HOW THE SAUSAGE OF SCIENCE IS MADE

By Cara Ocobock and Christopher Lynn

Abstract

Podcasts are a popular medium for such promotion and relatively easy to execute. As such, we started the Sausage of Science podcast for the Human Biology Association in order to feature early career professionals, highlight the exciting and highly relevant work done in our field, and talk with our friends and colleagues in a more casual manner for the world to hear. This paper describes how the podcast came about as well as our production process. Furthermore, we discuss why this form of science communication and outreach is critical for the field of anthropology and public engagement for others with podcasting aspirations.

Key words: podcast, science communication, public engagement

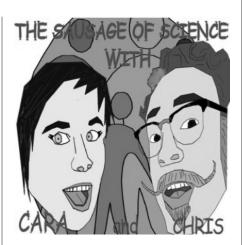
A dear, dear friend of mine... probably the first woman I met there—I had no language ability, and she was always just hanging with me at my house. She was very pregnant. We developed a sort of friendship over time. When her baby was born, she named Kete Carolyn after me. As much as we developed an incredible friendship from that, I now look back and admire the strategic nature of that, and we joke about it now...in terms of how it creates a kinship system between us and certain allegiances and alliances that we must maintain, as her being the smaller version of me and me being the larger version of her. There have been several other Carolyns that have come along the way since then, in Cameroon and in the Central African Republic

People laugh about it when they hear it, but to me it's an honor.... I appreciate the fact that they respect me enough to enter into that social contract of what it means to be a namesake.... I am now oftentimes being considered a hunter-gatherer scholar even though I started studying howler monkeys and ... I am constantly amazed about how much I learn about forager worldview as I'm operating within it.

— Jost Robinson, podcast interview, 2018

In recent years, the number of science podcasts has grown exponentially (MacKenzie 2019). It is easy to understand why; with the advent and ubiquity of smartphones, iTunes, and open source editing software, podcasts are a relatively easy medium through which to discuss and promote science. We started a podcast, Sausage of Science¹, for the Human Biology Association (HBA) to tell scientists' stories, like that of University of North Carolina Wilmington Associate Anthropology Professor Carolyn Jost Robinson, because they often shed as much light on the science and the experience of science as scholarly papers.

The objective of the Sausage of Science is in the title—we are interested in "how the sausage is made" with regard to anthropological science, in particular as it intersects human biology. It began as an excuse to geek out with friends and colleagues in the HBA but has become something persistently called for in our field—engaged public anthropology (Borofsky 2004). In that sense, our effort reflects Nancy Scheper-Hughes' (2009:3) call (paraphrasing her mentor Hortense Powdermaker): "You want to be a public anthropologist—then do it!...But don't expect to be rewarded for it. Instead, consider it a precious right and a privilege." Powdermaker was a public anthropologist despite a socially conservative bureaucracy that did not



Logo for the Sausage of Science Podcast. It was designed and created by Lux Lynn, Christopher's son.

reward such outreach. Things haven't changed much in that regard. While we don't necessarily agree that, as Powdermaker stated, some of us "do what we want and get away with it too!" (Scheper-Hughes 2009:3)—that is an overplayed hand of the most privileged among us—we produce Sausage of Science primarily because it is fun and fulfilling. This podcast is the kind of synergistic project we dreamed would be part of our lives when we entered academia—that service, research, and teaching would become one delicious processed meat tube we could eat and share! We hope that by sharing the origin and evolution of our podcast, as well as some of the impactful stories from our interviewees, others might be encouraged to take the leap and pursue their passions in ways that enrich us all.

How We Make the Sausage

The Sausage of Science has evolved a fair amount over the course of 1½ years and forty-eight episodes (as of this writing). We began by republishing recorded lectures that took place on our own campuses with accompanying

interviews because we thought it was a shame these cool talks saw such limited audiences. However, the process of editing sixty-minute-long lectures plus the interview became too time-consuming. As such, we decided to focus more on brief research spotlights, wherein we conduct twenty to forty minute interviews with scholars recently published in the *American Journal of Human Biology*.

podcast), we spend a few minutes chatting with each other about interviewees' work before bringing them on for the interview. Sometimes, following the editing style of *The Weeds* (https://www.vox.com/the-weeds), we pull something silly we've said to the front to grab listener attention before transitioning to the conversation.

