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# Wild Listening: Ecology of a Science Podcast: New Aural Cultures and Digital Media

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## Wild Listening: Ecology of a Science Podcast

Danielle Barrios-O'Neill

In recent years, there has been a growing area of research focused on points of convergence between scientific and humanities discourses, with methods of interpreting cultural products drawing increasingly on other disciplines and vice versa. Ecological readings of cultural materials would be included here, *ecological* not in the traditional sense of environmental criticism, but rather focused on the elements of network relations as they play out within the living systems of cultural works. This chapter will examine the ways in which podcasts can share structural and epistemological affinities with ecological processes, engaging the conversational science podcast *Stuff to Blow Your Mind (STBYM)* as a case study.<sup>1</sup> I will argue that *STBYM*, known for its elegantly produced discourse around complex material, with episodes like 'Meet Your Bacterial Masters' and 'The Habitable Epoch', exemplifies a growing trend toward epistemologically complex methods of approach to cultural processes (Norman 2010: 39). This chapter will explore how this kind of conversational podcast can work as a delivery channel for complex material, a 'wild' approach to knowledge-making, with attention to its format, aims and medial contexts (Tierney 2015; Morton 2016). I pose this mode as one with surprising potential to challenge top-down and linear logics, and to diverge toward a more complex ecological epistemology: audio discourse compelled in large part by expressions of compound and networked forms of knowledge, where any node of dialogue is emphatically represented as part of a larger ecosystem of information.

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<sup>1</sup> Robert Lamb, Joe McCormick and Christian Saeger, *Stuff to Blow Your Mind* (Atlanta: HowStuffWorks, 2010), [www.stufftoblowyourmind.com](http://www.stufftoblowyourmind.com).

## On Wildness

Ecological metaphors for cultural processes, now relatively commonplace, have taken on interesting new dimensions in the age of network-fluency. In the arena of popular science, cultural critic George Monbiot (2013) drew on existing approaches to environmental ecology to build the cultural concept of *rewilding*, extending it from a method of restoring biodiversity to actual physical spaces, to a way of describing the deliberate activation of chaotic, ‘wild’, processes in human lives.<sup>2</sup> In ecological contexts, rewilding approaches environmental health through the introduction or reintroduction of living elements into local ecosystems—a particular species, for example—where there is then a cascading network effect that leads to greater biodiversity over time.<sup>3</sup> ‘Wildness’ in this context is a measure of biodiversity: the more rich, diverse and interconnected the species network, the wilder the environment. Likewise, cultural rewilding as posed by Monbiot is about the restoration of the ‘wildness’ of human nature, an extrapolation that links environmental health to cultural health: championing a broader re-involvement with nature in modern life, Monbiot advocates a human ‘escape from ecological boredom’ through experiences of ‘fiercer, less predictable’ ecosystems.<sup>4</sup> This involves the adoption of strategies of living that

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<sup>2</sup> George Monbiot is a zoologist and environmental columnist for *The Guardian*, as well as author of a number of books on the subject of ecology and conservation. *Feral* won the 2013 Thomson Reuters Award for Communicating Zoology and the 2014 Society of Biology Book Award. Monbiot was also a recipient of the UN Global 500 award for outstanding environmental achievement, presented by Nelson Mandela. His influential 2013 ‘Manifesto for Rewilding the World’ makes an impassioned argument for an approach to nature that is ‘about abandoning the Biblical doctrine of dominion which has governed our relationship with the natural world’ in exchange for what he terms ‘positive environmentalism.’ George Monbiot, ‘My Manifesto for Rewilding the World,’ *The Guardian* 27, May 27, 2013, <https://www.theguardian.com/commentisfree/2013/may/27/my-manifesto-rewilding-world>.

<sup>3</sup> The philosophy of restoring ecological diversity to humans as well as environments is based on the writings of leading ecologists and anthropologists including E. O. Wilson and Spencer Wells. See also David Foreman, *Rewilding North America: A Vision for Conservation in the 21st Century* (Washington, D.C.: Island Press, 2004); Michael Soule and Reed Noss. "Rewilding and Biodiversity: Complementary Goals for Continental Conservation," *Wild Earth* 8 (1998): 18-28.

<sup>4</sup> George Monbiot, *Feral: Searching for Enchantment on the Frontiers of Rewilding* (London: Penguin UK, 2013), loc. 202-255. Monbiot, ‘Manifesto.’

take into account the vast network of relationships composing environments, of which humans are but a single element. The ethos underlying the concept of rewilding is fairly non-anthropocentric, entailing a super-broad view on natural and cultural processes. As I explore *STBYM*, cultural and environmental rewilding are useful touchpoints for exploring how contemporary media express our changing relationships to our environments, where understanding the complexity of network processes has an increasingly important role to play. As I prepared to write this chapter, Joe McCormick and Robert Lamb, both writers and producers of *STBYM*, were kind enough to offer their own perspectives on how podcasting fits into contemporary knowledge ecosystems. This discussion of the podcast will focus on elements of its approach and contexts that amplify its capacity to express complexity; among these are an ‘open field’ approach that leads to a cumulative and collaborative structure, particular aspects of embodiment inherent in mobile listening, and (bio)diversity as an embedded production value.

