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Letter to the Editor

A Case for Using Eponyms in Anatomy to Teach Bioethics

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To the Editor, *Anatomical Sciences Education*:

In a recent viewpoint commentary, McNulty et al. (2021) make the compelling case for removing eponymous terms from the anatomy classroom. Their argument is two-fold: (1) the terms themselves are not descriptive of the anatomy and therefore increase the cognitive load of learners in a subject that already results in high cognitive loads; and (2) eponyms are often attributed erroneously, and the non-inclusive history of anatomy as a discipline means that eponyms are disproportionately attributed to white men, even when it is known that they were not the first to document or discover an anatomical structure. These two arguments alone are compelling enough to warrant considerable and thoughtful discussion about the continued use of eponyms in the anatomy classroom, and by extension in the anatomy literature.

With their premise established, the authors address two common points for continuing the use of eponyms in anatomy education and offer counterpoints to them. The first is that clinicians use eponyms because they represent an easy way to save time and space in recording patient histories; therefore, because clinicians use them, it serves our learners well to learn them too, to facilitate professional communication in medicine (Whitworth, 2007). The authors dispatch this argument relatively easily by arguing that because multiple structures are often named after the same individuals—for example, Fallopian (uterine) tubes vs. Fallopian (inguinal) ligament vs. Fallopian (facial nerve) canal, all named after Gabrielle Falloppio; or foramina of Luschka (lateral aperture of fourth ventricle of the brain) vs. Luschka's (uncovertebral) joints vs. ducts of Luschka (accessory bile ducts), all named after Hubert von Luschka—the use of eponyms can cause communication errors that lead to clinical errors (Pritchard et al., 2003; Waseem et al., 2005; Strzelec et al., 2017). The second argument the authors refute is the idea that the use of eponyms preserves the history of the discipline. But as the authors point out, when eponyms have been assigned erroneously, the argument that they should be retained to support the history of the discipline is weak.

The authors should be commended for formally reigniting this discussion in the literature because it is long overdue. And the case these authors make is difficult to refute. Therefore, their conclusion that the "teaching of eponyms should no longer be included in anatomy coursework that is focused on teaching anatomical content to future health professionals," follows logically from the arguments presented. However, there is a compelling case for using eponyms in the anatomy curriculum as a vehicle for introducing bioethical considerations in anatomy and how our understanding of bioethics as a discipline has fundamentally changed as a result of the transgressions in medical and anatomical sciences during the Third Reich.

The authors write that "the use of Nazi eponymous terms is inappropriate and is to be actively discarded." Indeed, there have been several recent instances where scholars and medical educators have called for the removal of eponyms associated with Nazi science (Strous and Edelman, 2007; Woywodt and Matteson, 2007; Cohen, 2010; Winkelmann and Noack, 2010). Yet, most recently, Hildebrandt (2021) argues that any decision on the use of eponyms in anatomy requires an examination of the historical background of the name. In essence, removing eponyms elucidates content at the expense of context. This argument centers on two eponyms: Clara cells (club cells or bronchiolar exocrine cells), named after active National Socialist Party member Max Clara (Winkelmann and Noack, 2010), and Frey's syndrome of gustatory sweating, named after Polish neurologist Łucja Frey, who first described the pathophysiology and was herself a victim of Nazi genocide in either the Lwów (Lviv) ghetto or the Bełżec death camp (Maciejewska et al., 2007; Grzybowski and Sac, 2016). Hildebrandt argues that removal of the eponym for Clara cells makes perfect sense when reviewing the history but that in the case of Frey it is acceptable to continue using this eponym.

