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Bones, Bodies, and Blogs: Outreach and Engagement in Bioarchaeology

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Cite this as: Meyers Emery, K., Killgrove, K. (2015). Bones, Bodies, and Blogs: Outreach and Engagement in Bioarchaeology, Internet Archaeology 39. http://dx.doi.org/10.11141/ia.39.5

1. Introduction

Blogging has rapidly become an important method of scholarly communication and public outreach (Cargill 2010; Morgan and Eve 2012), and broader benefits of blogging in academia have been observed over the past half-decade (Chong 2010; Gregg 2009). As an open and public medium, it is easily accessible by a broader non-academic community and facilitates timely dissemination of new information to an interdisciplinary audience. The conversational tone and lack of jargon in blogging translates academic research for public consumption. Over the last ten years, archaeologists have recognised the importance of blogging as a form of engagement, and there has been a dramatic increase in the number of archaeology bloggers (Caraher 2008). For example, participants in the Blogging Archaeology carnival rose from 12 in 2011 to 72 in 2014 (Morgan 2011; Rocks-McQueen 2014). There has been no equivalent rise, however, in the number of blogs devoted to bioarchaeology, or the scientific study of human skeletal remains of ancient populations.

This lack of online engagement between bioarchaeologists and the public is surprising given the public's fascination with forensic anthropology and the dead. TV shows like *CSI* and *Bones* have enormous public appeal, and news articles about captivating mortuary finds such as vampire burials or reports of prehistoric cannibalism are widely shared. We argue that there is a need for an increase in blogging about bioarchaeology to keep pace

with the soaring popularity of skeletons in news stories, fictional books and TV shows, and the public imagination. A diverse chorus of bioarchaeology bloggers is needed to champion the tenets of anthropology and counteract popular misconceptions about skeletons and burials.

Our goal in this article is three-fold: first, we qualitatively survey the ecology of the bioarchaeology blogosphere to investigate how many blogs are present, what topics they cover, who their authors are, and what audiences they target. Second, we address the current impact and importance of blogging in bioarchaeology. Finally, we draw on our collective decade of experience as bioarchaeology bloggers to suggest best practices for bioarchaeologists who want to engage in outreach and publication through blogging. The difficulties and potential issues of blogging bioarchaeology are far outweighed by the benefits of expanding communication and furthering disciplinary engagement in an increasingly digital world.

2. The Bioarchaeology Blogging Landscape

In 2013, anthropologist and blogger Jason Antrosio (2013) wrote about the state of blogging in the discipline. Antrosio sought to categorise high-profile anthropology blogs based on features such as their authorship and platform. It is our goal to create a similar discussion of online bioarchaeology blogs here, but this discussion is limited because there is currently no robust online community for bioarchaeologists nor are there robust data sets available on these blogs' audiences.

Although there has been a rise in the social media profiles of so-called 'Deathxperts' like mortician Caitlin Doughty (who created the '<u>Ask a Mortician</u>' vlog), medical historian Lindsey Fitzharris (who blogs at '<u>The Chirurgeon's Apprentice</u>' and writes for the public in places like *The Guardian*), and writer Bess Lovejoy (author of 'Rest in Pieces'), bioarchaeologists are still a rare breed in the blogosphere when compared with more general archaeological blogs. Current bioarchaeology blogs that are updated regularly include:

• <u>Powered by Osteons (PbO)</u> was started in 2007 by Kristina Killgrove as an outlet for

sharing information on living and dead Romans while doing dissertation fieldwork. Over time, the blog has evolved from osteological and cultural observations to essays on the importance of anthropology, osteological teaching methods, summaries of new research, bioarchaeology in news media, and the presentation of forensics on television through her regular critiques of the FOX show *Bones*. And over time, Killgrove has moved from being a graduate student to being a professional in the field with a tenure-track academic position. PbO can be found on social media, with a Facebook page and links via Killgrove's Twitter (@DrKillgrove) and G+ sites. PbO averages 3,300 page views per week, and the most popular post there has over 60,000 page views, three years after being posted.

