

UNIVERSITY OF CALIFORNIA SAN DIEGO

Voluntary Payments in Music: The Future of Creative Economies?

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degree Doctor of Philosophy

in

Music

by

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Chair

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Abstract of the Dissertation

Voluntary Payments in Music: The Future of Creative Economies?

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Voluntary payment platforms, such as Bandcamp and Patreon, are notable because they challenge both the traditional music industry model, in which fans must pay for music in order to obtain access to it, and the assumption within classical economics that humans are purely self-interested, rational actors. Here, fan behavior on Bandcamp is analyzed in three studies: a quantitative comparison of Bandcamp and non-Bandcamp users, a

qualitative and quantitative examination of how Bandcamp users assign value to music and artists, and a quantitative analysis of Bandcamp transactions. Through this, we gain an understanding of Bandcamp users' motivations for using the platform to support artists as well as the factors that drive different levels of financial support. Furthermore, we establish the potential for voluntary payments to scale to more artists and fans, as well as the limitations to scaling, if they were to be adopted more widely by the music industry and integrated into the streaming ecosystem.

Chapter 1

Introduction

"No one buys music anymore." So goes the 21st century music industry refrain. On the surface, things look grim: global recorded music sales plummeted from a peak of almost 40 billion dollars in 1998 to a low of 15 billion dollars in 2014.¹ Gone are the giants of music retail, such as Tower Records² and the Virgin Megastore,³ not long ago fixtures of prime shopping areas, as are many mom-and-pop record stores that were once ubiquitous throughout the United States.⁴ Big box retailers, such as Best Buy and Walmart, have either completely eliminated or significantly reduced their catalogs. Difficult times have also created excellent opportunities for those claiming to have the tonic for the industry's ills, and in the last 17 years we have seen no dearth of messiahs that each claim to be the savior of the music industry. A quick glance at the numerous initiatives launched since the advent of file-sharing reveals a long list

¹ John McDuling, "The music industry has hit its rock bottom," *Quartz*, April 14, 2015, <http://qz.com/383109/the-music-industry-has-hit-its-rock-bottom/>.

² "Tower Records Project," last accessed May 14, 2016, <http://towerrecordsproject.org>.

³ "Virgin Megastore," last accessed May 14, 2016, <https://www.virgin.com/company/virgin-megastore>.

⁴ Curious exceptions do exist. Virgin still operates its Megastores in the Middle East and Tower Records in Tokyo's Shibuya neighborhood remains as vital as it ever has been. Mom-and-pop record stores that focus on vinyl are making a comeback thanks to rapid growth in sales of the format.

of failed attempts to stem the industry's decline, many of which in fact backfired and contributed to its downfall: litigation by the Recording Industry Association of America (RIAA) and record labels of both file-sharing platforms and their alleged users,⁵ Digital Rights Management (DRM), Apple's iTunes,⁶ secret customer tracking,⁷ lobbying to influence legislation,⁸ blockchains,⁹ and British Pop Stars.¹⁰ The industry's newest savior and poster-child of "disruption" is online streaming, embodied in Spotify and Pandora, as well as their various copycats. While streaming does in fact represent a major concession by the industry to actually give consumers what they want, its practical implementation and economic reality are casting doubts on its ability to

⁵ Aram Sinnreich, *The Piracy Crusade*, (Amherst: University of Massachusetts Press 2013), 60-62.

⁶ Anita Elberse, "Bye Bye Bundles: The Unbundling of Music in Digital Channels," *Journal of Marketing*, 74 (2010): 107-123. Elberse argues that much of the decline in recorded music is due to unbundling in digital distribution channels, which was first introduced in the iTunes Store.

⁷ Sinnreich, *Piracy Crusade*, 131-132.

⁸ *Ibid.*, 163.

⁹ Jamie Bartlett, "Imogen Heap: saviour of the music industry?" *The Guardian*, September 6, 2015, <http://www.theguardian.com/music/2015/sep/06/imogen-heap-saviour-of-music-industry>.

¹⁰ Steve Knopper, "Can Adele's '25' Save the Music Business?" *Rolling Stone*, November 5, 2015, <http://www.rollingstone.com/music/news/can-adeles-25-save-the-music-business-20151105>.

create a sustainable revenue stream for even the most popular content creators.¹¹

The industry's decline and the failure of numerous strategies to stop it should come as no surprise. Yes, of course, there is piracy, and an ongoing debate as to what role it has played in declining sales.¹² However, the piracy discussion is largely a smokescreen that disguises a much bigger structural problem underlying the traditional music industry as well as its digital initiatives. Namely, the industry's business model is predicated upon the monopolization of content, the enforcement of that exclusivity through the copyright system, and the recouping of the costs through the sale of products that are cheap (now free) to produce but expensive to consume, such as CDs and mp3 files. While all of these tenets were a natural fit for the 20th century retail economy, they are all fundamentally at odds with the basic principles of the digital economy, which is organized around openness, decentralization, and a relentless drive towards free.

To elaborate further, perhaps the best illustration of opposition in the realm of openness is the fight between the content and tech industries in 2011 and 2012 over the PROTECT IP and Stop Online Piracy Acts (SOPA). While the

¹¹ David Lowery, "The Streaming Price Bible – Spotify, YouTube and What 1 Million Plays Means to You!" *The Trichordist*, November 12, 2014, <https://thetrichordist.com/2014/11/12/the-streaming-price-bible-spotify-youtube-and-what-1-million-plays-means-to-you/>.

¹² Robert Levine, *Free Ride* (New York: Anchor, 2011) 62-65. For a contrasting view, see Sinnreich, *Piracy Crusade*, 94-118.

content industry lobbied for these acts as a way to block access to foreign sites that hold copyrighted material, the tech industry countered with a powerful campaign, which argued that blocking access would “break the internet.”¹³ Regarding the second point, decentralization and the enforcement of copyright are fundamentally at odds not only due to the number of actors that now must be controlled (millions of users versus one Napster that could easily be taken to court), but also because crowd-sourced platforms, such as YouTube, are subject to the “safe harbor” provisions of the Digital Millennium Copyright Act (DMCA), which absolve them of copyright infringement when users upload infringing content, provided they respond in a timely manner to takedown notices from the copyright holder.¹⁴ It is important to point out that these platforms’ existence is not possible without the corollary of weakened copyright enforcement: if YouTube was forced to pay infringement penalties every time a user uploaded infringing content, it would be out of business tomorrow.

Finally, the most important opposition is between the industry’s business model, which requires significant investment to create content (artist advances, production costs, and promotional campaigns) that subsequently has to be recouped by selling products at a price far above their marginal cost, and the drive towards free in the price of digital goods. Chris Anderson,

¹³ Mark Lemley, David S. Levine, and David G. Post, “Don’t Break the Internet,” *Stanford Law Review*, 64 (2011): 34-38.

¹⁴ “DMCA,” last accessed May 14, 2016, <https://www.eff.org/issues/dmca>.

editor-in-chief of Wired, argues that the digital economy behaves according to the Cournot Theorem (named for French philosopher Antoine Augustin Cournot), in which competition between many firms drives prices down to the marginal cost of the product.¹⁵ In the digital world, that marginal cost rapidly approaches zero as bandwidth and other costs halve every year, following exponential trajectories predicted by Moore's Law.¹⁶ Anderson refers to this phenomenon as an inevitable "force of economic gravity"¹⁷ and it is evident that a strategy reliant upon charging for digital music quickly runs into trouble in a world in which technology is putting deflationary pressure on all digital goods.

But something else is also happening. Against this backdrop of a declining music industry and the increasing expectation of free in the digital world, music consumers are increasingly making the choice to voluntarily pay for music. I say voluntarily because today it is easy to find any piece of music ever recorded by any artist for free, either through illegal channels or perfectly legal ad-supported services. According to classical economic theory, a rational, self-interested consumer should always choose the lowest price for the same good, and yet, they do not. Music fans are flocking to platforms, such as Bandcamp, which allow fans to pay more than the minimum price set by the artist. Other fans make the decision to support artists before an album is

¹⁵ Chris Anderson, *Free* (New York: Hyperion, 2009), 172.

¹⁶ *Ibid.*, 13.

¹⁷ *Ibid.*, 173.

even recorded through crowdfunding sites such as Kickstarter, Indiegogo, and PledgeMusic. What is notable about this trend is that, unlike the industry's many promised saviors, these platforms challenge all of the principal tenets of the music industry that I described above (monopolization, enforcement of exclusivity, and high price), and are reflective of a fundamental reorientation in copyright, which, as law and digital media scholar Nicolas Suzor describes, focusses "less on the proportion of people who free-ride, and more on the absolute number of people who choose to pay."¹⁸

This positive reframing of the relationship between artist, label, and consumer is far from trivial and represents a shifting of agency away from the industry to the consumer. In a world in which the consumer feels powerless vis-a-vis an industry juggernaut, he or she will naturally seek ways to reassert agency and a sense of self-determination, whether it be through using torrent sites or installing ad blockers. However, unlike the traditional music industry model, the voluntary payment platforms give agency rather than taking it away: it is now up to the consumer whether or not an album is even recorded, whether or not the tour happens, and whether or not the artist makes a living. This relationship has an important affective dimension as well, in which the artist is making an emotional appeal to the consumer and giving them the trust that they will make the right choice. And in an industry in which consumer trust has

¹⁸ Nicolas Suzor, "Free-Riding, Cooperation, and 'Peaceful Revolutions' in Copyright," *Harvard Journal of Law and Technology*, 28 (2014), 141.

been significantly eroded through years of lawsuits, DRM, and other debacles, trust is powerful currency.

The aim of this dissertation is to examine what music fans do with that trust and what implications this has for the future of creative production and consumption. Why do fans choose to pay voluntarily, breaking with the classical model of the self-interested actor? Are there differences in how consumers behave based upon their income, location, age, gender, or ethnicity? Do fans of different genres support musicians differently? Is there a greater propensity to fund an emerging, independent, or established artist? Can voluntary payment platforms create their own culture and normative practices, which change consumer behavior over time?

To address these questions, I will first delve into the theory behind voluntary payments, which draws upon research from a number of fields, including law, cognitive science, psychology, and behavioral economics. This theory is presented thematically in Chapter 2 along with some of the relevant history of the music industry in the digital era. Moving from the theoretical to the actual, Chapters 3 and 4 outline the history of voluntary payments in the digital music economy, which I separate into the first, experimental wave of initiatives by bands such as Radiohead and Nine Inch Nails, and the second wave, in which insights from early experiments gave rise to platforms such as Bandcamp, PledgeMusic, and Patreon. Chapter 5 presents the pertinent, unanswered questions about the users of these platforms as well as my interdisciplinary methodological approach to answering them, which aims to

provide a multidimensional illustration of fan behavior through the use of market research, data mining, and qualitative analysis. The following three chapters present my research findings on users of Bandcamp, beginning with a quantitative comparative study of Bandcamp users and non-Bandcamp users in Chapter 6. Chapter 7 examines findings from qualitative research, which delves deeper into questions of fan motivations and attitudes towards artists, and Chapter 8 presents an analysis of Bandcamp sales transactions. Implications of findings from these three studies are discussed in Chapter 9, along with areas for further research.

Chapter 2

Literature Review

Existing literature on voluntary payments is largely located in the fields of economics, where voluntary payments are of interest because they challenge the classical notion of a rational self-interested consumer, and law, which paradoxically has been responsible for launching some of the most ardent opposition to current copyright regimes.¹⁹ These scholars, in turn, often draw on fields concerned with various dimensions of human behavior, including experimental psychology, anthropology, and sociology, in order to illuminate potential motivations for consumers' prosocial behavior. These motivations include a desire to follow social norms, notions of fairness and reciprocity, empathy, self-signaling, framing effects, and impact.

In examining normative behavior, a useful distinction is to separate notions of what one is supposed to do, which manifests as habit, routine, custom, and ritual, and conceptions of morality in which we describe an action as right, just, or fair. Concerning the first category, Belsky et al. note that “we

¹⁹ Most notable in this field is Harvard Law School's Lawrence Lessig, whose Creative Commons licensing scheme was the first major challenge to the existing copyright system. Lessig was concerned particularly with creating a system that 1) enables the progress of digital creativity through enabling sampling, remixing, and mashups and 2) promotes the proliferation of creative content through file-sharing without commercial exploitation. For more detail, see Lawrence Lessig, *Free Culture: The Nature and Future of Creativity* (New York: Penguin, 2005).

have a widespread practice of doing what is just plain normal; that is, conforming to social norms."²⁰ While explaining prosocial behavior as habit may seem to rob the subject of its mystique, it is never a good idea to underestimate the influence of mental shortcuts in our decision-making. As recent literature from behavioral economics and cognitive science demonstrates, decisions are expensive, both from a metabolic standpoint and in the costs they may impose on us by inhibiting our ability to make more important future decisions.²¹ From a biological standpoint, the brain burns glucose in order to perform its various functions, and problem solving in the form of decision making requires a higher consumption of energy. Until around the last century or so, human life existed in a paradigm of scarcity and uncertainty as far as the food supply was concerned. Therefore, behavior that encouraged a conservation of calories would have been favored from an evolutionary standpoint. Furthermore, that same glucose that powers the brain also powers our muscles and gives us the energy to fight, flee, or hunt. Therefore, energy expended unnecessarily in making decisions could have life-threatening consequences when our ancestors were faced with a predator or attacked by a rival tribe.

Not only are there metabolic consequences to making decisions, the more decisions we make, the less likely we are to make any decisions in the

²⁰ Leah Belsky et al., "Everything in its Right Place: Social Cooperation and Artist Compensation," *Mich. Telecomm. & Tech. L. Rev.* 17 (2010), 44.

²¹ John Tierney and Roy Baumeister, *Willpower* (New York: Penguin, 2011).

future or be able to have the willpower to resist temptation. This phenomenon, termed decision fatigue, been shown to have profound implications in the modern world. Perhaps the most disturbing study in this field is an examination of decisions made by judges in Israel regarding whether or not to parole a prisoner. Contrary to our notions that justice is served based upon the merits of a particular case, the investigators found that as the time from the judge's last meal increased (and blood glucose levels decreased) so did the rate of denying parole. In fact, the effect of the meals was so powerful that "the percentage of favorable rulings drop[ed] gradually from $\approx 65\%$ to nearly zero within each decision session and return[ed] abruptly to $\approx 65\%$ after a break."²² In effect, the decision not to grant parole is not a decision at all, but a delaying of that decision until the next parole hearing. Rather than being forced to make a decision today, a judge can deny parole knowing that the prisoner will have another hearing in the future. Decision fatigue can also manifest as a decrease in willpower and inability to resist temptation. While this phenomenon has been only recently investigated by academics, supermarkets have been aware of this for a long time, tempting consumers with junk food and tabloids at the checkout aisle when their willpower has been depleted through making numerous shopping decisions.²³

²² Shai Danziger, Jonathan Levav, and Liora Avnaim-Pesso, "Extraneous Factors in Judicial Decisions," *Proceedings of the National Academy of Sciences*, 108 (2011).

²³ Tierney and Baumeister, *Willpower*.