With Cara in South Bend, Indiana, and Chris in Tuscaloosa, Alabama, we

...the *Sausage of Science* works because we work well together. When you find good collaborations, nurture them. Not all collaborations work well or have clear divisions of labor, and, thus, those partnerships often do not last.

We fell into a similar approach to the podcast that we use in our research. That is, we find a topic of interest, often based on recently published articles, then investigate and contact the author. We put together five to ten questions to send to the interviewee ahead of time. These always include a query about their own academic origin stories (how they got into and decided to pursue a career in their field), questions about their process and findings, and general interest items (what they are reading, watching, or listening to for fun). We publish an episode every two weeks using SoundCloud (Berlin, Germany) as our platform. We then publicize recent interviews through social media, encouraging people to subscribe to and share the episode.

Our approach borrows liberally from other podcasts, from how we edit to our interview style. Our interest in what people are thinking about outside of academia derives from the *NPR Politics Podcast* (https://www.npr.org/podcasts/510310/npr-politics-podcast). Inspired by *The Ezra Klein Show* (https://www.vox.com/ezra-klein-show-

record these interviews from our homes or offices by using the video and web conferencing software Zoom (San Jose, CA). Zoom enables us to record on different tracks for each audio source while video conferencing without the bandwidth reduction experienced with other videoconferencing software. We use the video to avoid the stilted quality and over-talking that mars telephone interviews and, hopefully, to get a better rapport going with guests through visual cues. The audio files are then edited in Audacity by Emory University graduate student Caroline Owens as part of an HBA Junior Service Fellowship. We have a clip of music that we use as at the beginning and end of episodes and sometimes as transition pieces. The music is a song Chris produced in a former life, which we chose because it has a catchy but mellow tone and, importantly, we have the right to use it. We feel strongly about not appropriating intellectual property or products simply because they are easily available on the Internet. Similarly, iTunes requires a logo to post podcasts (most podcast platforms feed to iTunes, which has the

largest worldwide distribution), so we paid an artist (Lux Lynn) to design our logo based on a photo of us.

Finally, the Sausage of Science works because we work well together. When you find good collaborations, nurture them. Not all collaborations work well or have clear divisions of labor, and, thus, those partnerships often do not last. For our podcast, Cara and Chris book the interviews, read the articles, generate questions, and conduct interviews. Caroline edits and posts the podcasts. She is welcome to contribute more, but as she is a graduate student and we are mentors at other institutions, we are careful about how much we impinge on her limited time and the demands of graduate work. Therefore, we stick to the clearly outlined responsibilities within the fellowship. But Caroline's role is critical. Editing audio can be tedious, and listening back to our own verbal hiccups is a special kind of hell from which Caroline saves us. And since she is only occasionally with us for interviews, they are fresh for her when she edits.

Grinding the Meat: Emerging Professionals

My oral defense for my proposal was one of the worst experiences of my life. Like, it was awful. It was three hours of me listening to five White people tell me how racism does not exist anymore in America and how anthropology is no longer racist and how dare I call anthropology racist. I was ripped into shreds for who I cited. I was told that I didn't cite the right people.... I was citing of course Faye Harrison, Michael Blakey, Allan Goodman...the list goes on.... The standard people, the standard people, so...I know this is b.s... One of them asked me, "Well, are you sure that... there are...really racial inequalities with respect to dental health? 'Cuz Black people may not just be brushing their teeth." (Shay-Akil McLean, podcast interview, 2019)