Perhaps what is missing from the discussion of whether to remove eponymous terms entirely from the anatomy curriculum is that they provide teachable moments (Seidelman, 2018) to create more empathetic health care providers. As Hildebrandt (2021) describes, Nazi era eponyms provide important avenues to address how seemingly routine and ethical science and scientists can lose

their way incrementally. Further, it is the Nuremberg trials of doctors and health officials and the resulting Nuremberg code that helped to establish the modern Informed Consent era (Vollmann and Winau, 1996), the era in which these clinicians-in-training will practice. As reported in the literature, discussions like these set the stage for biomedical ethics in the anatomy classroom (e.g., Olejaz, 2017; Goss et al., 2019; Jones, 2019) and are logical as learners often ask about the donors in front of them on a dissection table. Additionally, teaching ethics in the context of anatomy can help address the hidden curriculum (both positive and negative aspects) of professional identity formation as described by Finn and colleagues (Brown et al., 2020; Finn and Hafferty, 2020). A recent special issue of *Anatomical Sciences Education* (Vol. 12, Issue 4; Cornwall and Hildebrandt, 2019) specifically addresses the role of ethics in the anatomy curriculum and the role that teaching medical ethics serves in the development of empathetic health care providers (Hildebrandt and Seidelman, 2018: Hildebrandt, 2019).

Currently, only 16% (22 of 140) of North American medical schools teach bioethics through the Holocaust as a case study (Wynia et al., 2015). Silvers et al. (2021) lay out several reasons why this may be the case, not the least of which is that teaching about genocide is demanding for faculty and few are prepared with an adequate background knowledge and an effective pedagogy. Perhaps equally important is that because accrediting bodies don't require it, medical schools don't prioritize finding the time in the curriculum to address ethical transgressions in biomedicine. Anatomists have the power to change this if we prioritize it in the anatomy curriculum, however.

Example curricula exist already in the literature as a guide. In response to discourse on public and patient trust in medicine, and the duties of health professionals to protect vulnerable patients and communities, Levine et al. (2019) recommended pedagogical approaches to teach lessons in the medical curriculum on managing competing professional interests: commitment to science, clinical detachment, and competing loyalties. McDaniel et al. (2021) provide a framework for integrating ethics into the anatomy curriculum as the "first clinical experience" at Harvard Medical School. The interventions described include pre-course faculty development on course philosophy, team-

building exercises for learners, and a narrated module on the history and ethics of anatomy (McDaniel et al., 2021). A module or lesson highlighting a small subset of eponyms, especially ones derived from the histories of Nazi science and informed consent, could be an important step in advancing the integration of bioethics into the early phases of medical education. The emphasis on the history of the Holocaust is intentional because, as Silvers et al. (2021) highlight, it illustrates clearly how the failure of clinical practitioners to balance competing professional interests had a major negative impact on professions, patients, and society.

To be clear, our argument is not that we should keep eponyms in the anatomy curriculum as descriptors of anatomical structures—they simply cannot do this. Instead, we argue that by acknowledging the existence of eponyms and highlighting a few examples, such as those of Clara and Frey (or numerous others from anatomy's complicated history), we can introduce the importance of ethics in science and clinical practice to learners at an early stage of their educational career. Moreover, we can set the stage for the rest of the medical curriculum to follow suit and include bioethics discussions throughout the early phases of medical education, with appropriate examples specific to those courses of study. For example, the history and bioethics of HeLa cells should be taught in the context of cell and tissue biology because the cell line has been instrumental in numerous scientific discoveries, and/or pharmacology in the preclinical curriculum as the cell line was critical for testing the polio vaccine (Skloot, 2010).

Anatomists need to continue leading the integration of bioethics into the preclinical curriculum, as we have done with the ethics of donation, so other disciplines will follow suit. To use the words of Rabbi Hillel (Pirkei Avos, 1984; 1:14), as paraphrased by the authors of the viewpoint commentary: If not now, when? When should we expand the discussion of bioethics as a central tenet of anatomical education? The answer is now. Eponyms can serve as harbingers in a broader discussion about the ethics of body donation and the importance of empathy in communication with patients. Many of us will argue that we simply cannot afford the time in our curriculum to address these issues. But perhaps we also need to consider whether we can afford not to.

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