Given that decisions are expensive, social norms have an important function in reducing the cognitive load associated with decision making. For example, rather than trying to calculate an appropriate tip for a meal or other service, we will often ask someone “how much should I tip?” Having a social guideline eliminates one more decision and also absolves any potential guilt or need to rationalize our actions in the future: we did what we were supposed to do and we move on. A suggested price for a digital music download functions the same way: we click where we are supposed to, make the purchase, and move on without ever thinking about what the price should be. What is notable about this behavior is that it arguably lacks a moral dimension: we do not pay the recommended price because we morally believe that it is the right thing to do, what the artist deserves, or that it satisfies some notions of fairness. We do it because it is the easy choice. But what if there is no recommended price? Here, we may rely on convention again, having some notion of a fair price based upon previous transactions: if CDs typically cost \$15 and a digital download is \$9.99, we are conditioned into accepting these amounts as normal prices for these goods.

As mentioned earlier, following conventions is not necessarily prosocial behavior, even if the outcome is prosocial. It is more akin to a form of autopilot in which cognitive tasks are offloaded onto our cultural conventions that steer our decision-making. However, we are not merely creatures of habit, and ethical conceptions such as fairness and reciprocity do figure prominently in our behavior towards others. As Nicolas Suzor notes, “a large body of

behavioral evidence shows that, against their direct self-interest, people make offers that are fair and reject offers that are manifestly unfair."²⁴

Fairness

Fairness may in fact be one of the most important motivators in voluntary payments for music and has an interesting interaction with price expectations. If the average price of a digital download is \$9.99, as per iTunes, what is the fair price for an album that is perceived to be of much higher quality than the average? What about one that is terrible except for one or two songs or a live recording that was far less expensive and/or time-consuming to make than a studio recording? Notions of fairness would support a variation in price around the norm, with albums of higher quality or requiring a greater amount of labor deserving a higher price than those of lesser quality. In a recent conversation with David, an undergraduate pre-med student and amateur electronic music producer, he indicated that when he does buy music, he tends to pay a high price for it, estimating his average purchase on Bandcamp for a full album download to be \$20 (double the norm for a digital album), and in the \$6-7 range for an EP. However, he is very selective about what he buys, and only buys albums that he considers to be of a very high quality in which the whole represents a work that is beyond the sum of its individual tracks.²⁵ If the idea of fans paying \$20 for a digital album seems like a cause for

²⁴ Suzor, "'Peaceful Revolutions' in Copyright," 153.

²⁵ David, Personal Conversation, March 10, 2016.

celebration in the music industry, one should remember that notions of fairness are a double-edged sword. In fact, the idea that music today is mass-produced, watered-down, and lacking in skill is often cited in defense of not paying at all, as captured by these comments in Reddit piracy discussion groups:

A lot of this stems from the fact that I think a lot of our media is awful, and so by very selectively supporting the stuff I think is good, I can make a minuscule impact on what is successful (makes money), while also effectively removing my support of what I consider to be bad.²⁶

Bands would release albums with a few good songs and the rest was just filler.²⁷

Along similar lines, David admits to having become more selective after he started making music, indicating that his quality benchmark has moved higher and that he will not pay for certain genres, such as House music, because they are not “musically creative.”²⁸

²⁶ Dieselite, “Pirates of Reddit, why, what and how do you pirate?” last accessed May 14, 2016,

https://www.reddit.com/r/AskReddit/comments/3777ro/pirates_of_reddit_why_what_and_how_do_you_pirate/

²⁷ Tony49UK, “[Question] Reasons piracy is so prevalent in today's society?” last accessed May 14, 2016,

https://www.reddit.com/r/Piracy/comments/3l3xj3/question_reasons_piracy_is_so_prevalent_in_todays/

²⁸ David, Personal Conversation.

“We’re So Happy We Can Hardly Count”²⁹

Fairness is relevant not only in terms of quality, but also when considering the economic status of the artist and label involved. It is important to remember that digital goods have zero marginal cost and therefore the idea that obtaining music for free is equivalent to stealing is a mischaracterization. In theft, the victim incurs a material or financial loss, but when music is obtained for free, there is no actual cost incurred by the artist or label. The argument that each piece of music obtained for free represents a lost sale is equally flawed, as evidenced by the amount of pirated content being much higher than what anyone could actually afford to buy.³⁰ Therefore, fairness materializes differently compared to a setting in which a consumer obtains a physical good that has a real marginal cost to manufacture. It is not so much a question of compensating the artist fairly for what you have received from them, but more an abstract idea of whether or not the artist deserves your money in general. In this way, it is more akin to the idea of supporting a charity: does the artist deserve or need more money? Do you believe in what they are doing? Do you want to support the creation of more of their work? Under this notion of fairness, it becomes clear why a college student who is in debt does not think that a successful pop star deserves his or her money. That same individual, however, may believe that is fair to support an emerging artist. As

²⁹ Pink Floyd, “Have a Cigar,” *Wish You Were Here* (Capitol Records, 1975).

³⁰ Sinnreich, *Piracy Crusade*, 113-118.

with notions of quality, fairness as it relates to economic status has two sides for the industry, as another comment from Reddit demonstrates:

I can't afford very much, but I try to buy stuff when I can. Especially when I find it crucial to support the developers. I would never pirate a small indie game, but I'm less worried about a huge successful movie³¹

The same logic can be applied to music, where notions of fairness can lead consumers to pay more for the work of emerging artists versus those who are already successful. Although not discussed in the literature, an artist's personal life and social activism could theoretically also play a role in how deserving of a fan's money the artist appears: one might be more inclined to pay more for Lady Gaga, who has been a prominent activist for LGBT rights than an artist such as Chris Brown, who has a reputation for violence against women.

Fairness goes hand in hand with reciprocity, the idea that good deeds should be repaid, which appears as some variation of the Golden Rule throughout human cultures. According to Nicolas Suzor, "consumers who pay more than required in PWYW schemes are often motivated to reward what they see as kindness in producers."³² In the case of PWYW schemes, the kind action is the artist offering their work to fans for any price they choose to pay, breaking the norm of expecting compensation at a fixed price for their music.

³¹ Thetarget3, "Pirates of Reddit, why, what and how do you pirate?" last accessed May 14, 2016,

https://www.reddit.com/r/AskReddit/comments/3777ro/pirates_of_reddit_why_what_and_how_do_you_pirate/

³² Suzor, "'Peaceful Revolutions' in Copyright," 159.

On a more abstract level, the artist's choice of profession itself can be viewed as a gift to their fans or society at large. The idea that the work of musicians and other artists creates cultural capital that is of value irrespective of its financial realities lies at the heart of subsidies for the arts in developed countries as well as the support within the university system for music that has little value within the marketplace.³³ Theoretically, fans may be willing to reciprocate for the artist's good deed of having created cultural capital for society, although data on this point with regard to recorded music is lacking.

However, most of us have a tendency to not only reciprocate for good deeds but also in instances where we feel slighted or treated unfairly. Unfortunately for the music industry, many of its consumers have historically felt mistreated. One of the most commonly cited examples is the forced bundling mentioned above. The move away from singles to albums, while having aesthetic justifications in the cases of album-oriented rock acts such as Pink Floyd, also required consumers to pay for tracks that they may not have wanted in order to have the tracks that they did want. While this would not have been an issue if those tracks turned out to be something that the consumer enjoyed, in many cases, consumers considered them filler.³⁴ Additionally, a fan purchasing an album based on having heard only or two

³³ The idea of cultural capital was particularly important during the Cold War, during which the United States and the Soviet Union both attempted to validate their respective economic and political systems through demonstrating how they encouraged the flourishing of the creative arts.

³⁴ Sinnreich, *Piracy Crusade*, 108.

tracks,³⁵ and expecting similar quality in the others, would have felt disappointed and maybe even cheated if the remaining tracks were found to be lacking. The notion of poor treatment of music consumers by the industry was further exacerbated by the industry's collusion on Minimum Advertised Pricing (MAP) in the 1990s, in which music retailers and distributors conspired to reduce price competition on recorded music, resulting in an estimated \$2 per CD higher retail price, according to the Federal Trade Commission.³⁶ This perception of having been cheated through bundling of low quality tracks and also price-gouged through MAP created little desire in consumers to reciprocate positively towards the industry.

As bad as the industry's image was during the CD era, its actions following the rise of peer-to-peer file sharing managed to completely destroy any goodwill that might have remained. This disastrous road began with the industry's decision to use litigation to shut down Napster, the first peer-to-peer file sharing system.³⁷ Overnight, the music industry, which once had "a reputation as a boundary pushing force for social change, in cahoots with the

³⁵ It was typically very difficult, if not impossible, to sample a new album before buying it during the CD era.

³⁶ Martin A. Asher, John A. DelRoccili, and Joseph A. Fuhr. "Antitrust Implications of Minimum Advertised Pricing: The Case of the US Music Industry, The." *ESLJ* 3 (2005): 1.

³⁷ Stephen Witt, *How Music Got Free* (New York: Penguin, 2015) 117-118. The decision to shut down Napster was not a given, and Bertelsmann Music Group (BMG), at the time one of the largest music labels, in fact invested in the company and signed a deal to collaborate on creating a digital music distribution service.

youth, the artists, and the revolutionaries of the world,"³⁸ became, in the words of Aram Sinnreich, "The Man."³⁹ This event has a particular personal resonance for me as the widespread adoption of Napster coincided with entering my first year at the University of Chicago. For those of us living in the dorms that year, Napster was much more than a way of obtaining music: it was an integral part of our social life and a way of getting to know each other through music. I remember one of my closest friends, an actor and rapper from Brooklyn introducing me to native-tongues inspired hip-hop and discovering music from the Middle East through a friend from Istanbul. We would spend many hours in each others' dorm rooms talking about music and downloading files, creating personal connections through the sharing of music. The industry's move to shut down Napster was much more than an attempt to take away our access to music (most of us in fact already owned extensive CD collections) - it was taking away an integral part of our social lives and the way in which we related to each other. Paradoxically, it also took away the very thing that made people excited about music on a level I had never seen before, and have not seen since. In the eyes of my generation, the music industry has never recovered from this, and its subsequent pleas that people should pay for its music have fallen on deaf ears.

The industry's next initiatives took things even further. While Napster was based in the US, the next generation of peer-to-peer file-sharing platforms had

³⁸ Sinnreich, *Piracy Crusade*, 121.

³⁹ *Ibid.*, 122.

the foresight to base themselves in jurisdictions where they could not be easily pursued by the music industry and/or create decentralized platforms that would provide a legal defense to the claim that they were enabling infringement. With peer-to-peer platforms proliferating and litigation against them becoming increasingly difficult, the industry decided to do what it saw as the next best option: sue the downloaders themselves. The problems with this strategy appeared quickly in both principle and practice. News stories of people who were barely making ends meet being sued for astronomical amounts created widespread sympathy for the defendants in this David versus Goliath battle. Many also questioned the penalties demanded by the labels, which were exponentially higher than the value of any content that had been downloaded. The implementation of the industry's strategy was sloppy at best, with defendants including elderly individuals who did not even know how to use the internet and the deceased.⁴⁰ While most music fans were never targeted, the perceived threat to them by the industry created the impression that they are viewed as criminals and not valuable customers.

Concurrent with the industry's litigation strategy was a move to employ DRM in digital music stores in order to prevent sharing of purchased files. The industry was in part reacting to what Aram Sinnreich calls the "original sin" of the CD format, which was its complete lack of copy protection and the adoption of this format over other contenders that would have been far more

⁴⁰ Sinnreich, *Piracy Crusade*, 60-62.

secure.⁴¹ The ease of ripping a CD onto a computer was one of the facets that enabled early file sharers to easily and quickly upload music to various platforms,⁴² and in fact the largest pre-release leaking operation was run by Dale Glover, an employee of the PolyGram CD manufacturing plant in Kings Mountain, North Carolina, who together with other employees stole discs from the manufacturing line.⁴³ To prevent a repeat of the problems the CD created for the industry, record labels insisted that files sold through digital music stores incorporate some type of DRM, which essentially is a lock that prevents the files from being played on any devices except those that have been authorized. A file with DRM that has been shared with another user would become useless as it would not function on any of that user's devices. While DRM was a logical way to counter piracy in theory, in practice it turned out to create a number of problems for consumers. For users with more than one playback device or families with multiple users, DRM created a hassle when switching between devices and users. Furthermore, in the case of Apple's iTunes, it prevented users from accessing music that was legally purchased in other stores on the iPod or from playing iTunes music on other devices, effectively instituting a punishment on those consumers who played by the rules and chose to use

⁴¹ Ibid., 58.

⁴² No copy protection is unbreakable and any music that can be heard can also be recorded and converted into mp3 files. However, this process is much more time consuming and requires special equipment if the fidelity is to be preserved. It is likely that file sharing would have been slowed, but not stopped completely, had the CD format been protected.

⁴³ Witt, *How Music Got Free*.

iTunes over peer-to-peer file-sharing.⁴⁴ It was also arguably anti-competitive as it kept users locked within Apple's ecosystem. The worst effects on consumers from DRM implementation occurred to those unfortunate enough to purchase music from the short-lived Microsoft and Yahoo! Music services. To function properly, DRM requires a database that the seller has to maintain on an ongoing basis at not insignificant cost. When these two services closed, Yahoo! and Microsoft both made the decision that it was too expensive to pay for the employees and servers necessary to keep their DRM-enabled files working, and so they pulled the plug on all of these files, deactivating all of the music that consumers had purchased through their stores.⁴⁵ If consumers had any trust in the music industry left at this point, it surely evaporated in this last debacle. An interesting facet of the DRM initiative is that it created a notably inferior product for consumers who purchased music legally, compared to the files that were available for free on peer-to-peer file-sharing platforms, which could be used on any device, shared with friends and family, and would never become inactive. Paying customers, instead of having been given a superior product, were suckers.

⁴⁴ Micah Singleton and Josh Lowensohn, "Apple's DRM lawsuit: 10 years in the making," *The Verge*, December 4, 2014, <http://www.theverge.com/2014/12/4/7333609/apples-drm-lawsuit-10-years-in-the-making>.

⁴⁵ Sinnreich, *Piracy Crusade*, 64.

The last of these infamous initiatives was a secret plan by Sony BMG⁴⁶ to install tracking and anti-copying software on consumers' computers. In 2005, CDs sold by artists on the Sony BMG label contained rootkit software, which would automatically install itself on a user's computer when they inserted the CD into the CD-ROM drive. One of the programs would secretly monitor the user's listening habits and report that information to Sony BMG, presumably for market research.⁴⁷ The other program modified the user's operating system, preventing them from making copies of CDs using their CD burner.⁴⁸ Their plan became not-so-secret when the software started crashing users' computers and was revealed by blogger Mark Russinovich. Sony BMG was hit by several class-action lawsuits over the software and investigated for illegal activity, prompting a recall of the affected CDs and the release of an uninstaller for the software, which presented its own security challenges.⁴⁹ Regardless of Sony BMG's attempts to undo the damage, its reputation was tarnished in the eyes

⁴⁶ While more famous for personal electronics, Sony is one of the three major players in the industry. Its full-scale entry into the US market occurred when Sony bought what was then CBS Records in 1987, including its subsidiaries RCA and Columbia. Sony Music Entertainment and BMG created Sony BMG as a joint venture in 2004, with Sony taking full control of the company in 2008.

⁴⁷ We now take this loss of privacy for granted when using online streaming services, and in fact, have come to desire it so that we can be provided with better music recommendations.

⁴⁸ One of the ironies of this situation is that Sony was in fact one of the largest manufacturers of CD burners and blank CD-Rs, most of which were used for illegal copying.