### ***How Stuff to Blow Your Mind Works***

The format of a single episode of *STBYM* is deceptively simple. Typically, two hosts introduce and then engage in a conversation about a scientific topic of interest, discussing historical contexts and referring to recent research on the topic.<sup>5</sup> As the title suggests, the hosts focus on topics with elements of the extraordinary: the series comprises, at the time of writing, over 700 episodes since the launch of the podcast in 2010, with topics ranging from why whales beach themselves to the Bermuda Triangle,

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<sup>5</sup> For more on the ‘conversational’ science podcast, see Hayley Birch and Emma Weitkamp, ‘Podologues: conversations created by science podcasts,’ *New Media & Society* 12, no. 6 (2010): 889-909. For a concise overview of the development of the genre of science podcasts, see Ilenia Picardi and Simona Regina, ‘Science via podcast,’ *Journal of Science Communication* 7 (2) (2008): 2-4.

to why humans accessorize, to the relationship between music and mathematics, to the science of meditation.<sup>6</sup> Each individual episode can be read as is both a self-contained unit (consisting of a recorded episode, these having titles like 'The Science of Coincidence', 'Grand Theft Genome: Genestealers in the Wild', and 'Sex Cannibals of the Animal Kingdom') and a network of texts including overlapping and interlinked paratexts: supplementary material for each episode on the podcast website, like video and images; associated blog posts; user comments; user responses online; user reactions sent by email and read on the next episode. The format of *STBYM* is episodic (bi-weekly releases, approximately 55 minutes per episode) but not serial (you don't have to listen in order). While episodes occasionally reprise bits of older topics where relevant, listeners, as with most podcasts, can pick up virtually on any episode.

The register of *STBYM* can be described as drawing from conventions of talk radio, the (university) classroom, and casual chat in the relaxed American style.<sup>7</sup> This makes perfect sense: the podcast form descends from radio genealogy; research suggests that roughly 90% of podcast listeners are university educated; and the parent company, How Stuff Works, is based in Atlanta.<sup>8</sup> The style of the podcast is casual; although the podcast is edited for time and flow, the dialogue is at least partly spontaneous, where the hosts work from notes rather than a script, and are sometimes

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<sup>6</sup> You can find the episode archive for *STBYM* at <http://www.stufftoblowyourmind.com/podcasts/stbym-archive.htm>. *STBYM* is one of a network of podcasts produced by the *How Stuff Works* website. At its time of inception in the early 2000s it was a fairly simple website with posts demystifying various topics; it is now a multimedia group owned by Biucora, Ltd. publishing the website as well as 16 podcasts and ten blogs, and covering various educational topics. The evolution of the organization is a perfect example of changes in information culture more broadly: as our media diet has grown richer, so has the variety of ways in which we access and create information, with podcasting as a principal example of media which is conversational and user-driven.

<sup>7</sup> Asif Agha, "Registers of language" in *A Companion to Linguistic Anthropology* (2004): 23-45.

Jauert & Lowe argue that podcasting does not have the same well-defined listener position, tending to position listeners as interested in 'enlightenment', similar to traditional public service radio. Per Jauert and Gregory Ferrell Lowe, 'Public Service Broadcasting for Social and Cultural Citizenship' in *Cultural Dilemmas in Public Service Broadcasting* (Göteborg: Nordicom, 2005): 13-17.

<sup>8</sup> Mariam Durrani, Kevin Gotkin, and Corrina Laughlin, "Serial, Seriality, and the Possibilities for the Podcast Format," *American Anthropologist* 117, no. 3 (2015): 1-4.

hearing each other's findings and thoughts for the first time.<sup>9</sup> What results is a conversation delving into available research, writings, historical and cultural contexts for scientific issues, peppered with personal thoughts and reactions, occasional jokes and frequent tangents. None of the conversations that comprise *STBYM* offer—or seek to reach—conclusions; in fact, the narrative of each episode is typically based around posing open questions with multiple possible answers and/or approaches, giving a variety of views and opinions, giving interdisciplinary perspectives, highlighting myths and demystifying commonly misunderstood issues, but rarely posing final answers, chiming with the ethos of contemporary science. With hosts stepping into the role of casual, citizen scientists, the tone of *STBYM* tends toward the inquisitive, rather than the authoritative. The hosts frequently use qualifiers and deliver waivers to diminish their own authority, such as 'I'm not a scientist, but' or 'I think what this article is trying to say is ...' McCormick describes himself and the other hosts as 'explanatory generalists': they have, he claims, expertise in none of the topics they cover, but they have become experts in the 'process of explaining': translating scientific research and cultural context into legible narrative dialogue, and making links between scientific ideas, and 'philosophical, historical, mythological and/or psychological' ones.<sup>10</sup> In not claiming expertise, they are free to make productive errors; the tone of the podcast is very much one of 'I'm not an expert, but what I think the analysis here is suggesting is that ...' and bringing the suggested analysis into conversation with other, linked ideas and concepts.<sup>11</sup>

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<sup>9</sup> McCormick differentiates the written from the spoken knowledge unit, claiming that the main difference between preparation for a podcast and work on an article is that our podcasts are both collaborative and conversational. So on a podcast, I don't necessarily have to familiarize myself with everything that's going to be covered in the final product. Robert might read about one thing and I'll read about another, and then we sort of tell each other about it.

Danielle Barrios-O'Neill, *Interview with Joe McCormick and Robert Lamb* (2017) (see appendix x).

<sup>10</sup> *Ibid.*, [page in appendix].

