

Bias and Censorship in the AMWA Journal

Lack of Balance in Reporting on Embryonic Stem Cell Research

Charol Abrams

Abstract. In response to reports on embryonic stem cell research in the *AMWA Journal*, the official publication of the American Medical Writers Association, the author submitted a brief article discussing ethical objections to such research. The *Journal* editor rejected the article, saying the *Journal* was not an appropriate place to discuss the ethics of stem cell research. The author challenged this reasoning because the *Journal* is committed to informing members about relevant ethical issues, ethics were mentioned in one of the original reports, and related ethical concerns were discussed in a previous issue. Further efforts to secure balanced reporting failed. Concerned professionals should be aware of the AMWA bias. *National Catholic Bioethics Quarterly* 8.4 (Winter 2008): 639–654.

Opponents of embryonic stem cell research can usually describe the basic ethical concerns associated with this technology. They also recognize the need to work against this research, especially in the voting booth and in their efforts to help family members understand and, whenever possible, act on these same concerns. When

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TABLE 1. Mission Statements of the AMWA and *AMWA Journal*

<p>AMWA</p> <p>"The mission of the American Medical Writers Association is to promote excellence in medical communication and to provide educational resources in support of that goal. Through an extensive educational program, various publications, and unparalleled opportunities for networking, AMWA encourages and enables its members to extend their professional expertise."</p>
<p><i>AMWA Journal</i></p> <p>"The AMWA Journal expresses the interests, concerns, and expertise of members. Its purpose is to inspire, motivate, inform, and educate them. The Journal furthers dialog among all members and communicates the purpose, goals, advantages, and benefits of AMWA as a professional organization. Specifically, it functions to</p> <ul style="list-style-type: none"> • Publish articles on issues, practices, research theories, solutions to problems, ethics, and opportunities related to effective biomedical communications • Enhance theoretical knowledge as well as applied skills of biomedical communicators in the health sciences, government, and industry • Address the membership's professional development needs by publishing the research results of educators and trainers of communications skills and by disseminating information about relevant technologies and their applications • Inform members of important biomedical topics, ethical issues, emerging professional trends, and career opportunities • Report news about AMWA activities and the professional accomplishments of its departments, sections, chapters, and members"

NOTES: AMWA mission statement is shown here as it appears in October 2008 on the home page of the AMWA Web site, at <http://www.amwa.org>. The *AMWA Journal* mission statement shown here appears in a 2003 message from the *Journal* editor to AMWA members: Lori Alexander, "It Takes a Village," *AMWA Journal* 18.1 (2003): 1–2.

reasonable circumstances or opportunities arise in their professional lives, they must also try to do whatever they can to share information that can help colleagues understand and support these same perspectives. While such efforts may not always be fruitful, they remain important, especially in professions that involve science or medicine, which both relate directly to stem cell biotechnology.

Every citizen should be as well informed as possible regarding the ethical problems surrounding embryonic stem cell research, but this responsibility is even greater for medical communicators. Their lack of understanding and silence about this issue can (with or without their knowledge, directly or indirectly) facilitate the unethical procedures involved in embryonic stem cell research, by which human beings in their embryonic stages are killed for research purposes. I am a Catholic clinical labora-

tory scientist in the Archdiocese of Philadelphia, and a medical writer and editor. I have recently encountered a problem in a professional forum while trying to address relevant aspects of ethical concerns involving embryonic stem cell research.

For the last sixteen years, I have been satisfied with the services provided by my membership in the American Medical Writers Association (AMWA), whose mission is to “promote excellence in medical communication and to provide educational resources in support of that goal.”¹ The organization also encourages and enables its members to extend their professional expertise (Table 1).

Although AMWA is a relatively small organization, with approximately fifty-five hundred members, it serves a key group of professionals to whom the truth about the ethics of embryonic stem cell research must be clearly communicated. Its members work for many commercial and nonprofit organizations and companies nationwide. They write and edit content for many types of documents, including continuing education materials for a wide range of medical professionals; regulatory documents for the pharmaceutical, biotechnology, and medical-device industries; advertising and promotional pieces for medical and research organizations; patient-education materials; textbooks; and journal articles. They are thus the tip of the sword when communicating medical endeavors, including all aspects of stem cell research, ethical and unethical. The final products of their work often reach many readers throughout the nation and the world.