⁴⁹ Sinnreich, *Piracy Crusade*, 131-132.

of consumers, once again reinforcing the image of a greedy corporate entity that does not have consumers' best interests at heart.

This history is important in a discussion of reciprocity and voluntary payments, because people tend to reciprocate both positive and negative deeds that have been done to them. With a long legacy of negative behavior towards its consumers, the industry has a lot of work to do before it can expect any positive reciprocity. Fortunately, the labels did eventually see the error of their ways and dropped the lawsuits, eliminated DRM, and did not make any further attempts to hack consumers' computers (at least as far as we know). Whether or not they will be the beneficiary of positive reciprocity in the future largely depends on the extent to which they embrace innovations that improve music fans' experiences.⁵⁰ Of course, fans do realize that artists are not the same as the labels, but the only way to support most artists financially is to go through the label, which often is now involved in all aspects of their career through so-called 360 deals.

⁵⁰ Unfortunately, the industry's restrictions in the licensing realm are still stifling innovation. In a conversation with Keith Bernstein, CEO of Crunch Digital, a firm that tracks online streaming payments, Bernstein mentioned that a typical licensing agreement with a major label may involve as much as \$1-2 million paid upfront, equity, and a percentage of future revenue. The upfront payments are enough to make most angel-funded music startups not viable, which is why the majority of recent streaming services have been launched by large companies such as Apple and Google. For a thorough examination of this topic, see Sinnreich, *Piracy Crusade*, 137-159.

“Us and Them”⁵¹

Our capacity for empathy is a fundamental trait of human beings, so much so that we define deviations from the norm such as psychopathy through a diminished capacity for empathy. Research from neuroscience points to empathy as an integral feature of cognition that plays a vital role in learning, rather than a learned trait that we acquire through education in religion, morality, or social conventions. In fact, our brains respond in such a way that we effectively “mirror” the brain of another and cognitively walk in their shoes when we see them perform an action or experience an event.⁵² Additionally, “neuroscientific studies support the proposition that agents’ brains respond differently to cooperation with humans than to ‘cooperation’...with computers.”⁵³ If we are able to take the point of view of the other person, such as the artist who worked hard to write songs and record them, then we are more likely to pay in a voluntary setting, even if this is against our self-interest. Empathy as a motivator brings up several questions, such as the conditions under which we might empathize with an artist. One of the limitations of empathy is that we tend to empathize more with individuals who are similar to ourselves. This similarity can play out along demographic lines, and illuminates another reason why people may not be willing to pay for music by an artist who is financially very well off, especially if the consumer is not. The racial and

⁵¹ Pink Floyd, “Us and Them,” *The Dark Side of the Moon* (Harvest, 1973).

⁵²Istvan Molnar-Szakacs and Katie Overy. “Music and mirror neurons: from motion to ‘e’motion.” *Social cognitive and affective neuroscience* 1, no. 3 (2006): 235-241.

⁵³ Belsky, “Everything in its Right Place,” 42.

cultural implications are also notable: would we be willing to pay less for music by an artist of another race or culture if we (perhaps subconsciously) empathize less with them than an artist that looks like us? What would this mean in the American music industry, in which many African-American artists from disadvantaged backgrounds found their largest audiences amongst wealthier, white communities?^{54 55}

Connected to empathy is the sense of solidarity we feel when we are part of a group. As Belsky et al. point out, numerous studies support the idea “that people increase the degree to which they cooperate with strangers whom they perceive to be part of even very minimally-triggered solidarity groups.”⁵⁶ This has two implications in the realm of voluntary payments in music. One is that a fan's experiences with music may inform payment decisions: those who learned an instrument growing up, played in a band, or sing in a choir may feel a sense of group solidarity with the artist whose album they are buying, which would motivate them to pay a higher price. Conversely, someone who never played an instrument or who considers him or herself to be tone-deaf may not feel this solidarity and would be inclined to pay a lower price. The other implication is that solidarity may be established

⁵⁴ Jeff Chang, *Can't Stop Won't Stop: A History of the Hip-Hop Generation*, (New York: Picador, 2005). See pages 419-422 for a discussion of how the popularity of Gangsta Rap in the mid-1990s was fueled by demand in predominantly white American suburbs.

⁵⁵ Of course, the perceived difference between the buyer and the artist can function in an opposite direction when applied to other motivators, such as fairness.

⁵⁶ Belsky, “Everything in its Right Place,” 42.

amongst those who, as Nicolas Suzar writes, have “moral commitments to alternate systems that enable more desirable outcomes.”⁵⁷ The history of PWYW schemes in music has a distinctly anti-industry, anti-establishment, and anti-capitalist element present, and the first wave of these experiments was launched around 2007, when dissatisfaction with the music industry was at an all-time high. Arguably, supporting one of these early experiments was motivated as much by a desire to support the artist as it was to express solidarity with those who opposed the music industry and its model of distribution. Additionally, these PWYW experiments were situated in a broader cultural framework of cooperative online experiments,⁵⁸ such as Wikipedia, which pointed to the emergence of alternative economies online, including the gift economy.⁵⁹ Being in solidarity with this movement was not only a site of opposition to 20th century capitalism, but also featured an element of techno-utopian fantasy regarding the economy of the future.

Self-Signaling

While empathy and solidarity are concerns that are directed externally and concern our relations with others, Gneezy et al. suggest that an equally

⁵⁷ Suzor, “‘Peaceful Revolutions’ in Copyright,” 142.

⁵⁸ For a detailed history of crowd-sourced and cooperative initiatives online, see Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven: Yale University Press, 2007) and Benkler, *The Penguin and the Leviathan: How Cooperation Triumphs over Self-Interest* (New York: Crown Business, 2011).

⁵⁹ For a thorough examination of the gift economy, see Anderson, *Free*, 186-189.

important motivator of our behavior is the way we use it to signal who we are to ourselves:

Paying in PWYW may signal to others that "I am a moral person." At the same time, however, such payment also serves as a self-signal. In the self-signaling model, a person is not certain about her true identity due to some form of imperfect recall, and therefore uses her actions to update her beliefs regarding her "true" type.⁶⁰

Because our identities are not stable, we continually update our sense of self based upon the actions we have performed. In order to maintain a self-identity as a fair and moral individual, we have to continually perform acts that conform to notions of fair and moral behavior. While what is considered fair and moral may be largely derived from societal conventions (for example, Gneezy et al. note the differences in tipping practices between countries),⁶¹ our decision to follow these norms is not for the benefit of others but primarily for ourselves. This is reinforced in one of their experiments, in which restaurant buffet customers whose payments were made anonymously paid more than those who were observed.⁶² The implications of this finding are significant for the music industry, in which online transactions are almost always anonymous, although positive effects of self-signaling may be tempered by cultural norms in populations in which piracy is rampant.

⁶⁰ Gneezy et al., "Pay-what-you-want, identity, and self-signaling in markets." *Proceedings of the National Academy of Sciences* 109 (2012), 7240.

⁶¹ Ibid.

⁶² Ibid., 7239.

Framing

An additional factor in explaining consumer behavior on voluntary payment platforms is situational framing. As Belsky et al. explain:

We cannot avoid interpreting a situation in which we find ourselves in social and cultural terms. In this model, we are already at least partly determining the nature of the interaction and our likely behavior in it. This aspect of the interaction is like a lens through which we observe reality, and which simply must exist; there is no unmediated mechanism of accessing a situation that does not go through a lens of cognitive and social-cultural framing.⁶³

In other words, if we are presented with a situation that looks and feels like a store, we will behave as if we are in a store and likely act in a self-interested, money-saving manner. However, if the situation feels like charitable giving, we may feel inclined to be more generous and rely on a framework that draws more upon our empathy and sense of fairness. Belsky et al. cite one of the most interesting empirical studies in this area, in which two groups of participants played an identical game. However, one group was told that they were playing "the community game" while the other was told they were playing "the Wall Street game." Participants in the community scenario behaved cooperatively 70% of the time, while those playing the Wall Street game only cooperated 35% of the time.⁶⁴ Words can have a powerful effect because they bring to mind socio-cultural associations and expectations. This may affect behavior on voluntary payment platforms that choose different names to describe their transactions - for example, a user on PledgeMusic's

⁶³ Belsky et al., "Everything in its Right Place," 41.

⁶⁴ Ibid.

platform is taken to a “store” whereas an Indiegogo user has the option to “contribute” and receives a “perk” in return. Given the power of framing, these small variations may have meaningful impacts on amounts given to artists. Beyond naming, the way in which an artist tells their story and makes their appeal to fans can also invoke framing effects. Artists that do a better job creating an emotional appeal for help may do better financially than those who treat crowdfunding in a transactional manner, simply through invoking a charitable framework.

Impact

One factor that is not brought up in the PWYW literature on music is that of impact: the fan's sense that their payment is making a positive difference in the world. This may not have been mentioned in the context of the music industry focused literature due to the focus on music as a consumer good. However, if we move beyond this conceptualization and consider music's importance in terms of cultural capital, the fan's payment is now making the world better by enabling more music of the type they consider valuable to be created. This motivator may be particularly strong in the case of independent artists with a small fan base, for which one fan can make a meaningful impact to their career through a voluntary payment or to the creation of a work through a crowdfunding campaign. We would therefore expect that artists who are less established would receive greater payments than those who are more well-known and financially successful, because a single fan is more

important as a proportion of the total fan base. However, for artists of very low popularity, with very few fans, we may also receive lower payments because the fan may feel that the artist's probability of success is too low for their payment to make an impact.

Impact can also function in a more abstract way: the fan may feel a sense that they are righting a wrong through paying more for a piece of music, as the market was wrong to undervalue the music in the first place. As suggested by percussionist Steven Schick, the fan believes that their payment is correcting a gap between the market price of the music and its true value.⁶⁵ This true value could be conceived by the fan as correlated with the cultural capital contained within the work, measured by some aesthetic criteria, such as musical ability, inventiveness, or a sense of beauty, or it could relate to the perceived labor involved with creating it. In either case, the fan's impact is the belief that they are setting something right in the world and doing their part to correct an unjust situation.

⁶⁵ Schick, Steven. Personal Conversation, February 24, 2020.

Chapter 3

Early Experiments in Voluntary Payments

"Hail to the Thief"⁶⁶

No paper on voluntary online payments is complete without a discussion of Radiohead's *In Rainbows* and so, in keeping with tradition, I will start the story here. In 2003, Radiohead fulfilled their contract with EMI/Capitol with the release of the album *Hail to the Thief*.⁶⁷ Having their own studio available, they started to work on their next album without any label support and made the decision to self-release *In Rainbows* in the fall of 2007. While the album was also released through conventional channels, during the eight weeks prior to launch fans could download it through Radiohead's website for a price of their choice:

Drop *In Rainbows*' 15 songs into the on-line checkout basket and a question mark pops up where the price would normally be. Click it, and the prompt "It's Up To You" appears. Click again and it refreshes with the words "It's Really Up To You" — and really, it is. It's the first major album whose price is determined by what individual consumers want to pay for it. And it's perfectly acceptable to pay nothing at all.⁶⁸

⁶⁶ Radiohead, *Hail to the Thief* (Parlophone, 2003).

⁶⁷ Josh Tyrangiel, "Radiohead Says: Pay What You Want," *Time*, October 1, 2007, <http://content.time.com/time/arts/article/0,8599,1666973,00.html>.

⁶⁸ Thom Yorke, Interview with Josh Tyrangiel, "Radiohead Says: Pay What You Want," *Time*, October 1, 2007, <http://content.time.com/time/arts/article/0,8599,1666973,00.html>.

As mentioned above, Radiohead's motivations were in part to challenge the record label model that dominated the industry. Thom Yorke, the band's lead singer explained:

I like the people at our record company, but the time is at hand when you have to ask why anyone needs one. And, yes, it probably would give us some perverse pleasure to say 'F___ you' to this decaying business model.⁶⁹

According to comScore's study of the experiment, 38% of consumers chose to pay for album rather than downloading it for free. The average price paid globally was \$6.00, with a large disparity between US consumers, who paid on average \$8.05,⁷⁰ and consumers in other parts of the world, who paid \$4.64.⁷¹ Two possible reasons for this gap are an income effect, with the US having a higher per capita income compared to the global average, as well as a higher propensity to support causes financially in the US compared to other developed countries that have more generous government social welfare programs and arts funding.⁷² It is important to keep in mind that the average price paid represents only paying fans. When those who downloaded the

⁶⁹ Josh Tyrangiel, "Radiohead Says: Pay What You Want."

⁷⁰ It interesting to note how close this price is to the typical price of \$9.99 for a digital album. It is possible that a price of around \$8 allows the consumer to follow social norms and feel as though they are getting a good deal at the same time.

⁷¹ "For Radiohead Fans, Does 'Free' + 'Download' = 'Freeload'?", *comScore*, November 5, 2007, <http://www.comscore.com/Insights/Press-Releases/2007/11/Radiohead-Downloads>.

⁷² Elisabeth Eaves, "Who Gives The Most?" *Forbes*, December 26, 2008, http://www.forbes.com/2008/12/24/america-philanthropy-income-oped-cx_ee_1226eaves.html.

album without paying are included, the average payment drops to only \$2.26, with an average of \$3.23 in the US, and \$1.68 for consumers outside the US. However, average numbers only tell part of the story and do not reveal whether or not Radiohead did better under the PWYW condition than they would have with a conventional release. A lower price is very likely to lead a higher number of units sold overall, although this does not guarantee a higher total revenue. Furthermore, looking at sales alone does not account for positive externalities of the experiment: did some of those who downloaded the album for free become fans of Radiohead as a result and purchase other albums or concert tickets in the future? The most comprehensive analysis of Radiohead's strategy concluded that the band did better than they would have otherwise with a conventional release, but for reasons unique to *In Rainbows*: namely, the novelty of the experiment generated a massive amount of free and positive publicity that would not apply to subsequent PWYW releases by other bands.⁷³

"I'd Rather Die than Give You Control"⁷⁴

Amongst these subsequent releases were three albums released in short succession on the heels of *In Rainbows* by the band Nine Inch Nails (NIN) and its associates. While none of these albums was a true PWYW experiment, they

⁷³ Bourreau, Marc, Pinar Doğan, and Sounman Hong. "Making money by giving it for free: Radiohead's pre-release strategy for *In Rainbows*." *Information Economics and Policy* 32 (2015): 77-93.

⁷⁴ Nine Inch Nails, "Head Like a Hole," *Pretty Hate Machine* (TVT, 1990).

did incorporate novel pricing strategies and the option of a free download. Furthermore, they fit the same zeitgeist of the 2006-2008 period in which conventional economic theory was being questioned by online movements such as voluntary labor, the gift economy, and the Creative Commons. NIN's motivations appear to be both pragmatic, releasing digital content before it is pressed to CD to inoculate against leaks,⁷⁵ and ideological, as noted by Trent Reznor, the band's frontman, at the time:

Here's what I was thinking: Fans are interested in music as soon as it's available (that's a good thing, remember) and usually that's a leak from the label's manufacturing plants. Offering the record digitally as its first appearance in the marketplace eliminates that problem. I thought if you offered the whole record free at reasonable quality -- no strings attached -- and offered a hassle free way to show support that clearly goes straight to the artists who made it at an unquestionably low price, people would "do the right thing."⁷⁶

Reznor's statement invokes several of the theoretical concerns regarding voluntary payments: a good deed (offering the album for free) is done with an expectation of reciprocity, "an unquestionably low price" shows a sense of fairness towards the consumer, asking fans to do "the right thing" refers to

⁷⁵ In fact, Reznor himself leaked NIN material during their 2007 tour by leaving USB sticks with mp3s in concert hall bathrooms. This prompted backlash from his label and even takedown notices when the leaked material appeared online. For more information, see Mike Masnick, "The Trent Reznor case study," *MidemNet 2009 in video*, February 3, 2009,

https://www.youtube.com/watch?v=Njuo1puB1lg&ab_channel=MIDEM09.