In addition to involving Caroline, one of the objectives of the Sausage of Sci*ence* is to promote the works of students and other junior researchers. Despite not having an abundance of time or support for it, graduate students and junior faculty are often the primary torchbearers of accessible science communication. which doesn't seem just. University of Illinois at Urbana-Champaign doctoral candidate Shay-Akil McLean is an example of a human biologist who was recommended for the pod because of his Twitter and blogging (@Hood Biologist, decolonizeallthethings.com) activism. Our interview with McLean suggests the deck was stacked against him in his first doctoral program by what appears to be anti-scientific racial bias within anthropology. Despite receiving two master's degrees from the same institution, McLean's focus on issues of racism in the way biological anthropology and genetic data are used received no support, and he ultimately decided to conduct doctoral work elsewhere. (He is now receiving better support by all accounts from adviser Charles Roseman at the University of Illinois at Urbana-Champaign.) McLean's story highlights two important things: (1) We still have a long way to go in anthropology—we are not immune to structural and cultural biases. (2) Supportive mentorship is often key to growth and success in our field, and though difficult, it can be well worth the pain and effort of finding the right program and the right mentor.

As mentioned, we are also mentors at our home institutions and use these academic origin stories to bolster our own students' flagging morale and to normalize the struggles we all experience. Another example came when Cara first encountered Notre Dame Ph.D. candidate Rieti Gengo (Episode 14) while visiting his campus to perform data analyses. Gengo came into the lab where she was working, pulled out a large plastic bag that clearly had seen better days, and plopped it on the lab bench. He pulled out dozens of tiny plastic specimen bags containing fingernail clippings in need of analysis. He picked up a handful of the laden bags, dropped his head, sighed, and said, "I

just can't do this today" (Gengo 2018). This was such a relatable moment. We have all had the experience of standing before a mountain we must climb, which never seems more insurmountable than when we are at the bottom looking up.

look at these pictures in their full richness. Here's where my bias has always been that if you want to integrate the biocultural and the adaptive, then you've got to do it in a collaborative team fashion. It has been frankly one

...the Sausage of Science is purposefully interviewee-friendly with respect to preparation, time commitment, and "softball" questions. This promotion is important especially in providing a science communication opportunity for those with less cultural capital and at a period when otherwise normal but idiosyncratic obstacles can undermine career trajectories if not put into relative context.

Thus, the Sausage of Science is purposefully interviewee-friendly with respect to preparation, time commitment, and "softball" questions. This promotion is important especially in providing a science communication opportunity for those with less cultural capital and at a period when otherwise normal but idiosyncratic obstacles can undermine career trajectories if not put into relative context. McLean and Gengo's stories bring into focus research moments that never make into peer-reviewed publications but are nonetheless important parts of the scientific process. Scientists' stories humanize and normalize the diversity of paths out there—they are the fat and spice that add so much flavor to the Sausage of Science!

Curing the Sausage: Modeling Methodology

It is hard to collect the wealth of different kinds of information that are going to allow us to of the real joys of the work that I have been able to do in Bolivia with the Tsimane project and as well as the collaborations I have had in Siberia. Because it's those opportunities then to work on projects where you have collaborators with complementary skills who can each focus on their piece of the pie and yet everybody has enough of a sense of the larger mission to hopefully allow for the individual pieces to be put together in that larger story that can be told on the biocultural and adaptive dynamics. (William Leonard, podcast interview, 2018)

Interviews with senior colleagues have also provided invaluable insight, especially about designing effective, enduring research programs. Two interviews in particular highlight the importance and benefits of building a field site with a community and not just in the

presence of its members. Northwestern University's Abraham Harris Professor of Anthropology and Director of Global Health Studies Bill Leonard describes how crucial his local collaborators have been for project design and implementation in his Bolivian and Siberian field sites, Similarly, Arizona State President's Professor of Anthropology and current HBA President Alex Brewis (Episode 21) stresses the importance of community-led programs for public health interventions regarding hygiene, stating that community inclusion at all levels of design and implementation are key to program success (Brewis 2018).