I recognize and respect the importance of our medical writing and editing, and I appreciate the benefits of being an AMWA member. I was thus surprised when, in 2007, the AMWA censored my efforts to address misleading information that had been published in the *AMWA Journal* about embryonic stem cell research.

The Scenario

In the “Chapter Corner” forum of a 2006 issue of the *AMWA Journal*, two chapter-conference reports summarized speaker presentations about embryonic stem cell research.² The content of the reports reflected the perspectives of the conference speakers as well as the authors of the reports. While such perspectives can be legitimate in a document, the two reports did not include enough basic scientific information to permit medical communicators to evaluate the ethical concerns about embryonic stem cell research either in general or as related to the content of the previously published reports.

¹Information about the American Medical Writers Association is available on their Web site, at <http://www.amwa.org>.

²R. Levy, “Stem Cell Research Is Focus of Key Speakers at the Northern California Chapter Conference, Key note Address,” *AMWA Journal* 21.2 (2006): 91–92, and Catherine Magill, “Stem Cell Research Is Focus of Key Speakers at the Northern California Chapter Conference, Plenary Session,” *AMWA Journal* 21.2 (2006): 92–93. The Magill report is available online at http://www.cmagill.com/yahoo_site_admin/assets/docs/NC_Chapter_Plenary-final.70233635.doc.

The conference speakers quoted in the reports were professionally involved in embryonic stem cell research, so their specific reasons for communicating a biased perspective were obvious and expected. However, the AMWA members who wrote the reports complied, knowingly or unknowingly, with the speakers' objectives.

The information in these two reports concerned me. I believed then, as I do now, that they did not honestly, fairly, or adequately address the topic or truly serve *Journal* readers. Balanced and accurate information on this issue is crucial for AMWA members. Although many members have at least one advanced degree in a medical or scientific specialty, others have a degree in some aspect of communications and little or no formal education in science or medicine. A basic understanding of the biology and ethics related to embryonic stem cell research is crucial for the latter group. Indeed, even members with a medical or science background should review these basics for two major reasons: First, during academic formation in biology, a medical scientist might never consider, or might prematurely dismiss, the important ethical concepts supporting the reality that every stage of human development, from conception onward, is a stage of life for a living child. Second, this scientist might continue to dismiss ethical concepts or rationalize unethical decisions made to justify research aiming to produce new medical treatments or possible cures.

After considering the problems described above, I wrote an article which attempts to clarify the misinformation in the published reports, by discussing basic biological concepts and related ethical concerns. I submitted the article for publication in the *AMWA Journal*, and it was rejected—but not for reasons of quality. Rather, *Journal* editor Lori Alexander informed me that articles about this topic are not accepted for publication, even though the reports that occasioned my concern had already been published in the *Journal*. The editor rejected my article again after I modified it for two other *Journal* formats: as a letter to the editor and as an opinion piece for the *Journal's* "Sounding Board," a forum for members' views on topics relevant to medical writing and editing.³ The unedited "Sounding Board" submission appears in the appendix at the end of this essay.

I do not personally know anyone involved in the decision to reject my submissions; I do not wish to criticize anyone or impugn motives. Nonetheless, the reasons given for rejecting my submissions were disingenuous and journalistically unethical, whether by intention or not.

The Editor's Objections

Initially, the *Journal* editor informed me that "the primary goal of the *AMWA Journal* is to educate AMWA members about topics in medical communication."⁴ However, the *Journal's* mission statement begins by describing the *Journal* as a forum for expressing "the interests, concerns, and expertise of members. Its pur-

³The *AMWA Journal's* instructions for contributors are available at <http://www.amwa.org/default/publications/journal/journalinstructions.pdf>.

⁴Lori Alexander, e-mail message to Charol Abrams, September 14, 2007.

pose is to inspire, motivate, inform, and educate them. The *Journal* furthers dialog among all members.”