⁷⁶ Trent Reznor, Interview with Cortney Harding, "Reznor: Only 18% Paid For 'Niggy Tardust,'" *Billboard*, January 1, 2008,

<http://www.billboard.com/articles/news/1046908/reznor-only-18-paid-for-niggy-tardust>.

normative behavior, and directing payments “straight to the artists” bypasses negative associations with the music industry that could lead to perceptions of unfairness and negative reciprocity.

The first of these albums, *The Inevitable Rise and Liberation of NiggyTardust!*,⁷⁷ was released in November of 2007, just three weeks after *In Rainbows*. A collaboration between Reznor, inhabiting the role of producer, and rapper/poet Saul Williams, the album was released under Williams name but promoted through the NIN website and mailing list.⁷⁸ Fans were given two options: download the album without paying and receive 192 Kbps mp3 files or pay \$5 and have the choice of downloading a 192 Kbps, 320 Kbps, or FLAC lossless audio file.⁷⁹ The initial results were “dishearten[ing]” to Reznor, with 154,449 total downloads in the first two months, 28,322 (18.3%) of which were paid.⁸⁰ On the surface, this amounts to an average price of 92 cents, less than half of the average paid for *In Rainbows*. However, direct comparison is problematic. First of all, Saul Williams was not an established name as was Radiohead at the time, and in fact one of NIN’s motivations in pursuing the

⁷⁷ The title is a play on David Bowie’s *The Rise and Fall of Ziggy Stardust and the Spiders from Mars*.

⁷⁸ “*The Inevitable Rise and Liberation of NiggyTardust!*” *Wikipedia*, last accessed May 15, 2016,

https://en.wikipedia.org/wiki/The_Inevitable_Rise_and_Liberation_of_NiggyTardust!

⁷⁹ Internet Archive Way Back Machine, October 27, 2007,

<https://web.archive.org/web/20071027023646/http://niggytardust.com/saulwilliams/downloadinfo>.

⁸⁰ Reznor, “Only 18% Paid.”

collaboration was to help Williams reach a new audience.⁸¹ Second, the album was an experiment in that it fused two disparate styles of music, which may or may not have appealed to Williams' and NIN's existing audiences. Unlike *In Rainbows*, for which fans could expect a certain quality and style of music, *NiggyTardust* was an unknown and introduced a higher risk into the purchase decision, justifying a lower price. Additionally, the binary pricing structure prevents direct comparison. A choice of free or \$5 forced out some fans that would have wanted to pay instead of downloading for free but were not willing to pay the price of \$5. It also prevented fans who would have wanted to pay more than \$5 from doing so. Finally, when compared to Williams' 2004 debut, which sold only 30,000 copies in total since its release, the numbers look rather positive.⁸² In two months the album achieved the same level of sales as Williams' debut did in four years, not to mention all of the new fans that Williams was able to reach. Reznor soon changed his own mind and viewed the experiment in a more positive light, noting that "[Williams] made infinitely more money from that record than he did from his other one"⁸³ because no money was spent on advertising⁸⁴ or label overhead.

⁸¹ "*NiggyTardust*," Wikipedia.

⁸² Ibid.

⁸³ Trent Reznor, Interview with Jon Pareles, "Frustration and Fury: Take It. It's Free." *The New York Times*, June 8, 2008, <http://www.nytimes.com/2008/06/08/arts/music/08pare.html>.

⁸⁴ Trent Reznor, Interview with David Dye, "Trent Reznor Releases 'Ghosts' for All," *NPR Music*, May 19, 2008, <http://www.npr.org/templates/story/story.php?storyId=89493556>.

NIN's next experiment was a release under their name, titled *Ghosts I-IV*. Unlike NIN's previous releases, the album was fully instrumental and represented what Reznor described as a "broadening of the shoulders" for the band.⁸⁵ The album was released online through NIN's website with no prior announcement on March 2, 2008, and in record stores on April 8, 2008.⁸⁶ *Ghosts I-IV* followed a similar pricing scheme to *NiggyTardust*, with fans being given the option of a free 320kbps download of the first nine tracks, or a full quality download of the entire 36 track album for \$5.⁸⁷ Reznor stated after the release that one of his concerns was to find a way to "present [music] to the world in a way that is respectful to the art and to the fan that might be interested in it."⁸⁸ Allowing for a free option of limited quality and material was one such way to strike this balance. In addition to the digital downloads, fans were given three physical options: a double CD for \$10, a deluxe double CD and DVD package for \$75, and a \$300 ultra deluxe limited edition package signed and numbered by Reznor himself.⁸⁹ These limited edition packages effectively segmented fans based upon their dedication to the band. The most expensive, ultra deluxe package featured the music in CD and 96Khz/24 Bit high-definition formats, a photo book, and two art prints that could be

⁸⁵ Ibid.

⁸⁶ "*Ghosts I-IV*," *The Nine Inch Nails Wiki*, last accessed May 15, 2016, http://www.nin.wiki/Ghosts_I%E2%80%93IV.

⁸⁷ "Nine Inch Nails: *Ghosts I-IV*," last accessed May 15, 2016, http://ghosts.nin.com/main/order_options.

⁸⁸ Trent Reznor, "'Ghosts' for All."

⁸⁹ "Nine Inch Nails: *Ghosts I-IV*"

framed. In addition, NIN included a DVD of the multi-track session files of the entire album, which enabled fans to remix the music themselves or create new music from the tracks, thus becoming part of the creative process.⁹⁰



Figure 3.1: Ghosts I-IV Ultra Deluxe Limited Edition Box Set

Furthermore, Ghosts I-IV was released under a Creative Commons Attribution Non-Commercial Share Alike license, which allowed those remixing the tracks to freely share their creations with others without the threat of copyright

⁹⁰ "Limited Edition" last accessed May 15, 2016, http://ghosts.nin.com/images/popup_product_ultradeluxe.jpg.

litigation.⁹¹ ⁹² A more controversial aspect of this licensing decision is that it also gave fans the right to share the full album on file-sharing websites,⁹³ which, coupled with an official upload to The Pirate Bay,⁹⁴ implied a certain solidarity with fans that chose to use file-sharing.

NIN's strategy was so successful that Mike Masnick, CEO of Techdirt, presented it as a case study at 2009's Midem music industry conference as a template for artists and labels to follow. According to Masnick, sales of Ghosts I-IV totaled \$1.6 million in the first week alone, an impressive haul for "music that they were giving away for free."⁹⁵ Key to this success were not only the voluntary payments for the digital downloads but also the very expensive boxed sets. The ultra deluxe limited edition box sold out in less than 30 hours, bringing the band a total of \$750,000 from 2,500 units sold.⁹⁶ Masnick attributes NIN's success to the adoption of a formula that he believes is integral to monetizing music in the digital age:

⁹¹ "Nine Inch Nails: Ghosts I-IV FAQ," last accessed May 15, 2016, <http://ghosts.nin.com/main/faq>.

⁹² "Attribution-NonCommercial-ShareAlike 3.0 United States," *Creative Commons*, last accessed May 15, 2015, <http://creativecommons.org/licenses/by-nc-sa/3.0/us/>.

⁹³ *Ibid.*

⁹⁴ "Nine Inch Nails - Ghosts I (2008)," *The Pirate Bay*, last accessed May 15, 2016, [https://thepiratebay.se/torrent/4059158/Nine_Inch_Nails_-_Ghosts_I_\(2008\)/](https://thepiratebay.se/torrent/4059158/Nine_Inch_Nails_-_Ghosts_I_(2008)).

⁹⁵ Masnick, "Reznor case study."

⁹⁶ *Ibid.*

Connect With Fans (CwF) + Reason To Buy (RtB) = The Business Model (\$\$\$\$)⁹⁷

Importantly, Masnick notes that “a true reason to buy (RtB) is a voluntary transaction.”⁹⁸ This stands in stark contrast to the traditional industry model in which a fan must buy the music in order to hear it and NIN's music was available for free to anyone who wanted it. Additionally, the physical editions also incorporate some element of voluntary payment: it is unlikely that NIN fans who bought the \$300 box have a habit of buying expensive photo books. Rather, the boxed sets should be seen as a physical manifestation of the fan's support for the band, whose price is far higher than the intrinsic worth of its various components. While Masnick's formula does oversimplify some important elements, most notably the free advertising that NIN's experiment created, it is important to consider in light of its future influence on the second wave of voluntary payment platforms. For example, Benji Rogers, the founder of PledgeMusic, often cites Masnick's formula as the basis for his business model.⁹⁹

NIN closed out its trio of online releases on May 5th of 2008 with *The Slip*, which was given away completely for free “as a thank you to [its] fans for [their]

⁹⁷ Mike Masnick, “My MidemNet Presentation: Trent Reznor And The Formula For Future Music Business Models,” *Techdirt*, February 5, 2009, <https://www.techdirt.com/articles/20090201/1408273588.shtml>.

⁹⁸ *Ibid.*

⁹⁹ Benji Rogers, Personal Conversation, February 12, 2016.

continued support.”¹⁰⁰ Out of the three releases discussed, *The Slip* is closest sonically to NIN’s classic material, featuring vocals and standard song format, but unlike previous releases that were crafted over the course of years, the band wrote and recorded the entire album in only three weeks.¹⁰¹ ¹⁰² Additionally, unlike *In Rainbows*, there was no way for fans to pay anything for the album even if they wanted to, although the band did subsequently release physical versions in July of the same year.¹⁰³ NIN’s motivations behind the free release can be understood in three ways: first, as a gesture to build goodwill amongst fans, which would result in positive reciprocity and higher sales for future albums, second, as a decision to choose a fair price of zero due to the negligible fixed costs¹⁰⁴ of creating the album, and third, as free publicity for their upcoming tour, which was announced on the same day as the album was released.¹⁰⁵

¹⁰⁰ “Nine Inch Nails *The Slip*,” last accessed May 15, 2016,

<http://dl.nin.com/theslip/signup>.

¹⁰¹ “The Slip,” *The Nine Inch Nails Wiki*, last accessed May 15, 2016,

http://www.nin.wiki/The_Slip.

¹⁰² While unusual today, this timeframe harkens back to the early days of recording. In fact, many classic rock and jazz albums of the 1960s were recorded in a few hours due to budget constraints.

¹⁰³ “Nine Inch Nails *The Slip*.”

¹⁰⁴ Unlike other NIN albums, which are highly produced and incorporate meticulously crafted electronic elements, *The Slip* uses a standard rock instrumentation for most of the album and has a raw and unpolished sonic quality. An album of this type would have been much easier to produce and mix, not to mention that the band was using Reznor’s home studio, thus saving on one of the largest costs of creating an album.

¹⁰⁵ Masnick, “Reznor case study.”

Curiously, Bourreau, Doğan, and Hong, the same group of researchers that analyzed the effect of Radiohead's strategy on the sales of *In Rainbows*, chose *The Slip* as a comparable album to test whether their "findings readily apply to similar pre-release strategies used by other artists,"¹⁰⁶ concluding, based upon poor digital sales of *The Slip*, that they do not.¹⁰⁷ This points to one of the key problems of empirical research in the area of PWYW pricing in music, which is that different albums often employ different pricing schemes, making it difficult to determine if sales effects are a result of pricing strategy, the music itself, or the particular band's fan culture. In this case, *The Slip* does not even use a PWYW strategy, and was deliberately given away as a gift to fans, making the comparison even more unusual. The researchers were aware of the release of *Ghosts I-V* two months prior and excluded it from their analysis because its "release does not correspond to a PYOP" offer,¹⁰⁸ but failed to exclude *The Slip* for the same reason. Furthermore, in the case of *The Slip*, a true test of its success is the effect it had on tour revenue as well as sales of subsequent albums - all of which are extremely difficult to measure.

Before proceeding further, I would like to pause and dispel one of the greatest myths about Radiohead and NIN, which is that the success of their experiments shows that artists no longer need record labels. On the contrary, the success of these albums was only possible due to all of the major label

¹⁰⁶ Bourreau, Doğan, Hong. "Making money," 81.

¹⁰⁷ Ibid, 82.

¹⁰⁸ Ibid, 95.

funding that these artists had received for over a decade prior to self-releasing music. In the 1990s, Radiohead and NIN were signed to major record labels and benefitted from all of their promotional efforts, including videos on MTV, radio play, and advertising. Without this investment in marketing, these bands would not have been able to acquire such massive followings and Reznor would not be able to afford a Hollywood home with a professional recording studio. In fact, Reznor realized the importance of marketing while touring in Prague in 2009 and noticing a complete lack of presence for NIN.¹⁰⁹ As a result, the band came back to a major label for their next record, 2013's *Hesitation Marks*.¹¹⁰ While Radiohead has remained independent, they have had to cover all costs of management and publicity themselves. Given their prior earnings, this is well within their means, but this is not the case for an emerging artist who cannot afford such an investment, contrary to Thom Yorke's advice that young artists should "release music [themselves] without the help of a major record label."¹¹¹ These facts are conveniently omitted from almost every narrative of Radiohead and NIN's 2007-2008 initiatives. Furthermore, the role of the record label in diversifying financial risk is also ignored, and it is not until

¹⁰⁹ Marc Hogan, "How Radiohead Inspired Trent Reznor's Return to Major Labels," *SPIN*, October 15, 2012, <http://www.spin.com/2012/10/trent-reznor-david-byrne-major-labels-destroy-angels-radiohead/>.

¹¹⁰ "Columbia Records," *The Nine Inch Nails Wiki*, last accessed May 15, 2016, http://www.nin.wiki/Columbia_Records.

¹¹¹ Daniel Kreps, "Thom Yorke: Major Labels Are a 'Sinking Ship,'" *Rolling Stone*, June 9, 2010, <http://www.rollingstone.com/music/news/thom-yorke-major-labels-are-a-sinking-ship-20100609>.

the emergence of crowdfunding that an alternative structure arises for managing risk in the recording industry. Finally, the corollary myth that Radiohead and NIN showed that artists can make more money by abandoning record labels is equally flawed because upfront costs, which were incurred by major labels in the 90s to develop these acts, are not taken into consideration.

"We Are Not Evil"

While Radiohead and NIN are the most famous examples of voluntary payments in music, a more robust experiment was taking place since 2003 by a little known company called Magnatune, headquartered in Berkeley, CA. Part record label and part online music retailer, Magnatune allowed customers to name their own price within a range of \$5 to \$18, with a recommended price of \$8.¹¹² ¹¹³ Launched under the slogan "we are not evil,"¹¹⁴ the company splits revenue 50/50 with artists and offered users an unlimited ability to sample its catalogue prior to purchase.¹¹⁵ The artists featured on the site are not household names and therefore the company is arguably providing them the benefit of accessing an audience they may not otherwise reach. Magnatune

¹¹² Tobias Regner and Javier A. Barria. "Do consumers pay voluntarily? The case of online music." *Journal of Economic Behavior & Organization* 71, no. 2 (2009), 396.