- In May 2015, Killgrove was invited to bring her blog to Forbes' media website, where she writes about bioarchaeology, archaeology, and the classical world. As a contributor to the site, she posts five or more times per month. This blog is still too new to fully analyze, but in the first three weeks of its existence, the blog has seen over 200,000 unique visitors. Killgrove is hopeful that this unprecedented international exposure will introduce more people to the field of bioarchaeology.
- <u>Bones Don't Lie</u> (BDL) was started in 2010 by PhD candidate Katy Meyers Emery as a way to keep up with news in the field and to work on her own writing. In the last several years, Meyers Emery has explored additional topics such as theory in bioarchaeology, and she currently writes about her own dissertation research as well. As the blog evolved, it has become a resource for other archaeologists and the broader public to learn about mortuary archaeology across time and space. BDL is also on Facebook and Twitter (<u>@BonesDoNotLie</u>). BDL received an average of 6,250 page views per week, with 2,185 followers on Twitter and 3,349 likes on Facebook.
- These Bones of Mine has been written by David Mennear since 2011. Mennear began blogging as a didactic exercise, to help him expand his own knowledge of osteology and bioarchaeology and improve his writing. As he did that, his goals changed to helping the public understand osteology and the value of archaeological practice and biocultural heritage. Mennear started his blog while an MSc student and continues to update it, in spite of the fact that he is working in another field entirely while being an independent archaeological researcher in his spare time.

- <u>Deathsplanation</u>, written by Alison Atkin, is a relative newcomer to the blogosphere, started in 2013. Atkin created the blog to discuss her PhD research and the research of others, but her most popular posts, judging by comments, centre on the presentation of bioarchaeology in the news and its reception by the public. She often discusses the latest bioarchaeology news in an irreverent way, with sarcasm and animated GIFs. She also tweets <u>@AlisonAtkin</u>.
- <u>Strange Remains</u> is written by Dolly Stolze, who holds a master's degree in forensic anthropology. She started the blog in 2013 as a way to practise writing by reviewing current news in bioarchaeology and forensic anthropology. She tweets <u>@StrangeRemains</u>.
- <u>Bone Broke</u> was started in 2013 by PhD candidate Jess Beck in order to share teaching resources as well as her own research in the field of bioarchaeology. She includes tips and tricks for identifying bones as well as other resources for beginners in the field.

We chose to detail only those blogs with a specific focus on bioarchaeology that are regularly updated. There are several other blogs that touch on osteological, forensic, or mortuary related topics, but these are outside the scope of this assessment. This meant excluding blogs with broader foci like Anastasia Tsaliki's <u>professional blog</u>, Rachel Wentz's <u>The Body Blog</u>, and <u>The Skeleton Walks</u> by Brittany Walter and Carrie Healy, and those infrequently updated like Scott Haddow's <u>A Bone to Pick</u>. There may be other bioarchaeology blogs we are currently unaware of because they are new, because they are not primarily focused on bioarchaeology, or because they are not part of the larger science blogging ecology.

Despite our small sample, there are some patterns. First, of the six blogs, five authors are female and only one is male. In terms of education, one individual has completed her PhD in the field, two have completed master's level work, and the other three are graduate students working on their PhDs. All authors can therefore be considered 'earlycareer'. Finally, four of the seven blogs were started within the last two years. While seven does not represent a good sample, there is a clear pattern of early-career female bloggers that needs to be examined more carefully.

2.1 Why are there so few blogging bioarchaeologists?

Given the public's fascination with skeletons and the dead, it is surprising that there is not a large body of bioarchaeological bloggers engaging with a captivated audience. Despite the overall ease of beginning a blog and large body of material that can be covered, there are a number of reasons that bioarchaeologists might not be utilising blogging, including:

Content constraints. Some topics in bioarchaeology are potentially controversial or emotional triggers for an audience, like infanticide, cannibalism, deviance, gender, and ethnicity, and these can be difficult to write about in a blog. Additionally, some bioarchaeologists may be concerned about a reader stealing their unpublished research or about readers using information on specific locations to engage in looting sites.

Practical constraints. Running a successful single-author blog can be like having a part-time job. There is a need to produce consistent and timely content, engage the audience in discussions, share the information through social media, and maintain the site itself, for little to no monetary gain. Further, blogging requires some practical knowledge of HTML or content management systems such as Wordpress, as well as social media.

Effort/Reward constraints. Blogging is not always rewarded by one's peers or superiors because it can be difficult to determine where this new medium fits into the traditional curriculum vitae. In some cases, blogging is perceived as detrimental to an academic career (e.g. Weller 2012). At the moment, there is no accepted standard of qualifying or quantifying blogs with regard to tenure and promotion in anthropology, although the American Association of Physical Anthropologists (AAPA) Ad-Hoc Working Group on New Media is developing recommendations to help change this.