There is no “primary goal” stated anywhere in the *Journal* mission statement, but this so-called primary goal was the editor’s first reason for rejecting my submission. When the editor rejected an article opposing embryonic stem cell research, she contradicted the specific components of the mission statement, namely, that the *Journal* is a forum to express “the interests, concerns, and expertise of members,” to “inform . . . and educate,” and to further “dialog among all members.”

In the same correspondence, the editor also informed me that “the *Journal* is not an appropriate forum for a discussion of the ethics of stem cell research, and manuscripts on that topic are not accepted.” This response was also disingenuous and inaccurate for three reasons: (1) ethics are important for AMWA members, (2) recent precedent existed for discussing embryonic stem cell research in the *Journal*, and (3) earlier precedent existed for discussing the ethics of a closely related topic in the *Journal*.

First, ethics are part of the *Journal*’s mission statement, which indicates that the *Journal* specifically functions to “publish articles on . . . *ethics* . . . related to effective biomedical communications” and to “inform members of important . . . *ethical issues*” (emphasis added).

Second, the ethics of embryonic stem cell research specifically were certainly not in view when the mission statement was developed. However, in 2006, the editor permitted this topic to be discussed in the *Journal* when she published the two “Chapter Corner” reports, which included limited and partially distorted comments on the ethics of embryonic stem cell research. In fact, subheadings in one of those reports included “Ethics” and “What Makes a Human?”⁵ Perhaps the primary purpose of the reports was to describe what was happening in a particular AMWA chapter, but the *Journal* editor obviously considered the research itself interesting and relevant enough to be published. It is also noteworthy that these reports covered only the details of the embryonic stem cell research and related ethical information that were discussed at the conference. No other details of the chapter conference (such as who and how many people attended or what else transpired) were described. Given that the reports included incomplete scientific and ethical information, it would be only reasonable to devote additional publication space to clarifying these aspects of embryonic stem cell research as they relate to medical communicators.

Third, a previous editor of the *Journal*, Robert Jacoby, considered the ethics surrounding life issues to be an important topic for *Journal* readers, and set an even earlier precedent in 2001 by publishing an editorial discussing ethics relating to the earliest stages of life.⁶

⁵Magill, “Stem Cell Research Is Focus of Key Speakers.”

⁶R. Jacoby, “Let’s Begin: When Is a Human Being a Human Being?” *AMWA Journal* 16.4 (Fall 2001): 1, <http://www.amwa.org/default/publications/journal/editorial164.htm>.

The AMWA President Supports the Editor

I tried to address my concerns to the *Journal* editor directly and diplomatically, but she would not reconsider her decision. I also received an e-mail message from the then-president of AMWA, Sue Hudson, saying that “the AMWA Journal cannot possibly provide every member a platform from which to express her or his points of view on every issue of importance to that member. This is not bias or censorship; it is editorial judgment.”⁷

I was not informed in advance, nor did I ever receive official written or verbal notice, that President Hudson had been contacted about my concerns. I know only that her message arrived unsolicited, without my foreknowledge and without my having contacted her. I realize that AMWA officials were probably satisfied with many aspects of the *Journal* editor’s work, and AMWA policy for the *Journal* is probably that the editor’s decisions regarding content are final. However, when the editor’s final decision is clearly biased, as evidenced by the reasons discussed above, then censorship masquerades as editorial judgment. Bias and censorship regarding a specific topic violate journalistic ethics; thus, the editor’s decision cannot remain unquestioned. President Hudson’s response perpetuates the editor’s bias and censorship.

My submission to the *Journal* is not simply my personal opinion about embryonic stem cell research, as President Hudson suggested. Individuals generally either oppose or support this technology on the basis of their understanding, or lack of understanding, of the ethical issues involved. The content of my submission to the *Journal* directly opposes the previous Levy and Magill articles and is substantiated by facts. President Hudson’s response is also incongruous with both the *Journal* mission statement about furthering dialogue among all members and with the status of the *Journal* as the primary forum for this dialogue in the AMWA at the national level.