¹¹³ Magnatune has since switched to a membership only plan, offering unlimited access to its music for a one-time payment of \$299.

¹¹⁴ Likely taking after "Don't Be Evil," Google's corporate motto.

¹¹⁵ "Magnatune," *Creative Commons*, September 18, 2003, <https://blog.creativecommons.org/2003/09/18/magnatune/>.

is also highly selective with its catalogue, accepting only 3% of submissions, therefore providing value to its customers via curation.¹¹⁶ The company features several genres of music, listed in the following order on its site: classical, rock, new age, electronica, world, ambient, and jazz.¹¹⁷ Notable in their absence are genres that have dominated commercial music for the past two decades such as pop, rap, and r&b, those associated with youth movements, including punk, heavy metal, and electronic dance music or EDM (the electronica category features what can be termed Intelligent Dance Music or IDM), as well as more adventurous categories such as free jazz, new music, and noise. This would indicate that Magnatune's audience likely resembles that of NPR: wealthier, older, more educated, and more omnivorous than the average American music listener. The age and wealth characteristics of this group are particularly relevant when examining Magnatune's sales: its audience may adhere to a different set of generational norms regarding purchasing music and have a higher ability to pay based upon income.

Magnatune was the subject of two empirical studies by economists Tobias Regner and Javier A. Barria. The first of these, published in 2007, considers the effects of several factors on prices paid on the site. Considering sales data by country, and using GDP per capita as a proxy for income, Regner and Barria established a significant income effect, which was most prominent

¹¹⁶ "Why Magnatune is not evil," *Magnatune*, last accessed May 15, 2016, <https://magnatune.com/info/whynotevil>.

¹¹⁷ "Magnatune," *Magnatune*, last accessed May 15, 2016, magnatune.com.

for Mexico (coefficient of -1.594 with $p < 0.01$, GDP per capita of \$6,370, and average price of \$5.90) and Switzerland (coefficient of 1.591 with $p < 0.01$, GDP per capita of \$47,999, and an average price of \$9.28).¹¹⁸ Data for the UK and Eurozone was biased by currency effects, however, as Magnatune originally transposed their \$5/\$8/\$18 pricing structure into Pounds and Euros, resulting in recommended prices of £8 and €8. After the company changed their pricing structure to account for exchange rates, prices paid dropped dramatically.¹¹⁹ The researchers also discovered meaningful, although perplexing, genre effects. Rock music had the most significant positive effect on price paid (coefficient of .3986 at 1% significance) while Opera showed the most powerful negative effect (coefficient of -1.018 at 1% significance).¹²⁰ These results are unusual in terms of the common perception that Opera is high art worthy of financial support, and perhaps indicate that the main driver of paying for Opera is social signaling, which is absent on Magnatune. Christian music also had a positive effect on payments (coefficient of .5794 at 5% significance), raising the possibility that purchasing religious music reminded buyers of normative behavior.¹²¹ ¹²² Not surprisingly, normative behavior overall played a large role in the prices paid on Magnatune, with the average price paid

¹¹⁸ Regner and Barria, "Do consumers pay voluntarily," 400-401.

¹¹⁹ Ibid., 403-404.

¹²⁰ Ibid., 401.

¹²¹ Ibid.

¹²² Magnatune has changed their genre categories and the Christian genre is no longer offered on the site.

being \$8.20, very close to the recommended \$8. The median and mode of the distribution are also both \$8,¹²³ lending support to the theory proposed earlier that most users will forego the mental acrobatics of attempting to calculate a fair price and will simply choose the default option provided by the site. One final notable finding of this study is located in the analysis performed over time of user consumption patterns, which discovered that in general users stay near their first purchase price for subsequent purchases. The only exception to this was a small subset of users whose price paid steadily decreased over time,¹²⁴ raising the idea of a volume discount within a PWYW environment.

Regner followed up this initial work with a more robust analysis of Magnatune user's motivations in which a questionnaire was paired with a users' purchase data. While the data analyzed was from the same 2007 time-period as the other publication, this study was not published until 2015. Questions included basic demographic information such as income, age, and location, psychographic factors such as donations to charity and attitudes towards reciprocity and social norms, as well as Magnatune specific questions. This last set of questions is the most interesting as they allowed participants to write freely and included inquiries regarding the benefits of Magnatune, the predicted behavior of other consumers, and a rationalization of their own price

¹²³ Ibid, 399.

¹²⁴ Ibid, 405-406.

choices.¹²⁵ Regner's results show a similar income effect to the one found in the previous study, with the lower and upper ranges showing greater and more statistically significant effects.¹²⁶ Based upon regression results, Regner draws the conclusion that reciprocity is the main driver of generous payments, being significant with $p < 0.05$ or less in all regression variations.¹²⁷ The other important driver is normative behavior, which correlates strongly with payments around the recommended price (coefficient greater than 1 in two of the regression models with $p < 0.01$).¹²⁸ Fairness to the artist, while appearing as the most frequent justification of paying at or above the norm, according to Regner, "does not make customers more generous."¹²⁹

Unfortunately, Regner's study has serious flaws in both design and interpretation of regression results that need to be addressed. In terms of study design, participants were asked different questions depending on the price they typically pay. Instead of asking a neutral question along the lines of "what factors motivated you to pay the price you chose?," Regner asks those who paid less than the recommended price "what factors led to your decision to pay less than the recommended price?"¹³⁰ Predictably, this biases their answers by implying that their choice was in some way morally inferior to those

¹²⁵ Tobias Regner, "Why consumers pay voluntarily: Evidence from online music," *Journal of Behavioral and Experimental Economics* 57 (2015), 208.

¹²⁶ *Ibid.*, 211.

¹²⁷ *Ibid.*

¹²⁸ *Ibid.*

¹²⁹ *Ibid.*, 212.

¹³⁰ *Ibid.*, 213.

who paid the recommended price or higher, and answers in this category either reference self-interest or provide excuses to rationalize the lower payment. More problematic than the study design are some of the ways in which Regner interprets his data. Notably, Regner uses two proxies for reciprocity: One is a question regarding whether or not good deeds should be reciprocated, the answer to which has no significant impact on price paid. The other, which is used to justify his claim of reciprocity being the main driver of price paid on Magnatune, is a user mentioning the ability to listen before they buy as one of the benefits of the site, which he interprets as “kind behavior” that the consumer is reciprocating.¹³¹ This interpretation is suspect for two reasons: First, consumers are aware that Magnatune offers unlimited sampling as a way to promote purchase, not as a kind deed. In the same way, consumers who receive promotional offers for a free dinner at a restaurant or a discount for a store do not believe that the store is being kind, but rather that they are pursuing a certain strategy to increase sales. Second, and more important, is that listening to music before buying is better understood as risk reduction on the part of the consumer. A consumer that has spent more time listening to an album feels that there is less risk in the purchase because he or she knows what to expect musically, and therefore is willing to pay a higher price due to a higher likelihood of enjoying the music.

Another unusual interpretation of the data by Regner is his dismissal of fairness to the artist as a motivating factor, despite it being the most often

¹³¹ Ibid., 212.

mentioned item on the questionnaire. Regner's rationale reveals one of the issues of applying linear regression analysis to this type of data: because fairness was mentioned equally by those who paid the recommended price as those who paid higher than recommended, it fails to show a correlation with a higher price paid. However, the function may in fact not be linear: fairness may lead consumers to arrive at a certain price floor, perhaps the recommended price and other factors may motivate a decision to pay above this price. Fairness may also be relevant in what may be the larger decision: using Magnatune in the first place instead of downloading the music from a Torrent. This dimension cannot be captured by the regression analysis, but may in fact be very important in understanding consumer behavior towards music, especially given their prevalence of fairness in participant responses to the survey. While Magnatune provides a rich source of data for analysis, especially when combined with user questionnaires, Regner's methodology leads to conclusions that are dubious and highlights the need for more research in this area. Furthermore, his data are now almost 10 years old, which raises the question of whether or not it is still relevant when analyzing the behavior of digital natives.

Chapter 4

The Second Wave

The 2006-2008 period represents a time of unbridled optimism in internet culture, during which bold experiments were a beacon pointing to a future of cooperation, disintermediation, and openness. However, by 2009 that light had begun to burn out and the internet moved towards a more dystopian vision in which information is highly mediated and filtered, consumers are tracked in an Orwellian fashion, and content competes with ubiquitous clickbait and advertising.¹³² There are several likely culprits: the rise of social media (highly mediated, filtered, and censored), smartphones (bringing higher mediation via apps), the financial crisis (which put pressure on companies to find new monetization channels through advertising, especially in the publishing industry), the rise of aggregators such as YouTube and Spotify, as well as the mainstreaming of online activity that led to a decline in influence of those early internet adopters who were likely to be more ideologically motivated. Some would argue that these changes were inherent in the structure of the internet itself, which tends towards producing monopolies due to the enormous advantage given to early movers as well as computational advantages held by larger firms.¹³³ It can also be argued that the early

¹³² For a thorough description of the shortcomings of today's online culture, see Jaron Lanier, *Who owns the future?* (New York: Simon and Schuster, 2014).

¹³³ Ibid.

experiments in alternative online economies failed to provide models that could scale beyond a niche audience.

However, the ideas that drove early experiments in voluntary payments were not forgotten and would soon give rise to a second wave of platforms. Most directly related to previous experiments is Bandcamp, which allows artists to sell music and merchandise directly to fans using a pricing model of their own choosing. Explicit in Bandcamp's mission is "that music is an indispensable part of culture, and for that culture to thrive, artists must be compensated fairly and transparently for their work."¹³⁴ Depending upon the type of media, the company takes only 10-15% of revenues in fees - far lower than Magnatune's 50%.¹³⁵ Bandcamp launched in 2008 and rose to prominence in 2011-2013, as indicated by searches for the site on Google:

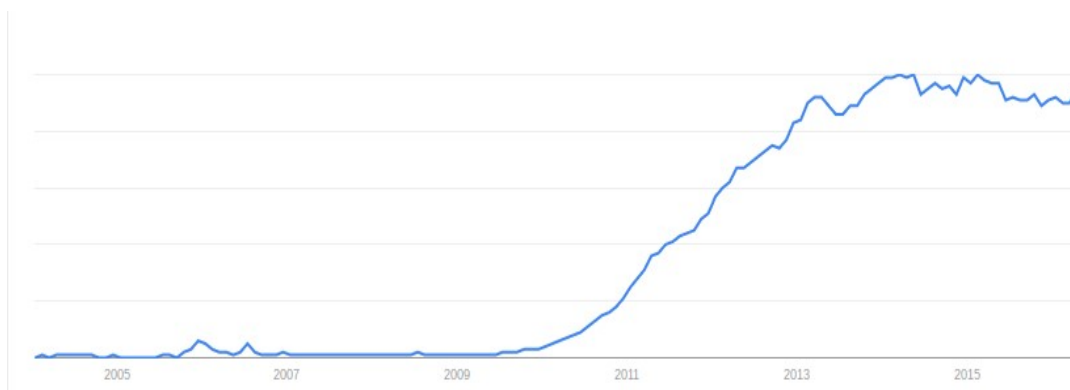


Figure. 4.1: Google Trends chart for "Bandcamp"¹³⁶

¹³⁴ "Bandcamp Fair Trade Music Policy," *Bandcamp*, last accessed May 15, 2016, https://bandcamp.com/fair_trade_music_policy.

¹³⁵ *Ibid.*

¹³⁶ "Google Trends: Bandcamp," last accessed May 15, 2016, <http://www.google.com/trends/explore#q=bandcamp&cmpt=q>.

While initially adopted by emerging and DIY artists (myself included, with my first release on the platform in early 2010),¹³⁷ it has since been embraced by more established artists, including Thom Yorke of Radiohead and Sufjan Stevens.¹³⁸ ¹³⁹ Recently, Bandcamp has launched a streaming app and subscriptions in order to compete with streaming and a more general move away from an ownership to what can be called an access economy.¹⁴⁰

A more radical and recent initiative in funding the arts (as well as other ventures) is crowdfunding. Several sites are now competing in this space, some of which, like Kickstarter, Indiegogo, and GoFundMe, have projects ranging from movies to home electronics, while others, such as PledgeMusic, have a specific focus. Unlike previous models in which the artist creates a work and then hopes to sell a finished product, crowdfunding allows the artist to fund the creation of a work by reaching out to fans. Crowdfunding is incredibly important as it is the first alternative to the record label model that addresses the issue of managing risk. As mentioned earlier, an emerging artist often cannot take the financial risk of funding an album that may or may not

¹³⁷ Brains, *Brains*, last accessed May 15, 2016, <https://brainsmusic.bandcamp.com/>.

¹³⁸ Thom Yorke, *Tomorrow's Modern Boxes*, last accessed May 15, 2016, <https://thomyorke.bandcamp.com/>.

¹³⁹ "Sufjan Stevens," Bandcamp, last accessed May 15, 2016, <http://music.sufjan.com/>.

¹⁴⁰ Juan Caragena, "What is the right name for the 'sharing economy,'" *Medium*, December 13, 2014, <https://medium.com/ouishare-connecting-the-collaborative-economy/is-there-a-better-name-for-the-sharing-economy-2d7489e1f56d#.ykusabmat>.

succeed in the market (and most albums do fail). A record label would manage this risk through diversification, investing in multiple albums so that a few successful projects could cover the losses incurred by most albums. Crowdfunding is an improvement to this model because it allows an artist to establish demand before any money is ever spent on recording: only albums that people want to buy will be made, creating a more efficient market. However, there is a potential downside to this model as well, which is that sometimes artists create work whose value is only recognized later by consumers. In the crowdfunding model, such works will never be created.

Another major distinction between crowdfunding and other models is in the framing dimension: on Kickstarter payments from fans are called “pledges,” consumers are “backers,” and a purchase is “support” for a project.¹⁴¹ Additionally, the various tiers available go much higher than the price of a record, often reaching into the thousands of dollars for exclusive rewards such as an in-home performance. This translates to a frame of reference that resembles giving to charity more than it does buying records. There are incentives (as there often are in charity), but like the NIN boxed set, the incentives have an intrinsic value that is much lower than the amount pledged, similar to the NPR coffee cup a donor might receive or a plaque on the chair of a concert hall in exchange for a large donation to the venue. The value of these incentives is primarily symbolic and serves as a reminder of one’s good deeds and generosity, reinforcing the self-signaling aspect of fan

¹⁴¹ “Kickstarter,” *Kickstarter*, last accessed May 15, 2016, <http://kickstarter.com>.

behavior in which their pledge is an expression of their identity. On some platforms, supporters can also choose to forego receiving the reward at all and only make a contribution. While a transaction on Kickstarter may not be very different from one in a record store on a material level (money is exchanged for a record), the affective dimension is radically different: First, the artist is showing a certain level of vulnerability by taking the risk of launching an online campaign, which may or may not succeed. Second, campaigns usually include a video of the artist making a personal appeal for support to the fan, creating an emotional connection. And third, fans are given a level of agency that never before existed in the music industry in which their contributions determine whether or not an album will be created.