<sup>11</sup> Whether the hosts' assumptions about information explicated on the show are reductive (or even at times incorrect), interesting and worthwhile avenues open up. Notably, the hosts and producers are well aware of this fact, judging by the how perception and interpretation of scientific materials are subjects that come up regularly, as an issue to be treated

The podcast is conversant with other channels where supporting paratextual content is always arriving; this includes the official *STBYM* blog and YouTube channel, including user comments; exchanges on social media with official podcast accounts and individual hosts' social media accounts, using podcast-specific hashtags; fan-maintained wikis; live shows; other podcasts within the How Stuff Works network, where hosts collaborate; and a host of audio-centric social sharing sites, all of which allow user comments and sharing. In this sense a single episode, or even the whole podcast, barely exists as a discrete entity, being rather constantly intertextually linked to a variety of other texts, authors and producers, becoming part of what might be described as a sort of textual ecosystem.<sup>12</sup> Continuously arriving paratexts, as well as the shifting relationships between every part of the textual network of even a single episode, makes for unpredictable lines of narrative, not least because the podcast's producers are always responding to paratexts; Producers cannot help but respond to paratexts; paratextual producers—or the awkwardly phrased 'pro-sumers'—naturally feed into the collective experience of the podcast.<sup>13</sup>

## **Ecological Form of the Podcast**

Critically speaking, bringing the paratextual network into the sphere of the text itself is useful as a way of characterising what is different about online, or simply contemporary tech-enabled, texts. By situating these within particular feedback and feed-forward

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critically (see, for example, 17 January 2017 episode 'Scientific Reductionism,' *Stuff to Blow Your Mind* (7 February 2017), accessed at <http://www.stufftoblowyourmind.com/podcasts/scientific-reductionism.htm>).

<sup>12</sup> For a discussion of how paratextual material influences contemporary forms across media boundaries with regard to the series format, see Alan Hook, Danielle Barrios-O'Neill & Jolene Mairs Dyer, "A Transmedia Topology of 'Making a Murderer'," *VIEW Journal of European Television History and Culture* 5(10) (2016): 124-139, <http://ojs.viewjournal.eu/index.php/view/article/view/JETHC117/244>.

<sup>13</sup> The term *prosumer* was coined by Alvin Toffler in *The Third Wave* (New York: Bantam books, 1981) and has since been adopted into discourses in marketing, media studies and a wide range of other disciplines. 'Prosumerism' describes the rise of do-it-yourself production and consumption, which have become increasingly normal in the post-computing era.

systems as they play out on the internet—where content is produced by many actors, often influenced in unpredictable ways by external factors such as the news headlines or trends in social media, and is continually new—it becomes easier to see the analogues we can draw between textual systems and biological environmental ones.<sup>14</sup> *STBYM* is a unique case within the broad category of shareable online media, as its hosts say they aim to embrace open conversations around scientific topics as a rule, and, like the other podcasts owned by its network, they actively encourage engagement across multiple platforms. As such, this podcast turns out to be an excellent forum for modelling the knowledge (eco)system, opening up fertile spaces for interchange, multiplicity and paradox. Like the ecosystem, this kind of text has a cumulative plot: as ecological philosopher Tim Morton argues, the accurately expressive ecological thought is uncertain, sustained, even boring. That is, ecology has no climactic event—it just keeps churning itself out indefinitely, a sort of conversation between various living systems. This does away with the more marketable teleology of ‘beginning-middle-end’, the more dramatic arc that tends to characterise more prime-time scientific narratives, or those produced regularly by the mass media: the typical science-news headline or Hollywood blockbuster about environmental change tend to be full of climax and rupture, sensationalist in the extreme, but the reality is rather less exciting.<sup>15</sup> As any scientist will tell you, the environment—and relatedly, science itself—is a process of slow and continuous unfolding of questions and responses, feedback and feed-forward. *STBYM*’s approach is similar, interesting but not climactic, travelling from point to point, where every node

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<sup>14</sup> Hook et al., ‘Transmedia Topology’, 2016.

<sup>15</sup> Levine, *Forms*, 23. Mackenzie Wark, also focusing on the lack of discernible teleology, argues that this style of narrativity (‘as horizontal as a pipeline’) is a precursor to capitalist realism: the story is ‘about making something out of this world, not transcending it in favor of another.’ Mackenzie Wark, *Molecular Red: Theory for the Anthropocene* (London, UK: Verso Books, 2015): 185-7.

of conversation and every episode exist conspicuously as part of what McCormick calls 'an intellectual ecosystem'.<sup>16</sup> Like Monbiot's approach to rewilding environments, *STBYM* is aimed at letting emerge over time what is 'relational, situational, flexible and multiple' in the conversational environment: a suitably complex approach to cultural forms that relies heavily on the open field.<sup>17</sup> To contextualize *STBYM* within the large and diverse category of science-related podcasts, its main differentiating points are a primary focus on conversation as a mode of inquiry within each episode, its lack of scientific 'experts' driving the conversation, and the conscious situation by its hosts and possibly its network within a knowledge ecosystem that is mostly self-determining. For example, *STBYM*'s hosts reject any imperative to address current events; this allows each episode, as well as the larger whole of the podcast, to develop according to operational rules of the textual system rather than based on market-driven strategies.<sup>18</sup>

Because this form of discourse does away with a number of controlling structures that frame other media, an episode of *STBYM* could be seen as more faithful to the reality of ecological processes than, for example, a news article, a scientific lecture in a university classroom, or a scientific paper. Matt Tierney has argued that contemporary texts are more disruptive when they occur with a conceptual open field; the benefit is to open up any text to include new kinds of uncategorisable or ateleological content, which allows formal complexity to flourish.<sup>19</sup> This kind of interpretation is useful to approaching various forms of text in that it helps to frame their value in terms of systemic processes: (legible) complexity is a valid formal goal,

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<sup>16</sup> From *Interview (2017)*: JM: 'It also does help create the sense that the HSW podcast universe is not just a list of shows, but sort of an intellectual ecosystem.' [page in appendix].