In her e-mail message to me, President Hudson suggested that I upload my *Journal* submission to the AMWA bulletin board, a forum in which she says members “can express their opinions and share their ideas about topics of interest to the profession.” This was an unacceptable alternative, because the bulletin board exists at a lower level of communication than the AMWA’s official journal, where the original reports about embryonic stem cell research appeared. Also, the bulletin board is accessed by only a handful of members. In any given month from April 2007 (when the AMWA bulletin board postings began) through September 2008, only three or four members, on average, communicated through this AMWA feature.⁸ When one compares this number with the approximately 5,500 members who receive the *Journal*, it is apparent that if I chose this online approach, then only a small percentage of AMWA members (approximately 0.06 percent per month) could ever possibly read the information needed to correct and balance the previous *Journal* reports.

⁷Sue Hudson, e-mail message to Charol Abrams, November 20, 2007.

⁸The AMWA Bulletin Board is available (to members only) on their Web site, at <http://listserv.amwa.org/archives/bulletin-board.html>.

Furthermore, the bulletin board is not the forum in which AMWA would normally publish information about other important topics for medical communicators, especially topics that have been previously discussed in the *Journal* itself.

All Available Channels

Each time the editor dismissed my concerns, I used every possible organizational channel to appeal the decision. Finding and using these channels was difficult, because no formal process for appealing editorial decisions or policies is apparent from information available for members online or in print about the AMWA organizational structure. Such an appeal process is, however, recommended by both the Committee on Publication Ethics in the United Kingdom in their code of conduct for editors of biomedical journals, and by the Council of Science Editors in their white paper promoting integrity for scientific journals.⁹

Shortly after the editor and I began corresponding about this impasse in 2007, she presented the issue to the Executive Committee, a decision-making body for AMWA. The EC comprises national and chapter officers and permanent AMWA officials. I do not know how much information the editor presented to the EC; her follow-up to me stated only that the “publications administrator” had upheld her decision,¹⁰ although this publications administrator was never identified. I was never invited to present my concerns to the EC either in person or in writing. I also received no written or verbal feedback about the discussion or the reasons for the final decision. I do not know whether the EC was informed of either my reasons for considering the ethics of embryonic stem cell research to be an important and relevant topic for discussion in the *AMWA Journal* or my reasons for concern about the outright rejection of a paper on this topic.

I tried to contact the EC directly with my concerns, but no protocol exists for this purpose. My efforts were thwarted first by President Hudson and then by other AMWA officials, including the Executive Director, Donna Munari, who did not respond to two brief e-mail inquiries about this issue.¹¹ Instead, she handed the matter back to President Hudson, who again dismissed my concerns.¹² It seems that no AMWA official wants to assure members that the ethical questions raised by embryonic stem cell research are covered fairly, accurately, and adequately in the *Journal*.

⁹ Committee on Publication Ethics, “A Code of Conduct for Editors of Biomedical Journals: A Suggested Code of Conduct for Editors to Guide Them toward Being Fair to Authors, Researchers, and Readers” (January 2005), <http://www.publicationethics.org.uk/guidelines/code>. D. Scott-Lichter and the Editorial Policy Committee, Council of Science Editors, *CSE’s White Paper on Promoting Integrity in Scientific Journal Publications* (Reston, VA: CSE, 2006), 27, http://www.councilscienceeditors.org/editorial_policies/white-paper/entire_whitepaper.pdf.

¹⁰Lori Alexander, e-mail message to Charol Abrams, November 12, 2007.

¹¹Charol Abrams, e-mail messages to Donna Munari, June 17 and June 24, 2008.

¹²Sue Hudson, e-mail message to Charol Abrams, June 24, 2008.

We Need Balance to Understand the Truth

Medical writers and editors must always try to communicate accurate and ethical information. When the *Journal* editor published the Levy and Magill reports, she set a precedent for publishing information about embryonic stem cell research. This information was biased in support of this research and, by example, thus tacitly approved medical reporting with a similar bias. At the very least, journal space should be given to information that accurately explains the ethics-related opposition to embryonic stem cell research, since balanced content is essential, not incidental, to medical writing and editing. If medical communicators do not consider the ethical problems associated with embryonic stem cell research or other controversial biotechnologies, then we become indirectly complicit in immoral practices, because our writing and editing communicates (and thus partially facilitates) cutting-edge research that carries ethical implications. If the subjects of the research were either young children who lived in an orphanage or slaves instead of children in an embryonic stage of development, then the ethical implications would perhaps be more obvious.