As shown in the following Google Trends chart, crowdfunding has been rising in popularity since 2011:

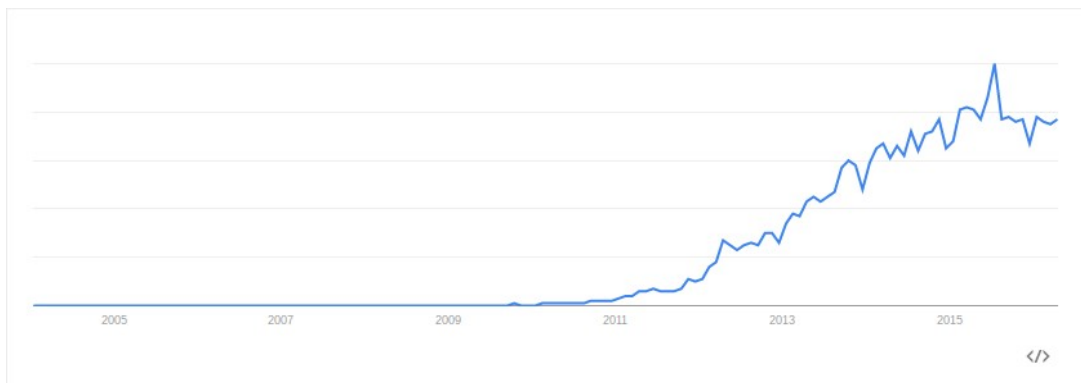


Figure 4.2: Google Trends chart for "crowdfunding"¹⁴²

¹⁴² "Google Trends: crowdfunding," last accessed May 15, 2016, <http://www.google.com/trends/explore#q=crowdfunding&cmpt=q&tz=Etc%2FGMT%2B7>.

Interest in crowdfunding music received a huge boost in 2012 with the famous (and now infamous) Amanda Palmer Kickstarter campaign. A former member of the band Dresden Dolls, Palmer had left her major label contract and appealed directly to fans to raise money for her new album. Her campaign created headlines when her initial goal of \$100,000 was surpassed and fans contributed a total of \$1.2 million, including some fans giving at the \$10,000 tier.¹⁴³ While Palmer's story initially appeared as a sign of optimism for musicians who were looking for new ways to fund their projects, Palmer's subsequent actions quickly cast a shadow over her campaign and career. The problems began with Palmer's tour after the release of the album, during which she made an appeal on her blog for local musicians to join her on stage:

you'd need to show up for a quickie rehearsal (the parts are pretty simple) in the afternoon, then come back around for the show!
we will feed you beer, hug/high-five you up and down (pick your poison), give you merch, and thank you mightily for adding to the big noise we are planning to make.¹⁴⁴

Given that she had just raised \$1.2 million on Kickstarter, asking musicians to perform with her for free created an immense backlash on social media. Palmer's attempted defense, in which she claimed that she had already spent

¹⁴³ Amanda Palmer, "Theatre Is Evil: the album, art book and tour," *Kickstarter*, last accessed May 15, 2016,

<https://www.kickstarter.com/projects/amandapalmer/amanda-palmer-the-new-record-art-book-and-tour/description>.

¹⁴⁴ Amanda Palmer, "Wanted: Horn-y and String-y Volunteers for the Grand Theft Orchestra Tour!!!!" *Amanda Palmer*, August 21, 2012,

<http://blog.amandapalmer.net/20120821/>.

the \$1.2 million and could not afford the \$35,000 required to pay performers only made things worse.¹⁴⁵ After a week of criticism, Palmer backed down and decided to pay her musicians, but the damage to her reputation and Kickstarter campaigns was already done.¹⁴⁶ One issue regarding Palmer's actions is that if voluntary payment platforms are built on a foundation of fairness, her actions subsequent to the campaign violated those principles, at least in the eyes of many musicians. In fact, one of the most poignant critiques of Palmer notices that her troubles stem from the inconsistency between her messaging and her actions.¹⁴⁷ As a final comment on Palmer, one that is not often mentioned, is that crowdfunding can perhaps be inefficient when campaigns exceed their goals by large amounts. Artists receiving such a huge sum may feel compelled to spend it even if the album could have been created for much less, and therefore money is wasted that could have funded other projects.

A further critique of crowdfunding is raised by media scholar Martin Scherzinger, who questions the value of artists becoming professional

¹⁴⁵ Kirk Hamilton, "Amanda Palmer Asks Musicians To Play For Free, Pisses Off Musicians [Update]," *Kotaku*, September 13, 2012, <http://kotaku.com/5943112/amanda-palmer-asks-musicians-to-play-for-free-pisses-off-musicians>.

¹⁴⁶ Michael Nelson, "Amanda Palmer Now Paying Volunteer Musicians," *Stereogum*, September 19, 2012, <http://www.stereogum.com/1156841/amanda-palmer-now-paying-volunteer-musicians/wheres-the-beef/>.

¹⁴⁷ Joshua Clover, "Amanda Palmer's Accidental Experiment With Real Communism," *The New Yorker*, October 2, 2012, <http://www.newyorker.com/culture/culture-desk/amanda-palmers-accidental-experiment-with-real-communism>.

fundraisers in order to sustain their careers.¹⁴⁸ If artists now have to acquire fundraising and publicity skills in order to create music, crowdfunding runs contrary to the foundational principles of economic growth in the industrial age: specialization and division of labor. Theoretically, in an efficiently functioning market, artists should devote their time to creating the best art possible and those with other skills, such as fundraising, promotion, audio recording, etc. would handle the rest. The rejoinder to this critique, offered by PledgeMusic's Benji Rogers is that while promoting a crowdfunding campaign may be hard work, "eight hours of bartending is hard work."¹⁴⁹ The reality for most musicians at the DIY/indie level is that there is no one else who will handle these tasks for them, so either they have to do it to promote their career, or fund their art through working a part-time job somewhere else, which will be far more time consuming than spending fifteen minutes each day updating Facebook. A further observation is offered by Steven Slate of Slate Audio, an audio technology company that specializes in bringing professional audio capabilities to those at the amateur level. Slate notes that "specialization is definitely going away"¹⁵⁰ but adds that the corollary is a "democratization of

¹⁴⁸ Martin Scherzinger, Personal Conversation, February 18, 2016.

¹⁴⁹ Benji Rogers, "Innovating with Music as a Digital Commodity," (Panel discussion, The NAMM Show, Anaheim Convention Center, Anaheim, California, January 21, 2016).

¹⁵⁰ Steven Slate, Personal Conversation, January 23, 2016.

media creation, and that's a good thing."¹⁵¹ While the recording industry was perhaps more efficient from a division of labor standpoint in the 70s and 80s, it was also "an elite club, and you [could not] come in because you [did not] have a large format console."¹⁵²

Finally, I would like to note some of the major distinctions between early experiments in voluntary payments and the second wave of voluntary payment platforms. Perhaps the largest distinction is that the early experiments were just that: experiments. Today's voluntary payment platforms are businesses that are funded by angel investors / venture capital funds and their primary objective is to provide returns to those investors. Interestingly, some go to great lengths to hide this relationship. For example, Bandcamp's "About" page features a photo of the company's founders working in a public library during their early years, in order to appear humble and counteract possible accusations that they are becoming wealthy on the backs of artists. Unlike Magnatune, these companies have the capital to fund growth and are aiming to reach a much bigger market than a small niche of music aficionados. Another major distinction is that unlike the Radiohead and NIN experiments, many platforms isolate free-riders away from paying customers. This keeps fans from feeling like "suckers" for paying when others are getting the music for

¹⁵¹ Steven Slate, "A3E Keynote: The Global Impact of Disruptive Music Technology," (Panel discussion, The NAMM Show, Anaheim Convention Center, Anaheim, California, January 23, 2016).

¹⁵² Ibid.

free.¹⁵³ Free-riders are kept far away on other platforms, such as torrents, and those who pay are not readily reminded of the possibility that they could have had the music for free. Lastly, perhaps the most important distinction between early experiments and the second wave of platforms is their competition. While early experiments were intended to address the challenges faced by the industry with piracy and leaking, the second wave of platforms is increasingly competing against streaming and the access economy rather than piracy. To illustrate this point, we can consider the search term “torrent” against “Spotify” in Google Trends:

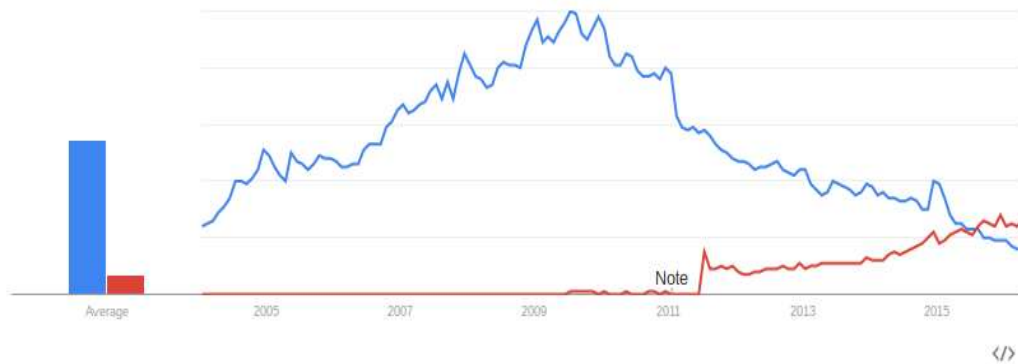


Figure 4.3: Google Trends chart for “torrent”(blue) versus “Spotify”(red)^{154 155}

¹⁵³ Suzor, “‘Peaceful Revolutions’ in copyright,” 153.

¹⁵⁴ “Google Trends: torrent + Spotify,” last accessed May 15, 2016, <https://www.google.com/trends/explore#cmpt=q&q=torrent,+spotify&geo=US>. The note on the chart represents a shift in geographical tracking methodology. Results are for the US only.

¹⁵⁵ The US has been an earlier adopter of streaming, but the trend remains similar in a global context

Consumers are increasingly moving away from illegal services to legal ones that offer on-demand access to almost any piece of music in the world. This creates a potential existential threat for the second wave of platforms that rely on an ownership model for musical content, such as Bandcamp, and casts doubts on their long-term prospects, a concern that will be considered further in the next section.

Chapter 5

Questions and Method

"The Questions"¹⁵⁶

The second wave of voluntary payment platforms raises a number of pertinent questions, which can be broadly divided into two groups. The first concerns the viability of these platforms as a major income source for artists into the future, and can be further subdivided into questions regarding the longevity of these platforms and those concerned with their generalizability outside of their current niche:

Longevity

- Are voluntary payment platforms the beneficiaries of consumer socialization that occurred during the CD era, which established a social norm around paying for and owning music? If so, do digital natives behave differently on these platforms or shun them entirely? What does this mean for the future in which digital natives are the majority of music consumers?
- Can voluntary payment platforms change behavior and create a new culture of supporting artists financially? Does being a user of a voluntary platform make a fan more likely to support musicians financially compared to those who do not use these platforms?

¹⁵⁶ Common, "The Questions," *Like Water for Chocolate* (MCA, 2000).

- How does use of streaming services affect use of voluntary payment platforms? Do users with a paid streaming subscription buy less music or pay lower prices on these platforms?

Generalizability for Artists

- Do voluntary payment platforms work equally well for artists in different segments of the market? Are there differences in support levels or prices paid for artists that are considered emerging/DIY, indie, or major acts?
- Do certain genres of music receive more support or higher prices paid? Are consumers willing to support all genres on these platforms?

Generalizability for Fans

- Do users of voluntary payment platforms hold different beliefs regarding the music industry and the importance of supporting artists than the general population? Are those who do not use these platforms motivated by the perceived excesses of the music industry? If so, can the beliefs of those in the general population be changed so that they adopt these platforms?
- Are users of voluntary payment platforms more dedicated fans of the artist than the average fan? Does music hold more importance for them in their lives compared to the average consumer?

The second set of questions concerns specific consumer behaviors within these platforms, which can be divided into questions of pricing strategy and those regarding the music and artist.

Pricing Strategy

- How does the minimum price set in a PWYW environment affect the amount paid by fans?

Music and Artist

- How do perceptions of the music and artist affect the price that fans choose to pay? Are they motivated by musical and/or extra-musical factors?

These questions will serve as a framework for the studies that follow in this dissertation and will be revisited as I present my research findings. Answering them helps us understand whether or not voluntary payments will be viable in the future as a revenue stream for artists, their consequences on creative production, as well as the types of pricing and artistic strategies that are most likely to succeed going forward.

General Method

While the method for answering these questions within each individual study will be presented in the following chapters, I do believe it is important to

separately address my general method of inquiry as well as the uniqueness of this dissertation within both the Music Department and academia more broadly. To my knowledge, this is the first interdisciplinary dissertation in the department with oversight from faculty at the Rady School of Management as well as the first to employ quantitative research methods such as market research and data mining. Furthermore, while interdisciplinary research has become a hot topic recently within academia, the existence of actual interdisciplinary research is extremely rare, and this is especially true with regards to collaborations between fields that may appear diametrically opposed, such as economics and music.

However, my research is not motivated by an ideological adherence to interdisciplinarity for its own sake and I fully acknowledge the value of narrow, specialized research that takes place within most academic departments. Instead, my concerns are purely pragmatic, and I consider my work to be driven by the questions rather than the methods. Simply put, I do not believe it is possible to satisfactorily answer the questions posed above without employing multiple methods of inquiry and drawing upon multiple fields of knowledge. This became apparent early in my work while conducting the literature review presented in Chapter 2 and noticing that most previous scholarship on this topic also draws upon a wide range of disciplines. Furthermore, some of these disciplines themselves are relatively new upstarts in academia that are the products of interdisciplinary investigations: behavioral

economics, for example, has its roots in the work of Daniel Kahneman and Amos Tversky, both psychologists.

Why do some questions elude a single field of inquiry? The reasons stem from inherent limitations within the research methodologies chosen by a particular field. To make this concrete, I will consider the three approaches used within this dissertation: qualitative research, market research, and data mining. Qualitative research is the preferred method of inquiry within ethnomusicology, and now new musicology, and its use can be traced to the historical development of the field. Traditionally, ethnomusicologists studied groups of people living within a narrowly delineated geographical area whose musical cultures were typically disseminated through oral traditions. Ethnography was well suited to these populations because researchers were able to embed themselves within these cultures in a way that permitted in-depth, detailed research. The narrow geographic range mentioned above also made ethnography effective because a researcher could stay within a limited area and be reasonably confident that they were capturing a representative sample of a population. For example, visiting several nearby villages in Bali was effective when seeking to explain Balinese musical traditions, but would lack effectiveness as a research method in answering questions about Southeast Asian music in general.¹⁵⁷

¹⁵⁷ Multiple ethnographies could be synthesized to answer such generalized questions, but this would require much greater resources than one researcher in the field.

As ethnomusicology transitioned away from the study of traditional societies and began investigating popular music and improvisation, the methods largely remained unchanged. Scholars would examine a particular group of people living in a narrowly defined geographic area, except that it would now be the Lower East Side of Manhattan, the South Side of Chicago, or the outskirts of Tokyo instead of a remote village in Africa or Central Asia. However, musical cultures are now moving online, which presents a challenge to traditional ethnographic research: how do you embed yourself within a culture that does not have a defined geographic location? Are findings from New York applicable to Reykjavik or Shreveport, Louisiana? Does interviewing subjects through Skype or reading their Reddit comments give the same type of knowledge as living amongst a culture for a year? The applicability of ethnography within the digital space becomes even more challenging when researching consumers, as I am, instead of creators. Artists make themselves visible and are typically connected to one another, making it fairly straightforward to connect with a particular music scene in a city. However, users of a platform, such as Bandcamp or Patreon, generally do not advertise this fact anywhere, are not necessarily connected to one another, and are geographically distributed all over the world. How does one therefore even find a casual Bandcamp user to interview and how many interviews would be representative of the entire global population? Ethnography, therefore, presents both pragmatic challenges when approaching internet consumer behavior and is restricted by its limited generalizability.