<sup>17</sup> Ibid., [page in appendix]

<sup>18</sup> For more on operational aesthetics in media, see Jason Mittell, *Complex TV: The Poetics of Contemporary Television Storytelling* (New York, US: NYU Press, 2015), loc. 880-1192.

<sup>19</sup> Matt Tierney, *What Lies Between: Void Aesthetics and Postwar Post-politics* (London: Rowman & Littlefield International, 2014): 10, 39.

in culture as well as nature. That this kind of approach exists in a fairly popular podcast forum, though this isn't yet how most people get their science news, still holds promise for public discourse around issues like climate change. This is because the open field format, with its invitation to unexpected configurations, allows everything that won't fit strategic talking points, and does away with insulating bureaucratic language and inaccessible scientific jargon.<sup>20</sup> In this sense the 'wild' podcast opens up space for disruptive knowledge production by removing what could be described as rhetorical barriers, those conventions of form that uphold structures of authority but don't necessarily produce new knowledge.<sup>21</sup> Environmental ecology is a good tool for imagining the complexity of other kinds of systems, so it's not surprising that a science podcast can work in this way: alluding continually to how things work in the natural world, the hosts of *STBYM* demonstrate reality to be 'plural and colliding, jumbled and constantly altered.'<sup>22</sup> In conversation as in natural environments, an alluvial muck is most fertile, an openness that doesn't occlude complex realities, and where fleeting contact can occur among elements that have yet to cohere into more permanent institutional and ideological forms. The approach of *STBYM* and that of those who carry out cultural and environmental rewilding efforts are in a large sense philosophically similar, in that each looks to the uncultivated or unmade space as both starting point and ending point: the ideal aesthetic in all cases is 'a kind of negativity that is elusive and relational rather than ideal or absolute,' a space of pure possibility.<sup>23</sup>

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<sup>20</sup> The use of formal or technical language in relation to science and technology is a factor frequently cited as obfuscating information and alienating audiences; see for example Sebastian Krätzig & Bartlett Warren-Kretzschmar, 'Using Interactive Web Tools in Environmental Planning to Improve Communication about Sustainable Development' in *Sustainability* 2014, 6(1): 236–50.

<sup>21</sup> Cheryl Geisler, *Academic Literacy and the Nature of Expertise: Reading, Writing, and Knowing in Academic Philosophy* (London: Routledge, 2013). Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Boston: MIT Press, 2010): 281.

<sup>22</sup> Caroline Levine, *Forms: Whole, Rhythm, Hierarchy, Network* (Princeton, US: Princeton University Press, 2015): 81.

<sup>23</sup> Tierney, *What Lies Between*, 20.

The very nature of open conversation allows the null hypothesis, the non-answer, the unexciting conclusion or lack of a conclusion, to thrive and rule—which even peer-reviewed science publications do not; that is to say that papers with unexciting findings or a null result, however valuable, are far less likely to be published than papers which indicate a positive result or are headline-friendly. This has a major impact on what enters into the body of public scientific knowledge.<sup>24</sup> Not unlike the Hollywood blockbuster, proving an overarching high theory, ie. producing a narrative climax, remains incredibly attractive as a way of marketing scientific research, despite how the nature of science itself conforms largely to the low theory: constant, fluid negotiation between a variety of possibilities. In addition, while the scientific method aims to dismantle any deep, prior model of causality as a rule, quite often the narrative modes of scientific communication confirm the politics of academic structures by adopting particular styles of rhetoric, typically that of the objective expert.<sup>25</sup> Furthermore, the technological format of podcasting is historically linked and extensively shaped by the philosophy of free and open sharing of data—something that puts it starkly at odds with the ethos of, for example, paywall-controlled scientific journals.<sup>26</sup>

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<sup>24</sup> See for example: Kerry Dwan, Carrol Gamble, Paula R. Williamson, and Jamie J. Kirkham, ‘Systematic review of the empirical evidence of study publication bias and outcome reporting bias—an updated review,’ *PloS one* 8, no. 7 (2013); Mark Peplow, "Social sciences suffer from severe publication bias," *Nature* (28 August 2014), <https://www.nature.com/news/social-sciences-suffer-from-severe-publication-bias-1.15787>.

<sup>25</sup> For specific enquiries into the politics of scientific writing, see for example Charles Leslie, ‘Scientific racism: Reflections on peer review, science and ideology,’ *Social Science & Medicine* 31, no. 8 (1990): 891-905; Malcolm N. Macdonald, ‘Pedagogy, pathology and ideology: the production, transmission and reproduction of medical discourse,’ *Discourse & Society* 13, no. 4 (2002): 447-467; Ding, Dan. ‘Marxism, ideology, power and scientific and technical writing’ in *Journal of technical writing and communication* 28, no. 2 (1998): 133-161; Paul M. Dombrowski, ‘Ethics and technical communication: The past quarter century’ in *Journal of Technical Writing and Communication* 30, no. 1 (2000): 3-29.