I have tried to be optimistic, empathetic, and realistic during my interactions with all parties involved in this important disagreement. Thus, it is essential to repeat: I describe my observations and conclusions in this matter without impugning motives. All publication editors assume challenging responsibilities, including the need to follow an established code of ethics, and elected and appointed AMWA personnel usually work hard to meet members' needs and fulfill their requests. However, I firmly believe that when the *Journal* editor decided to prevent publication of additional articles about embryonic stem cell research, she failed, deliberately or not, to uphold the AMWA Code of Ethics (Table 2). Her decision specifically violates principles 2 and 3 of the code, which state respectively that "biomedical communicators should apply fair balance while conveying pertinent information in all media" and that "biomedical communicators should write, edit, or participate in the development of information that meets the highest professional standards. . . . They should attempt to prevent the perpetuation of incorrect information."

I also try to strike a wise balance between focusing on my own projects and speaking out when necessary. In speaking out about embryonic stem cell research, I responded unintentionally to the *Journal* editor's call for topic suggestions in 2003, which invited members to "write to comment on the *Journal*—good or bad. Help me to reshape the *Journal* into a publication that truly meets the needs of AMWA members."¹³ Her request is consistent with my efforts in submitting the original essay to the *Journal*, in revising it to comply with other suitable *Journal* formats in hopes that it would be accepted for publication, and in seeking to express to the EC my concerns about the bias and censorship that were evident in the editor's rejection of these submissions.

¹³Lori Alexander, "It Takes a Village," 2.

TABLE 2. The AMWA Code of Ethics

<p><i>Preamble</i></p> <p>The American Medical Writers Association (AMWA) is an educational organization that promotes advances and challenges in biomedical communication by recommending principles of conduct for its members. These principles take into account the important role of biomedical communicators in writing, editing, and developing materials in various media and the potential of the products of their efforts to inform, educate, and influence audiences. To uphold the dignity and honor of their profession and of AMWA, biomedical communicators should accept these ethical principles and engage only in activities that bring credit to their profession, to AMWA, and to themselves.</p>
<p><i>Principle 1</i></p> <p>Biomedical communicators should recognize and observe statutes and regulations pertaining to the materials they write, edit, or otherwise develop.</p>
<p><i>Principle 2</i></p> <p>Biomedical communicators should apply objectivity, scientific accuracy and rigor, and fair balance while conveying pertinent information in all media.</p>
<p><i>Principle 3</i></p> <p>Biomedical communicators should write, edit, or participate in the development of information that meets the highest professional standards, whether or not such materials come under the purview of any regulatory agency. They should attempt to prevent the perpetuation of incorrect information. Biomedical communicators should accept an assignment only when working in collaboration with a qualified specialist in the area, or when they are adequately prepared to undertake the assignments by training, experience, or ongoing study.</p>
<p><i>Principle 4</i></p> <p>Biomedical communicators should work only under conditions or terms that allow proper application of their judgment and skills. They should refuse to participate in assignments that require unethical or questionable practices.</p>
<p><i>Principle 5</i></p> <p>Biomedical communicators should expand and perfect their professional knowledge and communications skills.</p>
<p><i>Principle 6</i></p> <p>Biomedical communicators should respect the confidential nature of materials provided to them. They should not divulge, without permission, any confidence, patent, proprietary or patient information.</p>
<p><i>Principle 7</i></p> <p>Biomedical communicators should expect and accept fair and reasonable remuneration and acknowledgment for their services. They should honor the terms of any contract or agreements into which they enter.</p>
<p><i>Principle 8</i></p> <p>Biomedical communicators should consider their membership in AMWA an honor and a trust. They should conduct themselves accordingly in their professional interactions.</p>

NOTE: The AMWA Code of Ethics is available online at <http://www.amwa.org/default.asp?Mode=DirectoryDisplay&id=114>.