Market research, or traditional quantitative research, relies on survey methodology to answer a given set of questions. Sample sizes can be much bigger and geographically distributed as participants take surveys online. However, to attain better generalizability, a significant amount of depth is sacrificed. Respondents typically answer questions on a predetermined scale, such as a Likert scale, and are not able to expand upon or provide nuance to their answers. This restricts the type of questions that can be asked, such as ones about a personal relationship to music or notions of quality, and the types of responses provided, which must fit the researchers predetermined understanding of a certain issue. Furthermore, even when given the option to write more in an open response format, the level of depth is still far lower than that obtained through on-going in-person conversations over a period of time. Finally, the length of the survey itself has to be limited to prevent user fatigue whereas a conversation while conducting ethnographic research could easily last more than an hour.

Market research is also limited by the accuracy of the responses themselves. Participants may not be telling the truth in a survey or recalling information poorly. For example, Regner's analysis of Magnatune's users found that survey participants consistently over-estimated the prices they paid for albums on the site.¹⁵⁸ Even worse, some participants may be simply clicking through the survey randomly in order to complete it and be paid. Finally, the wording of questions can bias responses and priming effects may make the

¹⁵⁸ Regner, "Why Consumers Pay Voluntarily," 209-210.

answer to one question dependent on the wording of another. While these problems may be ameliorated through the use of attention checks, speed checks, negations, and randomization, they can never truly be eliminated. Additionally, while market research is more generalizable than ethnography, it is still lacking in this area. Participants are typically recruited from a population willing to be paid to take surveys, typically through a company such as Qualtrics or independently through Amazon's Mechanical Turk service. The subject population, therefore, may not be representative of the general population, especially with regards to economic status, because they are willing to spend their time being paid small amounts of money to take surveys.

Finally, the last of the methods mentioned, data mining, is currently the most fashionable and in-demand. The attraction of data mining is twofold: 1) the amount of data is so great that generalizability is no longer a concern – the sample size is the entire population and 2) accuracy is not sacrificed because actual behavior is observed. Its rise has been driven mostly by technological advances that have made it possible to gather, store, and analyze enormous amounts of information quickly and cheaply. The primary limitation in data mining, especially in the music space, is the lack of depth in the information available. While behavior is directly observed, little is usually known about the user outside of their behavior on one particular platform. However, that particular set of data may not in fact be reflective of a user's overall habits in the music space. For example, my constant streaming of the Frozen and Moana soundtracks for my daughters on Spotify is not at all reflective of my

music tastes. Furthermore, I have never streamed some of my favorite music through the service because I prefer to listen to in on CD. Outside of domain-specific behavior, data mining may be limited by the lack of other information about the user, such as demographics. For example, most data sets do not contain the income, education, or ethnicity of the user, because the platform does not collect it, but this data is in fact very important when studying motivating factors for particular user behaviors. Furthermore, data mining is often much better at answering questions of what rather than why. This has made it well suited to industry applications, such as predicting what a user will do if given a certain promotion or the likelihood of someone converting from a free tier to a premium subscription. However, it is not able to reveal the full motivations behind a certain behavior such as the fact that you paid for the limited edition boxed set of a particular artist because their music helped you through a particularly difficult time in your life.

In summary, the primary trade-offs in choosing between the above research methods are between depth, accuracy, and generalizability. Ethnography provides incredible depth and richness, but lacks generalizability to bigger populations. Data mining (assuming a large enough sample) has no issue of generalizability or accuracy, but lacks depth beyond a particular set of questions. Market research strikes a good balance between depth and generalizability but may be plagued by issues of accuracy. Each methodological approach and each study, therefore, shines some light on a particular question or set of questions, but that light is not enough to illuminate

the full subject. Employing multiple studies with different methodologies adds additional light from multiple angles, better illuminating the subject and revealing attributes that a single method might have missed. By using all three of the methodologies presented within this dissertation, it is my intention to shed more light on the topic of music fan behavior, strike a reasonable balance between depth, accuracy, and generalizability, and answer the questions presented above.

Platform

Numerous online platforms are engaged in voluntary payments in music, raising the question of which one to study in seeking to understand fan behavior. Ideally, information regarding multiple platforms could be examined and integrated to provide the most comprehensive investigation of music fan behavior in voluntary payment environments. Realistically, breadth is gained at expense of depth, and not all platforms are well-suited to conducting research or make their data publically available. Therefore, this dissertation will focus solely on Bandcamp, for the reasons outlined below.

The main factor that makes Bandcamp distinct from the other platforms is the pricing structure, which is typically either a true PWYW structure or PWYW with a price floor (listed in the format of *\$price or more* on the site). This means that any amount paid over the minimum is a true voluntary show of support by the fan to the artist. However, on other sites, especially those engaged in crowdfunding, higher support amounts typically unlock various rewards, which may be either tangible (a limited edition, t-shirt, poster, etc.) or intangible (a thank you in the liner notes, access to behind-the-scenes videos, or a Skype chat). Therefore, it is difficult to separate the true motivations fans on other sites between support for the artist and the desire to unlock a particular reward. Additionally, support tiers within crowdfunding sites are often fixed (the user can choose \$5 or \$10, but not \$7), whereas Bandcamp users can pay any amount over the minimum.

Researching behavior on Bandcamp is also aided by the fact that the products are highly standardized. Fans choose between digital (available for download in almost any encoding format and bitrate) and physical albums on CD, tape, or vinyl. Base prices for each format are usually slightly different, with tapes being cheaper than digital, CDs the same price or slightly more, and vinyl much more expensive. This makes comparison across artists and albums fairly straightforward as the actual item purchased, whether a CD or vinyl, is exactly the same and only the music and artist are different. In contrast, crowdfunding sites offer an almost infinite array of possible awards, which are extremely difficult to compare. One artist may provide unique Polaroids to each supporter, another hand-written lyric sheets, and a third a set of guitar picks.

The fairly easy access to and volume of Bandcamp's data are further factors in my decision to focus on the site. Bandcamp publishes a running sales feed on their homepage that shows albums being sold in real time, their price, and the amount paid by the fan over the minimum. To the best of my knowledge, this feed shows all of the albums sold on the site, making it possible to gather all of Bandcamp's sales data, at least by artist and album. Furthermore, the total volume of transactions is substantial, with Bandcamp's sales totaling \$5.4 million per month.¹⁵⁹ This gives me the ability to work with a very large data set of transactions, in which idiosyncrasies within any particular artist's fan base will not impact the overall analysis.

¹⁵⁹ "Bandcamp," *Bandcamp*, accessed July 20, 2017, <http://bandcamp.com>.

Finally, unlike most of the crowdfunding platforms, Bandcamp is dedicated only to music. This makes it an interesting test case in determining whether or not a new culture of supporting musical artists can be created through a platform. Bandcamp appears to believe so and is doing its part to change fan behavior through music podcasts, articles spotlighting particular artists or scenes, as well as the integration of fan accounts into the platform. Whether or not these initiatives are having an effect will be considered in the following pages.

Chapter 6

A Comparative Study of Bandcamp Users and General Music Fans

Most skepticism regarding voluntary payment platforms concerns their generalizability: Aren't they only for underground musicians? Who would ever support a famous pop star's Kickstarter campaign? Don't only old people buy music now?¹⁶⁰ Isn't Bandcamp only for the most serious music fans? The primary aim of this study is to address questions of generalizability by comparing two populations of music fans, one of which uses Bandcamp and one that does not. Participants were recruited and administered a short questionnaire via Qualtrics, which addressed their beliefs regarding music, musicians, and the music industry, music purchase habits, engagement with music online, as well as standard demographic characteristics. Analysis of the data shows that while Bandcamp users do not differ from non-Bandcamp users on demographic factors, they are, on average, more serious and more adventurous music fans, and more likely to have a paid streaming subscription than non-Bandcamp users. These findings support the longevity of Bandcamp and related platforms as digital natives and older fans are both using them and streaming does not appear to be a substitute for buying music through them. While the data does reveal some limits to generalizability, as less dedicated fans are less likely to adopt Bandcamp, a more detailed analysis of

¹⁶⁰ At South by Southwest 2017, this exact comment was made to me by multiple music industry executives on multiple occasions.

music fandom between the two populations demonstrates that in fact most music fans could potentially become Bandcamp users, supporting the potential broad generalizability of the platform. Furthermore, the data also reveal that Bandcamp users believe (correctly) that more of their money is going to the artists than do non-Bandcamp users, although this factor does not appear to be ultimately correlated with either recorded music spending or paying above the minimum price.

Additionally, the data collected in this survey was used to examine additional questions about generalizability within the platform itself as pertains to users and artists. The notion that fans of more popular music will either buy less music or support artists at lower levels is refuted by these findings. However, fans of certain genres do in fact pay above the minimum more (jazz and experimental) or less (blues) often on these platforms. Furthermore, holding other factors constant, men were found to be more generous towards artists on the site than women, a counterintuitive finding that is discussed further in the results.

Finally, the data revealed several other important findings regarding recorded music spending, with important implications for the digital music industry. The first is that music spending is very highly skewed, with an average spend of approximately twice the median and 11% of fans responsible for 50% of total spending. Analyzing this data further reveals why fixed-price subscription streaming models will forego significant amounts of revenue that could otherwise accrue to artists and labels. The second set of findings

concerns the role of beliefs in music spending, and reveals that normative beliefs do significantly drive music spending and that a perceived lack of agency can drive fans to illegal platforms and free streaming services. However, the same findings show that beliefs regarding the industry itself (such as the amount of money musicians make or who benefits from sales of recorded music) do not have any influence on spending, and their use as justifications of music piracy is likely to be an ex-post facto rationalization on the part of the consumer. Finally, the analysis of Bandcamp users' open responses reveals that notions of fairness do in fact underpin voluntary financial support for artists, as well as the ways in which fans mentally construct a fair price.

Participants

Participants were recruited by Qualtrics, with targeting based on five factors, split into those that hold relevance for the study and those intended primarily to increase the incidence rate of Bandcamp users to fulfill Qualtrics' requirements.

The factors with relevance for this study are as follows:

- Age between 22 and 38. The choice of age was based upon restricting the survey to those who would have engaged digital music in their formative years as music fans. The cutoff of 38 corresponds to a fan being a college senior in the year that Napster was released.

- Annual household income of at least \$20,000 per year. Fans below this income are not likely to be significant music buyers simply because they are struggling to meet their basic needs. Therefore, they are not likely to represent the target market of the music industry or voluntary payment platforms.
- Residing within the United States. While an international study would certainly provide valuable information about differences in behavior between countries, the sample size was constrained by the research budget and an international study at this sample size would be unlikely to yield statistically significant results. Furthermore, the voluntary payment platforms discussed in this dissertation are all US-based.

The two remaining factors were intended to increase the incidence rate (IR) of Bandcamp users within the sample. Qualtrics required an IR of at least 5% in order to maintain their quoted price per complete. It should be noted that these factors do limit the generalizability of this study and that the results may not apply to populations with different demographic characteristics.

- Minimum education level of some college coursework completed, with the assumption that Bandcamp users are more likely to have a higher education level.
- Residing within a list of Metropolitan Statistical Areas (MSAs) provided to Qualtrics by me, with the assumption that Bandcamp users are more likely to live within cities that are either larger, such as New York or Los

Angeles, or perceived to be more hip, such as Austin or Boulder. The full list of targeted MSAs is shown in Appendix 1.

The requested sample size was 500 participants, split equally between Bandcamp and non-Bandcamp users. Furthermore, only those who consented to participating in the study, passed Qualtrics' speeder screener (based upon median complete times), and passed my attention checks (embedded within question matrices) were counted as completed responses. The full breakdown of participants by completion is as follows:¹⁶¹

Table 6.1: Study Participants

Initiated study	4577
Did not consent to take questionnaire	204
Failed speeder screener	3
Failed attention checks	1073
Over-quota for Bandcamp users	2777
Completed responses	520

Prior to analyzing the data, a number of respondents were removed from the sample for the following reasons:

- Twelve responses were removed due to respondents writing either gibberish or nonsense within text fields.

¹⁶¹ Gender and age breakdowns are for participants included in the analysis only, not the full 520 completed responses. Some completed responses were removed from analysis for reasons detailed in the under "Method."

- One response was removed due to a technical issue within Qualtrics that resulted in data not being properly recorded.
- Three respondents that identified as unspecified gender were removed due to the low sample size.
- Twenty-four respondents who indicated that they do not listen to any music online (including via streaming services) were removed from the sample, as they do not represent the target audience for digital music initiatives.
- Six respondents with less than a high school education were removed from the sample, due to the low sample size and very different beliefs held by this group compared to the rest of the sample.

This resulted in a final sample size of 474, which is comprised of 241 Bandcamp users and 233 non-Bandcamp users. The full breakdown of the sample by gender, age, income, education, and ethnicity is as follows:

Table 6.2: Gender of Study Participants

Gender	Bandcamp	Non-Bandcamp
Female	66%	70%
Male	34%	30%

Table 6.3: Age of Study Participants

Age	Bandcamp	Non-Bandcamp
20-22	14%	13%
23-27	12%	12%
26-28	14%	11%
29-31	11%	10%
32-34	11%	7%
35-37	16%	13%
38-40	22%	34%

Table 6.4: Annual Household Income of Study Participants

Income	Bandcamp	Non-Bandcamp
Less than \$10K	3%	6%
\$10K-\$20K	7%	8%
\$20K-\$30K	13%	9%
\$30K-\$40K	8%	12%
\$40K-\$50K	10%	10%
\$50K-\$60K	10%	9%
\$60K-\$70K	8%	6%
\$70K-\$80K	12%	8%
\$80K-\$90K	5%	5%
\$90K-100K	6%	7%
\$100K-\$150K	11%	13%
More than \$150K	7%	7%

Table 6.5: Education Level of Study Participants

Education	Bandcamp	Non-Bandcamp
High School	12%	21%
Some College	28%	33%
2 Year Degree	14%	12%
4 Year Degree	33%	24%
Prof. Degree	10%	8%
Doctorate	3%	2%

Table 6.6: Ethnicity of Study Participants

Ethnicity	Bandcamp	Non-Bandcamp
African American	8%	7%
Asian	2%	4%
Hispanic / Latino	12%	9%
American Indian / Alaska Native	1%	3%
Hawaiian / Pacific Islander	0%	1%
White	73%	73%
Other	4%	3%

Questionnaire

Participants were asked to complete a short (~ 10 minutes) questionnaire via Qualtrics, the full text of which is included in Appendix 2. Questions asked were primarily concerned with economic beliefs regarding musicians (wealth, motivations for playing music, income sources, etc.) and the music industry (how much of a CD price goes to the artist, who benefits the most from the purchase of an album, etc.). Additionally, fans were asked

questions regarding their level of fandom, music preferences, music purchase habits, and demographic factors.