<sup>26</sup> From Christie Wilcox, ‘It’s time to e-volve: taking responsibility for science communication in a digital age’:

Right now, science is almost entirely a monologue given to a very specific audience. As scientists, we pride ourselves on doing meaningful, cutting-edge research and publishing it in the top-tier journals of our field. The problem is, these publications only communicate science to other scientists. Articles are locked behind paywalls, and even those that are published in open access journals still lie behind jargon walls—the barriers that keep the people we want to become more scientifically literate from understanding what we do because they do not know the terminology.

*Biological Bulletin* 222, no 2 (2012): 86, <http://www.journals.uchicago.edu/doi/full/10.1086/BBLv222n2p85>.

## Complex Listening

As a form of media that occurs, in the case of mobile listening, inside the body, the podcast form can be intimate and private in a way that textual forms rarely are.<sup>27</sup> The power of radio to 'involve people in depth', McLuhan wrote in *Understanding Media the Extensions of Man*

(1964), 'is manifested in its use during homework by youngsters and by many other people who carry transistor sets in order to provide a private world for themselves amidst crowds.'<sup>28</sup> This is probably even truer of the podcast, which, not unlike the radio drama or symphony, creates an entire aural and imaginative experience within the confines of your head.<sup>29</sup> In the case of *STBYM*, that experience is one of a conversation in which you are, depending on how you listen, either a passive observer or an imaginary active contributor. While *STBYM* isn't an 'authoritative podcast' where listeners under pressure to pay attention, it's still present in the body in the form of sound vibrations, unlike, for example, a painting on an office wall that you pass on the way to your desk.<sup>30</sup> Texture also matters. The ear, McLuhan, 'is hyperesthetic compared to the neutral eye'; the auditory sense is delicate, sensitive, involved: '[i]f we sit and talk in a dark room, words suddenly acquire new meanings and different textures. ... All those gestural qualities that the printed page strips from language

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<sup>27</sup> Margaret Bradley and Peter J. Lang, "Affective reactions to acoustic stimuli," *Psychophysiology* 37, no. 2 (2000): 204-215.

<sup>28</sup> Marshall McLuhan, *Understanding Media: The Extensions of Man*, New Ed Edition (Boston: MIT Press, 1994): 298.

<sup>29</sup> Richard Berry argues:

What has changed since podcasting began is that podcasters have developed aesthetics that are notably different to linear radio. ... podcasts have developed definite features that are distinct from ... podcasting ... offers, in many instances, a sense of 'hyper-intimacy'. Podcasts are listened to in an intimate setting (headphones), utilizing an intimate form of communication (human speech). Furthermore, in many cases, podcasts are presented by people from within a listener's own community of interest or by people she/he may already have a relationship with via social media and are frequently recorded in a podcaster's own personal or domestic space.

Berry, "Part of the establishment: Reflecting on 10 years of podcasting as an audio medium" in *Convergence* 22, no. 6 (2016): 666.

<sup>30</sup> Lars Nyre found that subjects of a study found BBC podcasts difficult to listen to on the move, as they found they were 'too authoritative in tone' and 'this type of content requires enhanced concentration'. Nyre, 'Urban headphone listening and the situational fit of music, radio and podcasting,' *Journal of Radio & Audio Media* 22, no. 2 (2015): 295.

come back in the dark, and on the radio.’ The auditory experience also happens *in time*, involving on some level because, even when it’s ambient noise, it still flows past like a river; it is something to be tuned into or ignored, but cannot be absent. At the same time, the radio ‘gives privacy,’ while producing what McLuhan calls ‘the tight tribal bond of the world of the common market, of song, and of resonance. Radio,’ he wrote in 1967, ‘restores tribal sensitivity and exclusive involvement in the web of kinship.’<sup>31</sup> This might explain something of why the style and tone of *STBYM* work so well; our ‘tribal sensitivity’ is awakened especially well by a format that is friendly, social, pleasantly intimate. This frames the podcast experience as a form of imagined community, where McLuhan’s ‘common market’ is that of science, its community vastly networked.

The listening device, Jean-Paul Thibaud argues, creates an ‘involvement shield, momentarily allow[ing] us to position ourselves outside of the social theatre’ even as we move through it, mediating all relations to it.<sup>32</sup> The claim calls to mind a ‘sound-shower’ I witnessed in Oslo Airport circa 2007. This was a public installation wherein airport occupants could enter a space demarcated only by a circle on the ground and a large, shower head-like speaker above, to be immersed in a sonic environment: a rainforest, a thunderstorm, a meadow. The concept was simple and ideal, providing an oasis of sonic wilderness in an environment otherwise characterized by varying degrees of anxiety, and illustrates Thibaud’s argument that sound can demarcate space and perform spatial interventions. In this case, the airport is a space characterized by continuous movement, where the sound-shower was a space of relative stasis; in the case of the mobile podcast listener moving through an

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<sup>31</sup> McLuhan, *Understanding Media*, 303.