These constraints may be further exacerbated by the environment of the author; a person in a department that focuses on open access and alternative methods of publication may have more freedom and support to begin blogging than one whose department focuses purely on journal and book publication. Despite this, blogging has

many benefits that outweigh the potential drawbacks, and these are discussed in more detail below.

2.2 Why are the majority women?

Of the six bioarchaeology bloggers surveyed, five are female. The high percentage of women may not reflect a gender disparity in blogging per se but may be more indicative of a broader trend within the discipline. While new data are expected within the next year, in the most recent membership survey done by the AAPA in 1998, Turner (2002, 113-14) reported 'there has been a marked shift in the number of males and females in the discipline from the 1960s to the 1990s. While 51.2% of all respondents are female and 48.8% are male, 70% of the students are female'. This gender difference is most prominently seen when assessing the subfields: skeletal biology was 60% female, and palaeopathology and human biological variation were 90% female. The AAPA census data are 15 years old, but there is more recent qualitative evidence for the rise of females within bioarchaeologically related fields. In 2008, Dr Sue Black, a skeletal expert from the University of Dundee, reported in *The Guardian* that her 'student intake is 95% female' (Bindel 2008). Similarly, in 2012, the Washington Post noted in a story titled 'Women at the forefront of a booming forensic science field' (Chandler 2012) that 90% of the students enrolled in forensic science at George Mason University (GMU) were female. The GMU students further reported that their interest in skeletal material resulted from a goal to help society through forensic science.

The gender disparity in bioarchaeology blogging could also be related to part of a broader trend of women reclaiming their role in death. Lindsey Fitzharris of *The Chirurgeon's Apprentice* argues that 'until recently, women were the caretakers of the dead, and often dealt with death on a regular basis. Today we are suddenly surprised by the fact that women might be interested in subjects or activities relating to the dead – that somehow we are breaking a gender stereotype' (Magpie 2014). In the 16th through 18th centuries, women were in charge of examining the remains of the deceased to record cause of death for the *London Bills of Mortality* (Fitzharris 2013). We suspect that the domination of women in bioarchaeology blogging might be a part of this overall

trend in reclaiming the role of caretaker of the deceased.

While there does not seem to be a satisfying explanation for why more women are entering fields relating to human skeletal material, our own survey of blogging bioarchaeology supports this finding. Until more systematic, quantitative investigation of this phenomenon is done, we will not have any clear picture of why this is occurring.

2.3 Why are they early-career bioarchaeologists?

There are a number of top-notch archaeology and biological anthropology blogs written by mid- to late career scholars such as Rosemary Joyce's <u>Ancient Bodies, Ancient Lives</u>, John Hawks' <u>Weblog</u>, and Paul Mullins' <u>Archaeology and Material Culture</u>, but this type of representation is not seen in bioarchaeology. As later career anthropologists are clearly blogging and blogging has been around for at least a decade, it is not possible to argue that younger scholars are simply early adopters of new technology. Rather, early-career bioarchaeologists may lean towards this type of engagement and publication because:

- Blogging provides a way for scholars to make a name for themselves within both the academy and the broader public community. Since the effort and investment required to sustain a successful blog can be quite high, individuals who are already well established within the field may not perceive as many rewards. All of the bioarchaeology blogs surveyed were started when the author was in graduate school, further supporting the idea that blogging is a way to increase one's visibility within a highly competitive field.
- The technological landscape is different for early versus later career bioarchaeologists. Those beginning in the field have a greater need to learn how to use digital tools, to manage new forms of scholarly communication, and to engage in public outreach. Blogging provides a clear demonstration of these skills. Further, digital environments often foster a climate of open access and data sharing that, while not fully accepted by the greater academy, is growing in popularity among early career academics.
- Blogging, as with other forms of social media, can lead to a levelling of the playing field between scholars. A small study by Thomson and Mewburn (2013) revealed

that blogging could provide benefits for early-career scholars, such as sharing and commenting on research without concern for effects of seniority and rank. Clancey (2011) argued that blogging is highly beneficial to pre-tenure academics as a way to build a network, practice one's writing, and provide a service to the public and junior scholars. With the changing landscape of the university context, blogging provides a way that early career anthropologists can have a beneficial impact, both withinin the broader community and for themselves.

 Graduate school can be isolating. Several of the bioarchaeology bloggers, either on their own sites or by email, have commented that one of their reasons for blogging is to start a conversation, often on topics or stories not directly relevant to their specific research. Our qualitative assessment of the current bioarchaeology blogosphere certainly suggests that blogging as an outlet for ideas has extended traditional graduate student conversations to a wider audience.