Another example comes from our Episode 23 interview with Penn State Assistant Professor of Biobehavioral Health and Anthropology Asher Rosinger. Rosinger had given a workshop on the use of big data at a recent HBA conference and had a related article in press. We honestly had not thought much about the use of big data until motivated to read the article pre-print for interview prep, whereupon it became clear how important big data are, how much is available through open access, and how we can use it in our own work and with students. These data are excellent resources for dissertations and career advancement in this time of contracting research funds (Rosinger 2018). These insights were reinforced through our interview and how exploiting this resource has helped Rosinger establish an impressive publishing network among a broad array of scholars early in his career.

Sausage Links and Strands: The Connections that Bind Us

Mallika Sarma: I went to the University of Michigan with the full intent of being an astrophysist.

Cara Ocobock: GO BLUE!
Sarma: Go Blue, Go Blue
always! And my first year there
I realized very quickly that
astrophysics was cool but not
nearly as cool as humans. So I
was a double major in psychol-

ogy and evolutionary anthropology, which at Michigan is an interdisciplinary degree between ecology, molecular biology, and biological anthropology.... I was also one of Milford Wolpoff's students, actually, also like Cara.... In my senior year thinking, "Well, I don't want to be in psychology anymore, so what do I do?" And Milford was like, "Mallika, you are too special of a person to not be an anthropologist; you need to go to South Bend, IN, and work with Agustín Fuentes." And I was like, "I don't know where South Bend is or what an Agustín is, but OK." ...Milford was my oracle and just told me what to do, and I was like, "Yeah, sure." Ocobock: That sounds familiar because I basically went to WashU because Milford told me to go to WashU. (Mallika Sarma, podcast interview, 2018)

Our interviewing process has also made apparent not just how various research threads within our field connect to a larger study and exposition of the human experience but also how much we as researchers are interconnected through academic heritages. An example was our realization that half of those we have interviewed have a University of Michigan connection. The legacy of certain schools and professors is significant in the field and reinforces that anthropology is a young discipline. It is often no more than one to three steps into a conversation before we realize our various careers have been shaped by the same few mentors. This also highlights the concern that a small number of schools disproportionately influence the production of anthropological knowledge and how many important voices and perspectives are being left out. Noticing this, we have begun to reach out to other programs and researchers, purposefully diversifying as many elements of our interviewees as we can (e.g., race, gender, career stage, institution).

Serving the Sausage

Sausage of Science is essentially an outreach and service-based pursuit but ties together the three legs of academia: teaching, research, and service. Colleagues use the podcast in their classrooms as a teaching tool, and prospective graduate students interested in pursuing anthropology have contacted us because of work we have featured. Sausage of Science has also brought together researchers, creating opportunities for connections across specialties. Finally, our podcast is a form of public outreach, and we are careful to maintain the short, conversational style that makes the Sausage of Science a down-to-earth and accessible experience for all listeners.

Podcasts serve an integrative function, as our very first interviewee noted. University of Albany Professor and cognitive archaeologist Sean Rafferty (2017) (who also provided the quote that inspired our podcast title) points out that podcasts extend the ability to take in content. Although academics often fetishize the written word and the linear process it entails, it is the spoken word and the non-linear integration of multiple humans talking at, with, and near each other that characterizes most of human evolutionary history and our cognitive integration of information. This effort further helps us increase public awareness and integrate other fields and trains of thought that keep us from becoming isolated in our silos of scientific thinking and becoming echo chambers of ourselves and our own theories.

Acknowledgements

Thank you to the Human Biology Association, Jason DeCaro, and Michaela Howells for their support. Thank you also to all of our listeners out there.

Note

¹The Sausage of Science is a podcast Cara and Chris started in 2017 and co-host for the Human Biology Association Public Relations Committee (https://soundcloud.com/humanbiologyassociation). Caroline Owens is producer for the podcast.

References Cited

Borofsky, Robert 2004 Public Anthropology. *In* The International Encyclopedia of

International Encyclopedia of Anthropology.

Brewis, Alexandra

2018 Stigma Shapes Us: A Chat with Alex Brewis Slade. Sausage of Science, Episode 21. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://soundcloud.com/humanbiologyassociation/sosepisode-21-stigma-shapes-us-alex-brewis-slade (Accessed August 22, 2019).