<sup>32</sup> Marie-France Kouloumdjian, ‘Le walkman et ses pratiques, rapport de recherché,’ *Multigraphie* (Lyon: Center for National Scientific Research, 1985): 16.

urban environment, almost everything is mobile (the listener, the podcast micro-ecology, and various moving elements of the city around), performing a more complicated theatre of moving parts. In moments where sound environments intervene upon each other, as when someone is listening to a podcast while moving through a city, the removal from the 'social theatre' is a powerful demarcation, a way to access the wild amid sometimes overwhelming civilization.<sup>33</sup>

The sound-shower, and the podcast, only constitute a partial removal, however—we still see what's around us, we will probably remove our headphones if someone tries to ask us for directions—but perhaps this is where even more interesting interactions between spaces takes place, as these interventions can create fertile interchange. The urban subject receives, at any given moment, a vast amount of information: some of this information, like a street sign, is more likely to passively intervene into the stream of attention which is engaged with the podcast; some might directly interject, for example a car horn; some might be subconsciously received; all of this is drawn into the listener's purview, with multiple levels of associative linking, active and passive cognitive processes, happening at any given moment.<sup>34</sup> The listener is also engaged in a sort of noise-sifting exercise, parsing the useful patterns from noise, a normal state of living but also, again, heightened in intensity by the multiple streams of incoming information from overlapping experiences; there is more noise to sift, there are more patterns to notice. These patterns impede upon each other, creating an altogether more complex experience of being somewhere—any place becomes more than one place. For the mobile listener, incoming information

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<sup>33</sup> Thibaud, Jean Paul, 'The Sonic Composition of the City,' in M. Bull & L. Black (Eds) *The Auditory Culture Reader* (London, UK: Berg, 2003): 329–342.

<sup>34</sup> See for example Jatin Srivastava, 'Media multitasking performance: Role of message relevance and formatting cues in online environments,' *Computers in Human Behavior* 29, no. 3 (2013): 888-895.

from either world can be included in the train of thought—now more accurately described not as a train but as a network, a system of thought.<sup>35</sup>

The ‘wild’ format of a podcast like *STBYM* links to this broader mobile listening experience in interesting ways. Thibaud argues that the screen of sound produced by the listening device simultaneously encloses and reframes the listener’s experience of the environment around; as she moves through external space, the audio is like a mobile sound-shower, a moving biome constantly overlaying or intervening upon the administrated outer world—particularly because it wanders.<sup>36</sup> The ethos of the world inside the biome of the wild podcast is characterized by an un-administrated movement from point to undetermined point; it continues like any audio to intervene upon environmental experience, not unlike a sort of augmented reality layer. The micro-ecology of the wild audio serves to, as Thibaud describes it, ‘derealize’ urban space: being simultaneously within and outside it, its reality partially displaced, the mobile listener de-administrates and re-administrates the space based on the paths she may take, spatially and mentally. The city itself becomes more wild, as the listener is stimulated to a greater diversity of possible cognitive outcomes.<sup>37</sup>

## The Value of Audio (Bio)diversity

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<sup>35</sup> The relationship between auditory processing and complexity is a compelling area spanning a number of disciplines, and much of this body of work suggests that this is a productive relationship; a 1999 study found, for example, that ‘audio cues can provide useful information about processes and problems, and support the perceptual integration of a number of separate processes into one complex one.’ William Gaver, Randall B. Smith, and Tim O’Shea, “Effective sounds in complex systems: The ARKola simulation” in *Proceedings of the SIGCHI Conference on Human factors in Computing Systems* (New York: ACM, 1991): 85-90.

<sup>36</sup> The phrase ‘screen of sound’ I borrow from McLuhan, who writes, “So much do-it-yourself, or completion and “closure” of action, develops a kind of independent isolation in the young that makes them remote and inaccessible. The mystic screen of sound with which they are invested by their radios provides ... privacy ... and immunity from parental behest. (303)

<sup>37</sup> Jean-Paul Thibaud describes how “Using a walkman in public places is part of an urban tactic which consists in decomposing the territorial structure of the city and recomposing it through spatio-phonetic behaviors. Double movement of deterritorialization and reterritorialization. This new urban nomad is here and there at the same time, transported by the secret rhythm of his walkman and in direct contact with the place he’s walking through. Thibaud, ‘The Sonic Composition of the City’ in *The Auditory Culture Reader* (London: Bloomsbury, 2003): 330.

In characterising *STBYM* as a ‘wild’ podcast, the crucial element is its capacity for being extremely productive in terms of the variety of possible outcomes: the (bio)diversity of this particular ecology of discourse. To return to rewilding as an analogue, that strategy involves an informed roll of the dice in an uncontrolled environment: wolves are re-introduced into Yellowstone National Park, triggering an unfolding cascade effect that results in the flourishing of many species and habitats throughout the local environment. (That actually happened.)<sup>38</sup> For rewilding, the more complex an environment’s existing ecosystems, the less predictable the outcomes; in the extremely biodiverse Great Barrier reef, for example, rewilding efforts may be more complicated. Rewilding creates a predictable burgeoning of fresh biodiversity of unpredictable type; while it’s difficult to know in advance what exactly will happen, it is always likely that there will be a network effect that yields new ecological richness.<sup>39</sup> This is a creative ecological effort, and one that diverges significantly from what goes on in the highly controlled efforts of traditional conservation: ‘[r]ewilding has no endpoints, no view about what a “right” ecosystem or a “right” assemblage of species looks like. It does not strive to produce a heath, a meadow, a rainforest, a kelp garden, or a coral reef. It lets nature decide.’<sup>40</sup>

Compare this to *STBYM* host Robert Lamb’s characterization of their production process, which avoids a ‘focus on creating a perfect, idealized expression’ in favor of the spontaneous ecosystem, where the conversation is intentionally ‘organic and unformalized.’<sup>41</sup> Like the rewilded landscape, this is a creative approach

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<sup>38</sup> William J. Ripple, Robert L. Beschta, Jennifer K. Fortin, and Charles T. Robbins, ‘Trophic cascades from wolves to grizzly bears in Yellowstone,’ *Journal of Animal Ecology* 83, no. 1 (2014): 223-233.