My goal was for the *Journal* to strike a proper balance to the original reports by publishing accurate clarifications (mine or someone else's) about ethical objections to embryonic stem cell research. This goal is consistent with the *Journal's* mission statement, and a reasonable editorial decision would help inform AMWA members about the ethical concerns related to the information that they communicate.

Poor Quality? Choose Another Author

Although my *Journal* submission was certainly not ready to print, its quality was likely to have been at least minimally adequate for publication in the *Journal*, and its content and format were suitable at minimum for the "Sounding Board" column. (See appendix.) The text attempts to present general ethical information about embryonic stem cell research that is relevant for medical communicators while using as examples information published previously on this topic in the *Journal*. Members of the scientific community and the general public remain concerned about this research, and the topic certainly remains timely and relevant for medical communicators.

Even if my submission was hopelessly substandard, the *Journal* needs to publish at least one accurate article describing the ethical reasons why medical communicators should consider avoiding projects that involve or promote embryonic stem cell research. Given that the editor did not accept my submission, I sincerely urged her to find another author to develop an article with the same ethical perspective for medical communicators.¹⁴ But this request has still gone unacknowledged and has not been acted on to date. This silence and inaction reflect editorial bias rather than a lack of qualified authors, because there are many excellent speakers and writers who can cogently describe and explain the important ethical concerns about this research as they relate to medical communications. If my submission was inadequate, then surely other AMWA members or guest authors can contribute to this endeavor.

Appropriate Vigilance

An organization representing medical communicators in countless professional roles should be especially vigilant about educating its members regarding important facts and ethical objections pertaining to particular topics, including embryonic stem cell research, and thereby help members form legitimate and truthful conclusions. Unfortunately, this vigilance is not being practiced in the AMWA. Members and other professionals should be aware that at least one important science-related communications organization tolerates bias against the truth surrounding ethics related to embryonic stem cell research.

I value my AMWA membership. Thus, I would welcome a reversal of AMWA's decision to prevent publication of an article that balances previously published material in the *Journal* regarding embryonic stem cell research. If medical writers and editors are to avoid "the perpetuation of incorrect information" noted in principle 3

¹⁴Charol Abrams, e-mail message to Lori Alexander, May 19, 2008.

of the AMWA Code of Ethics, we must understand and address all the important factual and ethical aspects of what science reveals and we communicate—in the *Journal* and elsewhere. This truth helps us apply scientific and medical knowledge with integrity so that all people truly “might have life and have it more abundantly” (John 10:10).

APPENDIX:

**Manuscript Submitted for Publication
in the *AMWA Journal***

The following pages contain the unedited manuscript that Charol Abrams submitted in 2007 to the *AMWA Journal* for publication in its “Sounding Board” section. The author thanks Michael Altus, Ph.D., E.L.S., for many helpful comments during preparation for this submission. A revised version of the paper, available from the author, includes updated information on recent findings about induced pluripotent stem cells.

Incomplete facts lead to erroneous ethical conclusions

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A well-known AMWA member, Tom Lang, reminds us that "...publication is the final stage of research"¹. From this statement, we can also conclude that each medical writer and editor participates in that research when preparing relevant content for publication. In the process, the medical writer or editor contributes to both the outcome and the ethical implications surrounding that area of research. Our contributions vary, of course; they can be large or small, direct or indirect.

Sometimes medical writers and editors are unaware of the societal effect(s) surrounding the ethical implications of the research to which we contribute. Yet these effects can be important for countless people - maybe even our loved ones or ourselves. Therefore, we must learn as much as possible about the ethical issues of research that are relevant for medical writers and editors so that we remain professionals with the highest ethical standards. We must call upon our professional organizations and their publications to serve us in this endeavor. This requires that all relevant perspectives be considered when evaluating any important area of controversial research.

For example, previous articles in the *AMWA Journal*^{2,3} reported on various issues surrounding the use of embryonic stem cells for medical research. Implicit in these articles is the premise that embryonic stem-cell research is ethically acceptable, but that perspective is not unanimous. While many AMWA members might be aware of controversy surrounding this research as discussed on many levels in the general media, let's examine some specific concerns as they relate to various concepts described in previous *Journal* articles.