3. Impact and Importance of Bioarchaeology Blogging

3.1 Blogging is not an academic echo chamber

'These [bioarchaeology] blogs provide a valuable service to the discipline, but still represent the perspective of insiders writing largely (we would argue) for other specialists and students.' Stojanowski and Duncan (2014, 5)

In their *American Journal of Human Biology* article, Stojanowski and Duncan (2014) levelled the above charge against PbO and BDL in particular. The blog authors cited above are 'insiders' (curiously used in a pejorative way by Stojanowski and Duncan, as who else would they want to write these blogs other than experts in the field?). But these blogs are not written *for* specialists; all of us have other venues – namely, our academic work – for talking to our colleagues.

There are several regularly updated, high-profile biological anthropology blogs being written, but most are on contemporary topics (meaning living humans, not dead ones). Until last year, Kate Clancy, assistant professor of anthropology at the University of

Illinois at Urbana-Champaign, wrote <u>Context and Variation</u> as part of the Scientific American Blog Network; Barbara King, professor of anthropology at William and Mary, writes regular posts as a contributor to <u>13.7 - Cosmos and Culture</u> as part of the NPR Blog Network; and Agustín Fuentes, professor of anthropology at Notre Dame, has a blog called **Busting Myths about Human Nature** at Psychology Today. These bloggers are reaching a vast audience by virtue of having internationally known media outlets from which to blog. Until Killgrove started blogging for Forbes in May 2015, there was no representation of bioarchaeology in national platforms like these, it is in a way understandable that the public outreach accomplished through blogging does not register for Stojanowski and Duncan. This misunderstanding of the bioarchaeological blogosphere is particularly apparent in Stojanowski's and Duncan's decision to 'gauge the impact of bioarchaeology' (2014, 5) by assessing articles about human skeletal remains curated by the news aggregator *Science Daily*. These articles were written by science journalists and public relations specialists about osteological finds they felt would capture the attention of the public. While there is something instructive in here namely, that bioarchaeologists would do well to identify and write about the parts of their research that might captivate the public – dismissing bioarchaeological blogging as so much navel-gazing does a disservice to blog authors and to their large audiences.

Had Stojanowski and Duncan asked us, we both could have provided a variety of evidence of audience and public outreach for our blogs. At PbO, Killgrove has tackled the centuries-old question of lead poisoning in the Roman Empire. Reframing data she published with colleagues in a peer-reviewed venue (Montgomery *et al.* 2010) as the public-orientated post 'Lead poisoning in Rome - the skeletal evidence' (Killgrove 2012), Killgrove has watched her blog statistics and her article statistics diverge. In the five years since the article was published, it has been cited 15 times. In the three years since the blog post was published, it has been accessed almost 60,000 times, thanks in part to readers sharing it on Wikipedia, Reddit, StumbleUpon, and other social media sites. The post was also chosen from over one thousand entries for inclusion in the *OpenLab 2013 Anthology of the Best Science Writing Online*. Killgrove also writes a regular feature critiquing the TV show *Bones*, which focuses on a character invented by forensic anthropologist Kathy Reichs. Comments, emails, and shared links for these reviews show

that the general public's interest in osteological techniques and forensic analysis has been piqued, and PbO's top 10 Bones posts combined have over 53,000 unique pageviews. Meyers Emery's article on BDL, 'Pigs on the pyre - solving cremation mysteries' (Meyers 2014a), is a summary and critique of Jæger and Johanson's (2013) experimental cremation of piglet remains to understand the lack of cremated infant bones in the past. Her blog post received coverage from Smithsonian Magazine (Eveleth <u>2014</u>) and Reddit, and it was a Research Blogging Editor's Pick. In the comments section of the post, article author Jonas Jæger wrote that 'when we did the experiments almost a year ago we never thought that our experiments would get as much attention as they did much less outside of Denmark or our own university. Even when we got the article published in a small Portuguese journal we only hoped that a few geeks somewhere would find it'. BDL succeeded in amplifying the article and extending its readership while educating the blog audience in the process. We both routinely receive email from people from all walks of life - grade school students, retired soldiers, and international lawyers, to name but a few. These private interactions are difficult to quantify but in the aggregate demonstrate clear evidence of our reaching a diverse public.