<sup>39</sup> E. Borer, E. Seabloom, J. Shurin, K. Anderson, C. Blanchette, B. Broitman, and B. Halpern, ‘What determines the strength of a trophic cascade?’ in *Ecology*, 86 no. 2 (2005): 528-537.

<sup>40</sup> Monbiot, *Feral*, loc 226.

<sup>41</sup> As for preparation, McCormick describes it as ‘very uncomplicated and informal’:

that sees production are an evolving system comprising myriad unpredictable interactions, and as such must welcome continuous restructuring.<sup>42</sup> In that sense either process seems half-structured, half-divergent, with discovery holding sway over intention in a way that underlines the speculative nature of the conversations. The hosts supply real-world examples, construct hypothetical scenarios to illustrate points, and make lateral moves across knowledge disciplines to produce insight about how and why particular findings might be worth noting; they seem to easily translate from one register to another (for example, from the academic to the lay, or from neuroscientific concepts to what's in your lunchbox). This mode of thinking-conversing results in a rhizomatic experience of scientific and cultural concepts, a formalism that implicitly supports a 'nuanced understanding of the many different and often disconnected arrangements that govern ... experience.'<sup>43</sup> The micro-ecology of the wild podcast space is thus necessarily always transitional, always unsettled; to limit a conversation to a particular moment or place would immediately impede the ability to place it within specifically vast networks of knowledge.<sup>44</sup>

This approach to production is driven by a rich and unromanticised realism, where the only qualifier of big wilderness is genuine (bio)diversity, without value judgments on what that diversity contains in particular: the aesthetic is relatively 'oozy',

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I'd say the most common route looks like this: Robert and I email each other saying, "Hey, have you ever read about X? I was thinking that could be interesting for an episode." Then we bat the idea back and forth a little bit ... If we decide to move forward with it, we begin to collect and share resources for research. We create a shared Google document and paste in ideas, citations, links and so forth. We share any books or PDFs we have that the other might want to read. Then we go to work creating an outline for the episode in the shared document and filling it with notes from our research. The episodes are not scripted, but we do work from notes created in our shared document, so what you hear in the end is a mixture of comments we prepared ahead of time and spontaneous, free-flowing conversation.

*Interview, 2017, [page in appendix].*

<sup>42</sup> Lamb explains how 'discoveries in the research force you to restructure.' *Ibid.*, [page in appendix].

<sup>43</sup> Levine, *Forms*, 18. Lorri G. Nandrea, *Misfit Forms* (New York: Fordham University Press, 2015): 3. The incipient species or forms that Nandrea traces include, for instance, direct relationships between typology and affect in *Jane Eyre*, an alternative plotting structure in *Robinson Crusoe*, and the functions of wonder and negative capability in novels by Charlotte Brontë and Charles Dickens.

<sup>44</sup> Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010): 26.

ambient, with no particular storyline and no definite background or foreground.<sup>45</sup> The epistemological function of all this ambience, or ooze, is to provide a space out of which knowledge can emerge—organically, so to speak—rather than being imposed; the knowledge equivalent of Benjamin’s *flâneur*, without the necessity of an urban space to wander in (although it probably helps).<sup>46</sup> That is, *STBYM*’s particular aesthetic leaves space for a variety of gestures which are not obviously shaped by intention (read: ideology), and as a result a wandering ambience becomes a substrate for the low-key insertion of ‘wild’ elements into the relatively uncontrolled environment of the conversation, letting it simply unfold.<sup>47</sup>

## Concluding Thoughts

The aesthetic of the ‘wild’ podcast is driven by changes in network-era culture, so it’s not surprising that there are analogues in how science itself is performed, changes in how the scientific community actually carries out research. In recent decades there have been important movements in the direction of question-focused, flexible, intuitive approaches, an increasing trend toward discovery-driven (versus hypothesis-led) scientific research: enabled by computing technology in particular, discovery-driven research analyses data to undetermined ends, rather than imposing a hypothetical model, with its implicit biases, from the start.<sup>48</sup> *STBYM* could be seen as either

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<sup>45</sup> Morton argues for a very particular ecological innovation in the arts, a new aesthetic that is primarily ambient, ‘oozes’, ‘drifts’ and wanders relatively aimlessly, like a dust mote or a jellyfish. Morton, *Ecological Thought*, 102-7, 125.

<sup>46</sup> Walter Benjamin, *The Writer of Modern Life: Essays on Charles Baudelaire* (Cambridge, MA: Harvard University Press, 2006).

<sup>47</sup> Says McCormick,

We’re not always well-versed in the topic before we begin researching for an episode, so often we don’t know what there is to know until we get into the weeds. Some new tangents and subtopics come into focus; some ideas we had in the beginning turn out to be dead ends. So the final structure and contents of the episode is really more an emergent product of our research and reading than anything else.

