mailed. Pray about helping us get these inspiring images into the heads and hearts of Christian congregations from coast to coast.

Lord bless,

Gregg Cunningham
Executive Director