Understanding the audience and impact of a blog is a much more complicated and daunting task than looking up the page views of a *Science Daily* article, the number of citations a journal article has received, or the h-index of an academic. Blogs grow and evolve over time, often in response to or in dialogue with the blog audience. They are not singular products, like the pathology database and 3D models that Stojanowski and Duncan call 'more dramatic media' (2014, 7) than blogs, nor are they static forms of media. Number of hits or comments on a post are reasonable popularity metrics for a single item at a single point in time, but the growth of a blog, in posts and in audience, is additive. The beauty of blogging is in both the long tail and the *longue durée*: the blog is a living document, slowly evolving in response to both intrinsic and extrinsic stimuli.

3.2 Blogging is a form of outreach and public engagement

'People are inherently fascinated by human remains in a way that they aren't by ceramics, lithics, or palaeobotany, so we have a valuable opportunity to bring archaeology to a public whose knowledge of the field may largely come from shows like Ancient Aliens.' (Jess Beck, pers. comm.)

Outreach by bioarchaeology bloggers falls primarily into two categories: proactive and reactive. All the bloggers profiled here engage in proactive public outreach by writing up news and research for a general audience. Both Beck and Mennear use their blogs to talk to students and the public who want to learn more about human osteology. Meyers Emery uses her blog to communicate the findings and arguments of new journal articles, since many people do not have full access to pay-walled bioarchaeology journals such as the International Journal of Osteoarchaeology. Killgrove, Stolze, and Atkin all round up news coverage of bioarchaeological topics on a regular basis to communicate those findings to a larger audience. Bioarchaeologists as a group, however, can certainly be doing more to position themselves as experts who can help translate important research and ideas to the public. We wholeheartedly agree with the statement by Jeremy Sabloff (2011, 408) that 'one potentially fruitful way to facilitate such outreach is to have more anthropologists become visible, recognized public intellectuals'. There market for public bioarchaeologists is clearly demonstrated by two recent, controversial news stories. The 'Gay Caveman' – an anomalous prehistoric burial – was reported by news media in 2011, and the treatment of the story received swift disapproval on blogs by Killgrove (2011c), palaeoanthropologist John Hawks (2011a), and archaeologist Rosemary Joyce (2011). Due to this outcry, the news media, led by LiveScience (Pappas 2011) and CNN (Gast and Aarthun 2011), did an about-face in their coverage. And in 2014, the National Geographic Channel's video clip for a show called 'Nazi War Diggers' was roundly denounced by anthropologists around the world for their unethical treatment of human skeletal remains. Killgrove (2014c), Mennear (2014), and Atkin (2014b) blogged about this controversial show to raise awareness among scholars, students, and the general public that the methods used to excavate the remains were neither professional nor ethical. The TV show was pulled indefinitely as a result of bloggers decrying the unethical treatment of remains, professional organisations like the Society for American Archaeology pointing out the unprofessional methods employed, and the general public expressing their outrage over perceived desecration of historic graves. This kind of engagement through reactive blogging is clear evidence of successful outreach and multivocal lobbying by different stakeholders.

The largest barrier to interaction, however, may be the public's difficulty finding bioarchaeologists. Leaving aside the problem that the general public may not know what specifically bioarchaeologists do, if you knew you needed a bioarchaeologist, how would you go about finding one? Journalists, academics from other disciplines, and students are likely to use online search engines and social media to seek out qualified bioarchaeologists. And yet we are not as a group capitalising on the power of the list. There is a Wikipedia entry for well-known archaeologists, but none for bioarchaeologists. The Wikipedia page for Jane Buikstra, the creator and doyenne of American bioarchaeology, lists her under Forensic Science. Worse yet, our major professional organisation, the American Association of Physical Anthropologists, does not have current demographics for its membership (although the AAPA Committee on Diversity reported at the 2015 meeting that demographic questions in the membership database should mean easier access to this information in the future), so it would seem that no one has a comprehensive list of bioarchaeology experts. To change this underrepresentation of bioarchaeologists, we can start by editing Wikipedia to make a list of bioarchaeologists willing and capable of offering expert opinion.