Gengo, Rieti

2018 Bags of Fingernail Clippings and Muslim Refugees with Rieti Gengo. Sausage of Science, Episode 14. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://soundcloud.com/humanbiologyassociation/sos14-bags-of-fingernail-clippings-and-muslim-refugees-with-rieti-gengo (Accessed August 22, 2019).

Jost Robinson, Carolyn A.

2018 In-Between Spaces with Carolyn Jost Robinson. Sausage of Science, Episode 27. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://sound-cloud.com/humanbiologyassociation/sos-episode-27-in-between-spaces-with-carolyn-jost-robinson (Accessed August 22, 2019).

Leonard, William R.

2018 Biocultural Implications of Soviet Collapse and Other Stories with Bill Leonard. Sausage of Science, Episode 16. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://soundcloud.com/humanbiologyassociation/sos16-biocultural-implications-of-soviet-collapse-other-stories-with-bill-leonard-part-b (Accessed August 22, 2019).

MacKenzie, Lewis E.

2019 Science Podcasts: Analysis of Global Production and Output from 2004 to 2018. Royal Society Open Science 6(1):180932.

McLean, Shay-Akil

2019 Yes, Anthropology is Racist: A Chat with Shay-Akil McLean. Sausage of Science, Episode 30. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://soundcloud.com/humanbiologyassociation/sos-episode-30-yes-anthropology-isracist-a-chat-with-shay-akil-mclean-(Accessed August 22, 2019).

Rafferty, Sean

2017 Sean Rafferty Talks about the Science of Skepticism. Sausage of Science, Episode 1. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://soundcloud.com/humanbiologyassociation/sausage-of-science-episode-1-sean-rafferty-part-a (Accessed August 22, 2019).

Rosinger, Asher

2018 When It Rains, It Floods: A Chat with Asher Rosinger. Sausage of Science, Episode 23. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://sound-cloud.com/humanbiologyassociation/sos-episode-23-when-it-rains-it-floods-a-chat-with-asher-rosing-er (Accessed August 22, 2019).

Sarma, Mallika

2018 Do it to the Extreme: A Chat with Mallika Sarma. Sausage of Science, Episode 22. Hosted by Cara Ocobock and Christopher Lynn. Podcast. Human Biology Association. URL:https://sound-cloud.com/humanbiologyassociation/sos-episode-22-mallika-sarma (Accessed August 22, 2019).

Scheper-Hughes, Nancy 2009 Making Anthropology Public. Anthropology Today 25(4):1.

Cara Ocobock

(cocobock@nd.edu) is Assistant Professor of Anthropology at the University of Notre Dame. She received her Ph.D. from Washington University, St.



Louis (2014) with a dissertation that measured and modeled human metabolic rates during high levels of physical activity in different environments of the American West. Her research focuses on how humans physiologically and behaviorally acclimatize and adapt to extremes of physical activity and environment. She recently started a field site in northern Finland working with reindeer herders to better understand modern human adaptations to cold climates and the physical work of herding reindeer. She has organized and participated in countless science outreach efforts, and in her spare time, is an avid powerlifter.

Christopher Lynn

(cdlynn@ua.edu) is Associate Professor and Director of Graduate Studies in Anthropology at the University of Alabama. His research focuses on



cognitive evolution, human biology, and cultural impacts on health. He received his Ph.D. from the University at Albany (2009) by examining the influence of speaking in tongues on biological stress response among Pentecostals. His most recent research investigates tattooing and immune response among Pacific Islanders. He is editor of Evolution Education in the American South: Politics, Culture, and Resources in and around Alabama (2017) and founder of an elementary school outreach project called Anthropology is Elemental (http://anthropologyiselemental.ua.edu). He was recently named a Leshner Fellow for the American Association for the Advancement of Science for science communication. In his spare time, he coaches high school soccer, teaches himself handpoke tattooing, and upcycles old pallets into hipster furniture.