Everyone undergoes countless changes during a lifetime. Some changes can be easily identified and described; others are more subtle or remain unidentified even in our medical-research laboratories. Although we are everchanging, one factor remains the same. As a previous AMWA Journal editor noted, a person is always a “package” of human life whose fundamental physical existence lies within the 23 pairs of chromosomes found within each cell of his body.⁴

Each person’s life begins when sperm fertilizes egg to form this new human in his first stage, the zygote. From that moment, this unique human is defined by his 46 chromosomes; he’ll pass through many more stages of development and become more “recognizably human” within each stage, but he is no less human as a zygote than as an adult. Therefore, all humans are equally important at any stage of existence from the moment of conception.

We must not add to the body of science by conducting unethical procedures involving the body of even the most immature child. A previous *Journal* article² described how “embryonic stem cells are taken only from the morula stage of development at 5 to 7 days after fertilization, well before any organs or recognizable structures have formed and before the embryo has implanted into the uterine wall.”

That information is biologically correct, but factually incomplete, because the morula that is destroyed as the stems cells are removed is a stage of development for a *human child*, not a fruit fly or any other animal. The child’s chromosome number and content and the outcomes of each developmental stage confirm this fact.

True, the cells removed at the morula stage aren’t being used “to grow a fetus”² whose organs could be harvested, as that same *Journal* article points out.

However, the child in that morula stage is still being destroyed for golden treasure - the totipotency found in his cells during that stage of life. By omitting the fact that this is the morula stage for a child, we make it ethically easy to kill him for that treasure.

Consider the chilling descriptions of what another *Journal* article³ described as “entrepreneurial” “novel approaches” for developing stem-cell lines:

- “Genetic engineering of embryos to prevent the morula from implanting.
- Evaluation of “subgrade” embryos that are unacceptable for IVF implantation but might make perfectly acceptable stem cell lines.”

The sentence describing these “novel approaches” can be substantively revised to include additional important facts and related conclusions that reveal a fuller perspective and concern.

- Genetic engineering of (embryos - *embryonic children*) to prevent the morula (*stage of these humans*) from implanting.
- Evaluation of “subgrade” (embryos that - *embryonic children who*) (are unacceptable for IVF - *someone decided should be rejected for*) implantation but (*these children*) might make perfectly acceptable (*victims from whom to claim*) stem-cell lines.

All people of good will want to encourage ethical research that improves treatments or generates new cures for any disease or condition. Given adequate time, talent, and technology, we will find ways to cure countless diseases without killing our youngest children and stealing their stem cells. Consider the recent good news about the possible uses of Muller glial cells in the eye.⁵ Research now indicates that these cells have stem-cell properties and might be used to regrow

damaged or diseased retinas. Investigations also continue into the uses of amniotic stem cells⁶ and cord-blood cells⁷ for treating various diseases.

Researchers also recently described a technique for reprogramming skin cells to generate the induced pluripotent state (iPS).^{7,8} If consistently successful, this technique could resolve many ethical issues by creating a research approach that doesn't destroy children during their embryonic stages. However, final assessments of this technique aren't yet available.

Meanwhile, humans in various stages of embryonic development are destroyed every day to remove pluripotent and totipotent stem cells. The erroneous philosophy that permits this type of research must still be reconsidered so that we recognize the unique humanity imparted by each person's chromosomes from the zygote stage onward. We then avoid using our youngest children for any unethical research, even if skin-cell reprogramming becomes successful. The lives of these children can't matter less to us simply because they can't yet speak or defend themselves. Our compassion for the humans who are visible can't supersede our ethics and compassion for the youngest among us who can't yet be seen or even discerned as human by using ONLY the naked eye. We must use the full scope of our scientific knowledge to help us to realize that they are already human and now pass through their first stages of life just as we who now read these words once passed through those first stages of life. Thus we must respect their humanity and not destroy them.

We know that, eventually, history identifies unethical activities for what they are and often declares them to be criminal - including other research in which people from one group were destroyed for the possible benefit of those in another group. We saw this happen for healthcare workers even during the 20th Century at

the War Crimes Trials after World War II.⁹ The eventual verdict will be no different for any of us who continue to directly or indirectly support research that destroys children during their embryonic stages.

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