Another way to accomplish public outreach and increase the visibility of bioarchaeology is to take opportunities to make our work available to more than just colleagues, students, and others with institutional access to professional journals. For example, bioarchaeologists George Armelagos *et al.* (2012) make the case in their trenchant article on the phenomenon of 'research by documentary' that there are appropriate channels for publication and that primary dissemination by television is not part of the scientific method. While we absolutely agree with them, the fact that they published this article in a peer-reviewed journal that is not open-access means that the general public will not get these scientists' perspectives on what is wrong with the documentary or with the process of 'publication'. Had they chosen to blog instead of or in addition to this article and aimed it at a non-specialist public, they may have reached people who were put off by the documentary or who wanted to learn more. Slightly further afield, forensic anthropologist Heather Walsh-Haney (2011) reviewed the Temperance Brennan series of novels by forensic anthropologist Kathy Reichs in the pages of *American Anthropology*, this

article is aimed at specialists who can easily critique the show themselves. An essay like this would work much better as a blog post, accessible by the general public who consume forensic novels and television shows. Removing the veil of pay-walled journals would yield better outreach and help sway the public to whom these media are marketed.

By balancing proactive and reactive approaches to communication of bioarchaeological topics, the current blogging cohort is both promoting accessibility of bioarchaeological research and challenging their audiences to question media portrayals of osteological science.

3.3 Blogging is beneficial for the author

'What has surprised me most are the avenues that have opened up as a result of blogging.' (Alison Atkin, pers. comm.)

Beyond the simple fact that regular blogging improves one's overall writing skills, it can also be a professional boon. All of the bioarchaeological bloggers have experienced fringe benefits of writing for a general audience, including new professional opportunities, increased coverage of their own research, and interaction with a broad online community of scholars and the interested public.

In spite of a demanding position as tenure-track faculty, Killgrove regularly updates PbO, a blog she started while in graduate school. As she writes there (Killgrove <u>2013c</u>), 'Interest in my posts has generated interest in my publications, and vice versa. Several of my posts here have been cited in peer-reviewed publications, which tells me my colleagues find value in my blogging. My version of outreach is appreciated by my university, which has a large public archaeology program. Social media has even led directly to benefits such as: inclusion in *Open Lab* (which I plan to count as a publication for tenure purposes), a position writing for *Science Uncovered*, trips to several countries and US cities to give public talks about my work, research money through crowdfunding, good relationships with science journalists willing to cover my research, and the creation of a social-professional network that cross-cuts various academic disciplines'. When Forbes editors went looking for someone to join their blogging network to cover

archaeology and bioarchaeology, Killgrove's proven track record at public outreach through PbO was indispensible in helping her get the position.

While the original goal of BDL was to serve as a place for scholarly discussion of current journal articles in bioarchaeology and mortuary archaeology, Meyers Emery has expanded her scope over the past four years of writing. Writing BDL has had numerous benefits. Based on this authorship, she was selected to be the Assistant Editor for Bioarchaeology of the Society for Archaeological Sciences Bulletin. Meyers Emery has been invited to be a guest author at the Society for Historical Archaeology Blog, Past Horizons, PopAnth, and Then Dig. Her writing has been featured in *Smithsonian Magazine, Scientific American*, and *MSU Today*. Most notable, however, is that Meyers Emery consistently fields requests from published bioarchaeologists to write summaries and critiques of their work on BDL in order to disseminate the work more widely. By both proactively and reactively blogging, we provide expert opinion to science journalists and to the public, who come to trust us as the antidote to Daily Mail-style sensationalism. In return, science journalists often highlight us, our blogs, and our research, thereby raising our visibility as bioarchaeology experts further. This form of scholarly sharing and public networking with science journalists is novel in bioarchaeology.

Citation of blogs and blog posts in peer-reviewed publications is an especially important facet of authorship for academic bloggers. While both of our blogs have been cited in journals and books, those citations have been uneven. The best practice for crediting an individual blog post is to include the author's name, date of post, title of post, and blog URL (as does, for example, Martijn de Koning (2013) when citing a PbO post). Best practice for referencing an entire blog is to treat it as a book and refer to it by title and author(s) (as do, for example, Martin *et al.* 2013 when citing PbO). Poor practice is a complete lack of authorship credit. For example, Stojanowski and Duncan (2014, 5) include only the URLs to our respective blogs, which we view as akin to including only the ISBN of a book. Failing to credit the author or authors of a blog or post properly is poor citation style. More importantly, however, divorcing the author from her writing removes the author's agency and ability to make her case for blogging as an important professional endeavour.

Blogging is more than public outreach; it creates professional and personal opportunities for the author within a trusted community of likeminded bloggers. For most of us, the benefits of blogging have been unexpected but highly satisfying. While the blog may not yet be recognised as a scholarly publication in current tenure and promotion schemes, nor be easily quantified on a curriculum vitae, it has proven its worth to the current cohort of bioarchaeological bloggers.