*Interview, 2017, [page in appendix]*

<sup>48</sup> Importantly, this trend is linked to increasingly powerful methods for using and manipulating data in the sciences, which enables more effective intuitive modelling methods. In ‘Equipping scientists for the new biology,’ the authors describe

reflecting, or responding to the same conditions as, scientific culture on the whole, whose implicit philosophies are in transformation, too. Perhaps by being positioned between the commercial and the grassroots, radio and internet, science and recreation, *STBYM* gives special access to a blended approach to science communication, favouring casualness, accessibility (and possibly reductiveness) over more authoritative styles; still, it has to be said that this particular podcast frequently and as a rule returns to scientific research, in a critical mode, for verification and inspiration of further discussions, so it is never divorced from the bureaucracy and politics of academic research, either. Rather than posing this kind of approach to science discourse as a definite alternative, it might be more constructively seen as another way—a particularly elegant way—to represent and problematize the state of humanness amid intractably complex environmental processes that determine our realities.<sup>49</sup> This is supported by how approximations of complex principles play out in the ‘wild’ podcast, elements such as nonlinearity, accumulation and diverse emergence.<sup>50</sup> In other words, the format takes as a premise and also actively demonstrates in a number of ways how humans (along with the conditions in which we exist) are ecological. Though it may not be precisely what Monbiot argues for when he insists on reviving wonder and excitement through confrontations with nature, it still works: engaging with this kind of audio experience is a form of rewilding in itself, a

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‘discovery science,’ as cataloguing the elements of a system without any hypotheses on how it works. Hypothesis-driven science is described as being smaller-scale, narrowly focused, and using a limited range of technologies. See Ruedi Aebersold, Leroy E. Hood, and Julian D. Watts, ‘Equipping scientists for the new biology’ in *Nature Biotechnology* 18, no. 4 (2000): 359-359. So-called ‘Bayesian’ or ‘frequentist’ systems of analysis arrived in the 1960s, with the arrival of modern computing technologies. For a seminal description see Jerome Cornfield, ‘Bayes theorem’ in *Revue de L’Institut International de Statistique* (The Hague: SI World Statistics Congress, 1967): 34-49. A related change is the increasing use of Bayesian inference in statistical scientific analysis, which operates with the understanding that, unlike in a more orthodox view of scientific sampling, everything can be treating as a probability, and outcomes are always open to updating—effectively a statistical method that poses every conclusion as a draft. Again, this is an intuitive approach to data, where the model is created to fit the data rather than vice versa.

<sup>49</sup> Morton, *Dark Ecology*, 42.

<sup>50</sup> N. Katherine Hayles, ed. *Chaos and Order: Complex Dynamics in Literature and Science* (Chicago: University of Chicago Press, 1991): 25-27, 31-34.

rewilding of the conception of knowledge structures, the nature of humanness, and the complexity of reality, through the interventions of an ambient ecology of knowledge.

‘When you are sufficiently creeped out by the human species,’ Tim Morton writes in *Dark Ecology*, ‘you see something even bigger than the Anthropocene looming in the background’. He refers to the uncanny-ness of being human, when humanness is considered in the context of giant, looming, tiny, interconnected, neverending ecological systems.<sup>51</sup> This is a similar uncanny-ness to that which arises from listening to *STBYM*’s episode ‘So Cute I Could Eat You Up’, on the phenomenon of finding babies delicious-looking (for which there is a scientific basis), or ‘Sexbots: From Objectification to Therapeutic Surrogates’ on how sexbots are becoming scientifically compelling tools, and subjects.<sup>52</sup> Dealing with science and human culture simultaneously inevitably entails dealing with the deeply weird, the almost-unthinkable; blowing the mind, so to speak, in order to represent more complex and accurate models of human being in the world.<sup>53</sup> Lamb explains that giving fair treatment to particular topics requires, as a result, a certain willingness to confront intellectual discomfort, what he describes as ‘reaching through the miasma of cultural revulsion to grasp the truth.’ The creepiness, the uncanny-ness is an important part of the scientific picture. The show, says McCormick, ‘is about helping people feel the weirdness of reality. The real world, ... is reliably much stranger and more surprising than we imagine. Bringing people to that point of recognition is the core of what we do.’<sup>54</sup> Describing the conversational podcast as a ‘wild’ method of approaching

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<sup>51</sup> Morton, *Dark Ecology*, 42.

<sup>52</sup> Robert Lamb, Joe McCormick and Christian Saeger, ‘So Cute I Could Eat You Up’, *Stuff to Blow Your Mind* (Atlanta: HowStuffWorks, 2015). <http://www.stufftoblowyourmind.com/podcasts/so-cute-i-could-eat-you-up.htm>. Robert Lamb, Joe McCormick and Christian Saeger, ‘Sexbots: From Objectification to Therapeutic Surrogates’, *Stuff to Blow Your Mind* (Atlanta: HowStuffWorks, 2017). <http://www.stufftoblowyourmind.com/podcasts/sexbots.htm>.

<sup>53</sup> Morton, *Dark Ecology*, 42.

<sup>54</sup> *Interview*, 2017, [page in appendix]

science is perhaps just one way of drawing attention to the ways in which complexity can come to be represented or performed by the media, within a larger argument that modelling complexity is necessary to understanding human and cultural processes, just as it's necessary to understanding natural processes. Modes of cultural and scientific rendering that draw both philosophically and aesthetically on post-computing movements in science and mathematics are extremely compelling, both conceptually and practically, if we hope to cultivate more effective ways of understanding how the world works; this is a point with resonance for every complex social and environmental issue that we face today.

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