3.4 Blogging allows for many perspectives, but there are gaps in coverage

'One of the real strengths of bioarchaeology blogging is the independence and individuality of the bloggers. No two are the same, either content wise or approach wise. Diversity is the key'. (David Mennear, pers. comm.)

Blogging in bioarchaeology may be a way to set oneself apart in a small but competitive job market, but ultimately blogging is not about competition. The main goals of the bioarchaeologists surveyed for this article are to educate the public by making science more transparent, connect with other disciplines, learn more about our own and other fields, and share the work we do widely, although they have reaped benefits beyond just service and engagement. There are myriad paths open to bioarchaeologists interested in blogging. The suggestions below represent ideas from the bioarchaeology blogging cohort that would enhance the current online offerings:

Use different media. To date, no bioarchaeologists are vlogging (video blogging), and there are no regularly-updated podcasts devoted to bioarchaeological topics. Considering the popularity of the *Ask a Mortician* vlog, there is great potential for videos about bioarchaeology to answer questions from the general public. As John Hawks (2011b) writes, we need to embrace new forms of media to get information to the public faster.

Contribute to a group blog. If the prospect of single-authoring a blog is too daunting, Atkin suggests writing guest posts for an established blog, Beck would like to see a group bioarchaeology blog, and Stolze envisions an online salon or forum for sharing osteological information. A bioarchaeology-themed blog along the lines of <u>Savage Minds</u> or <u>The Mermaid's Tale</u> or a bioarchaeology wiki would be especially welcome additions (see also Price 2010).

Write a bilingual blog or post. Few archaeologists and no English-speaking bioarchaeologists write bilingual blogs, which means that many of us are underserving the audiences we are trying to reach. Although English may be the *de facto* language of academic scholarship, alternative languages should be considered.

Try writing osteobiographies. Increased interest in past people's lived experiences (as, for example, in the volume *The Bioarchaeology of Individuals*, edited by Stodder and Palkovich <u>2012</u>) can easily be translated to posts a blog audience would find fascinating. Bioarchaeologists with a talent for writing riveting fiction based in osteological fact can reach many more people than even the most gifted technical writer among us.

Discuss your pedagogy. How to teach anthropology is an untapped field, as our subject is not a part of traditional K-12 education. Although the AAA created a Teaching Materials Exchange, it is largely a clearinghouse for syllabi. Beck has begun writing didactic blog posts aimed at students who are more likely to search the Internet than to pick up a human anatomy book. Killgrove has used her blog to share her syllabi, reading lists, class discussions, class projects, and assignments, and she has found blogging about pedagogy useful for sharing ideas with colleagues and for creating innovative ways to teach courses like human osteology. Additional voices discussing pedagogy, particularly those of mid- and late career bioarchaeologists, are needed.

Use and discuss new technologies. Bioarchaeology is constantly changing as technology advances, and reviews of new technologies are useful. Meyers Emery has covered the use of GIS to improve cemetery analysis (Meyers <u>2013c</u>) and shared information about a new geospatial database (<u>2014b</u>). Killgrove has discussed her use of 3D printers to create teaching items (<u>2014b</u>) and is a major proponent of GitHub for sharing and disseminating research data (<u>2013a</u>).

The bioarchaeology blogging community is built on shared communication and open access to scientific knowledge rather than a realm for competition. By engaging with new technologies, new forms of communication, and new topics, there are many ways that bioarchaeology bloggers can find their own niche among the current cohort.

4. Best Practices for Blogging Bioarchaeology

We have thus far argued that blogging plays an important role in research, outreach, and even teaching bioarchaeology, and have offered suggestions for expansion of the bioarchaeology blogosphere. There are a number of practices we would suggest for all bloggers – such as properly citing others' posts, engaging with the audience, and being supportive of other bloggers – but here we address in more depth best practices particular to blogging bioarchaeology.

Write for an educated public. First and most importantly, in writing any blog post, take the opportunity to explain bioarchaeological concepts in plain terms rather than disciplinary jargon. Succinctly and plainly explaining a complex topic is difficult but may be rewarded in your next public talk invitation or successful grant proposal. *How to do this*: you already have experience submitting your paper drafts to a professor, to colleagues, or to a friend or significant other in a different line of work. Workshop your blog posts too, trying to anticipate what terms your audience will be unfamiliar with and the kinds of questions your audience will ask.

Write regularly. Regular writing on a blog helps authors find their voice and their audience. Most of the bioarchaeology bloggers profiled in this article have series or categories of posts. <u>Beck's</u> Osteo Tricks and Palpable Anatomy along with <u>Mennear's</u> Skeletal Series are recurring posts with tips for identifying human anatomy, while <u>Meyers Emery</u> explains Morbid Terminology. On a regular basis, many bloggers round up the news: <u>Stolze</u> writes up Forensic Anthropology, Archaeology, and Strange News from the Week, while <u>Killgrove</u> puts out the Roman Bioarchaeology Carnival and <u>Atkin</u> provides Breaking News monthly. *How to do this*: serialisation and consistency are the bread-and-butter of blogging. If you have writer's block, about blogging or about other writing, typing up a regularly scheduled post can help unblock you.

Be sensitive to your own biases and those of others. Blogging about human

remains requires sensitivity. Topics as far-ranging as infanticide in the past, the antiquity of cancer, or biological anthropology's history of racism may trigger emotional reactions from an audience. Rather than avoiding these discussions, we advocate rising to the challenge of explaining them using the biocultural perspective that underpins bioarchaeology. *How to do this*: write posts that situate research within an appropriate context. Meyers Emery (Meyers 2013a) wrote 'The prince is actually a female (and other gender misconceptions)' to discuss the problematic use of gender designations and gender bias in news stories and journal articles. Killgrove wrote about 'The leper warrior: persistence of racial terminology in biological anthropology" (2011a), critiquing Italian bioarchaeology, and 'Biocultural bodies and the anatomy of controversy' (2011b) about the politicisation of supposed racial traits in past populations. One of the strengths of addressing these potential sensitivities in blogging is that posts evolve as a conversation between the author and her audience, educating both sides of the relationship.

Repudiate the hysteria and hype of the media. Bioarchaeological bloggers have a duty to fight against the sensationalism and misconceptions caused by popular media by providing hard evidence and sound theory. How to do this: write about popular and current discussions. For example, Killgrove breaks down the science of the TV show Bones every week and highlights osteological errors in her series 'Who needs an osteologist?' More problematic are sensational news stories that present misinterpretations of bioarchaeological research. We noted above the role of blogging in tempering the controversial 'gay caveman' news releases and the 'Nazi War Diggers' TV show. Meyers Emery has also discussed problematic 'vampire' burials in a number of posts (Meyers 2012; 2013d), Atkin (2014a) writes about not-so-new ideas about the Black Death, and both Killgrove (2013b) and Meyers Emery (Meyers 2013b) have addressed news headlines such as 'Did Romans dump the remains of their dead children with the rubbish? Grisly discoveries reveal unsympathetic attitudes', highlighting the nuances of the research for their audiences rather than assuming people are only interested in click-bait titles. Correcting misconceptions and ensuring that interpretations are backed by solid evidence should be priorities of bioarchaeology blogging.

5. Conclusion

The modern world is increasingly filled with imagery and stories of human remains, from popular TV shows based on the analysis of bones to skeletons returning as part of contemporary art, such as the works of Francois Roberts (2010) and Bruce Mahalski (2015). News stories and bioarchaeological research are shared online in a variety of formats regardless of whether academics choose to participate in the production of the content. It is the duty of bioarchaeologists to meet the demand for insight into the deceased, and provide accurate, jargon-free information about our field to combat the tendency that exists among popularised media towards sensationalism and misinterpretation. While a solid cohort of bioarchaeology bloggers does exist, there is much room for growth and expansion of our group to fill the gaps in coverage and add their voices. Additional interest in digital outreach through blogging can only strengthen the broader field of bioarchaeology, and there are numerous ways for scholars to contribute to the causes of furthering disciplinary engagement and expanding our repertoire of communication practices. The public is already spellbound by bones and bodies; blogging about bioarchaeology helps paint a more nuanced picture of the biocultural nature of humans. The public interpretation of our research cannot be left in the hands of journalists and fiction writers - we, the bioarchaeologists, must be the protagonists and advocates of our discipline.

Acknowledgements

We'd first like to thank Alison Atkin of *Deathsplanation*, David Mennear of *These Bones* of *Mine*, Rachel Wentz of *The Body Blog*, Dolly Stolze of *Strange Remains*, and Jess Beck of *Bone Broke* for contributing their thoughts on bioarchaeology blogging. We are grateful to Colleen Morgan for inviting us to participate in this volume. And we thank Lynne Goldstein for reading a draft of this article. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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File last updated: Tue May 12 2015