Data Transformation

All data transformation and analysis was performed using the R language within R Studio. Prior to analysis, the following transformations were performed on the data:

- A popularity variable was constructed using the names of the respondents' three favorite musical artists. First, a numerical popularity value was retrieved for each of these names from Spotify's Web API¹⁶² using a function I wrote to retrieve data with the assistance of the httr package for R.¹⁶³ In two cases, missing data was filled in using the average popularity of the other artists indicated by the respondent. Finally, an average of the three artists' popularity was calculated.
- A single fandom variable was constructed using the sum of the scores from the four fandom questions in the questionnaire. These were all statements with which the respondents were asked to agree or disagree on a seven-point Likert scale. The four statements are as follows:

Listening to music is one of my favorite activities.

Music is an important part of my life.

¹⁶² "Get an Artist," Spotify for Developers: WEB API, last accessed December 18, 2019. <https://developer.spotify.com/documentation/web-api/reference/artists/get-artist/>

¹⁶³ "httr: Tools for Working with URLs and HTTP," Hadley Wickham. <https://cran.r-project.org/web/packages/httr/index.html>

I enjoy talking about music with others.

I like to spend time discovering and listening to new music.

- A recorded music spending variable was constructed based upon respondents' self-reported music purchasing habits. Respondents were asked to provide the number of purchases they made of the following during the past six months:

Music album on CD

Digital download of full music album

Digital download of single music track

Music album on Vinyl

Music album on Cassette

The rationale behind asking respondents to report the past six months was to strike a balance between recall and variability of spending. While recall decreases with time, spending over a short time period may not be reflective of annual spending due to high variability, with spending in a given time period depending on album release dates, concert attendance, and visits to record stores. The number of purchases was then transformed into an annual spending amount by doubling each amount and multiplying the number of purchases of each format by the following values:

Table 6.7: Estimated Price by Format

Format	Price
Music album on CD	\$15
Digital download of full music album	\$10
Digital download of single music track	\$1
Music album on Vinyl	\$20
Music album on Cassette	\$5

- A three-level factor was constructed based upon respondents' self-reported engagement with music online. The levels are as follows:

Does not listen to music online

Uses free streaming services or sites

Has a paid subscription to at least one streaming service

As indicated earlier, those that do not listen to music online were removed from the sample, leaving a two-level factor for analysis.

- A rural percentage variable was incorporated into the data using publicly available information from the 2010 US Census.¹⁶⁴ This variable indicates the percentage of the population within each geographical area considered to be living in a rural area and was intended to serve as a proxy to indicate whether or not a respondent was living in a city. The theoretical influence of this variable could be that city dwellers

¹⁶⁴ "Census 2010," U.S. Census Bureau, last accessed December 29, 2019. <http://census.gov>.

have more access to record stores and live music venues, potentially boosting recorded music spending independent of other factors.

- Factors were created to capture respondents' underlying beliefs regarding musicians and the music industry, based upon the following questions in the survey:

When you buy music, how much of a \$10 sales price do you believe goes to the artist? (slider with whole number values between \$0 and \$10)

Physical CD in a store or online retailer (full album)

Digital Download from iTunes, Amazon, or other online music store (full album)

When buying music as a CD or digital download, who do you believe receives the most financial benefit? Please rank (change the order by clicking and dragging) from 1 to 5, with 1 being the most financial benefit and 5 being the least.

The following are all agree / disagree statements on a seven-point Likert scale:

The musicians whose music I listen to have significantly more money than they need.

The musicians whose music I listen to have a hard time making ends meet financially.

The musicians whose music I listen to create music because they love playing/singing.

The musicians whose music I listen to create music to make money.

My purchase of a CD or digital download helps the artist financially.

My purchase of a CD or digital download helps the artist in their career prospects.

Musicians make most of their money from live performances.

Musicians make most of their money from selling recorded music.

A Non-Graphical Cattell's Scree Test was performed using the nFactors package in R,¹⁶⁵ which indicated that responses from the preceding questions could be separated into four primary factors. This number was confirmed by analyzing the spectral decomposition of the correlation matrix of responses. Factor analysis was performed with a varimax rotation, which yielded the following factor loadings, corresponding to the preceding questions:

¹⁶⁵ "nFactors: Parallel Analysis and Non Graphical Solutions to the Cattell Scree Test," Gilles Raiche and David Maggis. <https://cran.r-project.org/web/packages/nFactors/nFactors.pdf>

Table 6.8: Factor Loadings

Question	1	2	3	4
Amount of CD Price to Artist		0.159	0.811	
Amount of Digital Price to Artist			0.708	0.151
Ranking Purchase Benefit	0.233	0.176	0.287	0.211
More Money than Need	0.877	0.119		
Hard Time Making Ends Meet	-0.781			-0.113
Love to Play Music	-0.251			0.279
Play to Make Money	0.329			
Purchase Helps Financially	0.148		0.192	0.742
Purchase Helps Career	0.126			0.758
Income from Concerts		-0.714		
Income from Recordings		0.916	0.209	0.133

Based upon these loadings, the factors were assigned the following designations:

Factor 1: Rich Musicians – the belief that musicians are wealthy

Factor 2: Income from Recordings – the belief that musicians make most of their income from recorded music.

Factor 3: Money to Artist – the respondent's belief regarding the amount of the purchase price of physical and digital music purchases that is received by the artist.

Factor 4: Impact to Artist – the perceived impact to the artist of making a purchase of his or her music.

Modelling Results

The survey data was analyzed using multivariate regression models that predict the following:

- Likelihood of being a Bandcamp user versus a non-Bandcamp user.
- Total recorded music spending.
- Price paid above the minimum.

The variables used in the analysis are detailed in Table 6.9.

Bandcamp users versus non-Bandcamp users

In order to predict the likelihood of a fan being a Bandcamp user versus a non-Bandcamp user, the following logistic regression model was used:

$$\begin{aligned} \text{Bandcamp_YN} = & \beta_0 + \beta_1 * \text{Fandom} + \beta_2 * \text{Mus_Online_Factor} + \beta_3 \\ & * \text{Imp_Buy_Music} + \beta_4 * \text{Rich_Musicians} + \beta_5 \\ & * \text{Income_from_Recordings} + \beta_6 * \text{Money_to_Artist} + \beta_7 \\ & * \text{Impact_to_Artist} + \beta_8 * \text{Pop} + \beta_9 * \text{Age_Factor} + \beta_{10} \\ & * \text{Income_Factor} + \beta_{11} * \text{Gender} + \beta_{12} * \text{Marital_Status} + \beta_{13} \\ & * \text{Num_Children} + \beta_{14} * \text{Education} + \beta_{15} * \text{Ethnicity} + \beta_{16} \\ & * \text{Play_Mus_Inst} + \beta_{17} * \text{Prof_Mus} + \beta_{18} * \text{Rural_Percentage} + \beta_{19:33} \\ & * \text{Genre Factors} + \varepsilon \end{aligned}$$

Table 6.9: Summary of Variables

Variable	Type	Description
Bandcamp_YN	Factor	Whether or not respondent has ever used Bandcamp
Bandcamp_Min_Price	Continuous	Respondent's self-report of how often they pay above the minimum price on Bandcamp, with 1 being never and 7 being all of the time.
Bandcamp_Money_to_Artist	Continuous	Amount of sale price on Bandcamp that respondent believes is received by the artist
Rec_Spend	Continuous	Recorded music spending in US dollars, calculated as outlined above
Fandom	Continuous	Level of respondent's music fandom
Music_Online_Factor	Factor	Whether or not the respondent has free or paid subscriptions to an online music streaming service
Imp_Buy_Music	Continuous	The extent to which the respondent agrees or disagrees that it is important to purchase recorded music or pay for a streaming subscription to support musical artists
Pop	Continuous	Average popularity of respondent's top three favorite artists
Rich_Musicians	Continuous	Factor 1 from above factor analysis
Income_from_Recordings	Continuous	Factor 2 from above factor analysis
Money_to_Artist	Continuous	Factor 3 from above factor analysis
Impact_to_Artist	Continuous	Factor 4 from above factor analysis
Income_Factor	Factor	Self-reported income divided into bins of:
		\$20K between \$0-\$100K
		\$100-\$150K Over \$150K
Age_Factor	Factor	
Education	Factor	Self-reported highest completed education level
Gender	Factor	
Num_Children	Continuous	Number of children living with or supported by respondent
Marital_Status	Factor	
Ethnicity	Factor	
Rural_Percentage	Continuous	Percentage of land considered rural in respondent's zip code
Play_Music_Inst	Factor	Whether or not the respondent plays a musical instrument
Prof_Mus	Factor	Whether or not the respondent is a professional or aspiring professional musician
Genre	Factor	Binary variables for whether or not a genre is one of the respondent's favorites. Up to three could be selected.

Regression results in Table 6.10 (all tables in this chapter constructed using R package `stargazer`¹⁶⁶) show that Bandcamp users have higher levels of music fandom, are more likely to have a paid music subscription, believe more of their money spent on recorded music is received by the artist, are more likely to play a musical instrument, and are more likely to be fans of experimental music. However, contrary to assumptions made by those in the industry, Bandcamp users listen to music that is just as popular as that preferred by non-Bandcamp users, hold similar core beliefs with respect to other factors, believe equally in the importance of buying music, and do not differ from non-Bandcamp users with respect to any demographic factors. These specific findings will be discussed in greater detail in the sections covering generalizability and longevity.

¹⁶⁶ "stargazer: Well-Formatted Regression and Summary Statistics Tables," Marek Hlavac (2018), package version 5.2.1. <https://CRAN.R-project.org/package=stargazer>

Table 6.10: Comparison of Bandcamp and Non-Bandcamp Users

Dependent Variable: Bandcamp_YN

Fandom	0.082** (0.038)
Mus_Online_FactorPaid	0.844*** (0.244)
Imp_Buy_Music	0.154 (0.103)
Money_to_Artist	0.326*** (0.119)
Impact_to_Artist	0.258* (0.137)
Rich_Musicians	-0.264* (0.140)
Income_from_Recordings	-0.049 (0.114)
Pop	0.002 (0.010)
Age_Factor(23,26)	-0.113 (0.463)
Age_Factor(26,29)	0.123 (0.468)
Age_Factor(29,32)	0.189 (0.485)
Age_Factor(32,35)	0.528 (0.525)
Age_Factor(35,38)	0.205 (0.475)
Age_Factor(38,40)	-0.311 (0.436)
Income_Factor(2,4)	0.068 (0.416)
Income_Factor(4,6)	0.110 (0.437)
Income_Factor(6,8)	0.398 (0.471)
Income_Factor(8,10)	-0.068 (0.508)
Income_Factor(10,11)	0.054 (0.515)
Income_Factor(11,12)	0.431 (0.641)
GenderMale	0.341 (0.264)
Marital_StatusMarried	-1.131* (0.617)
Marital_StatusNot married, and not living with a partner	-1.058 (0.663)
Marital_StatusNot married, but living with a partner	-0.546 (0.654)
Marital_StatusSeparated	-0.984 (1.294)
Marital_StatusWidowed	0.794 (1.553)
Num_Children	-0.064 (0.109)
EducationHigh school graduate	-0.448 (0.400)
EducationSome college	-0.391 (0.314)
Education2 year degree	0.022 (0.388)
EducationProfessional degree	0.616 (0.447)
EducationDoctorate	-0.264 (0.786)
EthnicityAmerican Indian or Alaska Native ¹⁶⁷	-1.852** (0.942)
EthnicityAsian	-0.807 (0.749)
EthnicityBlack or African American	0.253 (0.498)
EthnicityHispanic/Latino	0.154 (0.389)
EthnicityNative Hawaiian or Pacific Islander	-15.363 (799.913)
EthnicityOther	0.175 (0.624)
Play_Mus_InstYes	0.518** (0.247)
Prof_MusYes	0.249 (0.567)
Rural_Percentage	-0.002 (0.005)
Genre_PopYes	0.400 (0.288)
Genre_RockYes	0.183 (0.313)
Genre_JazzYes	0.150 (0.469)
Genre_MetalYes	0.105 (0.390)
Genre_ClassicalYes	-0.229 (0.411)
Genre_IntYes	0.766 (0.555)
Genre_CountryYes	0.040 (0.336)
Genre_BluesYes	0.468 (0.542)
Genre_FolkYes	0.764 (0.471)
Genre_ElecYes	0.377 (0.380)
Genre_RapYes	0.220 (0.344)
Genre_RBYes	0.035 (0.343)
Genre_EasyYes	-0.018 (0.390)
Genre_ExpYes	1.490** (0.653)
Constant	-3.100** (1.448)
Observations	474
Log Likelihood	-261.604
Akaike Inf. Crit.	635.208

Note:

*p<0.1; **p<0.05; ***p<0.01

¹⁶⁷ The sample size supporting this finding is very low, as there are only nine respondents that identify as an American Indian or Alaska Native. Because of this and the fact that belonging to other ethnic groups did not have a statistically significant effect, I have chosen to omit this finding from my discussion of the results.

Recorded Music Spending

The second set of regression models concerns recorded music spending, and is again connected to questions of generalizability and longevity: Do fans of different genres spend equally? Are older fans more likely to buy music than younger ones? How does streaming affect spending? To predict recorded music spending for the total sample, the following linear (OLS) regression model was constructed:

$$\begin{aligned} \ln(\text{Rec_Spend} + 1) &= \beta_0 + \beta_1 * \text{BandcampY_N} + \beta_2 * \text{Fandom} + \beta_3 * \text{Mus_Online_Factor} \\ &+ \beta_4 * \text{Imp_Buy_Music} + \beta_5 * \text{Rich_Musicians} + \beta_6 \\ &* \text{Income_from_Recordings} + \beta_7 * \text{Money_to_Artist} + \beta_8 \\ &* \text{Impact_to_Artist} + \beta_9 * \text{Pop} + \beta_{10} * \text{Age_Factor} + \beta_{11} \\ &* \text{Income_Factor} + \beta_{12} * \text{Gender} + \beta_{13} * \text{Marital_Status} + \beta_{14} \\ &* \text{Num_Children} + \beta_{15} * \text{Education} + \beta_{16} \\ &* \text{Ethnicity} + \beta_{17} * \text{Rural_Percentage} + \beta_{18} * \text{Play_Mus_Inst} + \beta_{19} \\ &* \text{Prof_Mus} + \beta_{20:34} * \text{Genre Factors} + \varepsilon \end{aligned}$$

As shown in the results in Table 6.11, recorded music spending is higher for respondents who are Bandcamp users, have a higher level of music fandom, pay for a streaming subscription, believe in the importance of buying music, have an annual household incomes between \$20-\$60K a year compared to less than \$20K a year, have fewer children, and are fans of classical music versus those who do not consider it one of their top three genres. Interestingly,

none of the four factors constructed to capture beliefs about the music industry had any effect on spending, a finding that will be discussed further later in this chapter.

The same model was used to analyze Bandcamp users' and non-Bandcamp users' spending separately, with the exception of the BandcampY_N variable. In the case of Bandcamp users, recorded music spending is higher for those with a higher level of music fandom, paid streaming subscribers, income of \$20-\$40K a year versus less than \$20K a year, and those who are fans of rock music versus those who do not consider it one of their top three genres. In the case of non-Bandcamp users, spending is higher for those who pay for a streaming subscription, believe in the importance of buying recorded music, and consider themselves to be professional or aspiring professional musicians.

Table 6.11: Recorded Music Spending

	Dependent Variable: ln(Rec Spend + 1)		
	Total	Bandcamp	Non-Bandcamp
Bandcamp_YNYes	0.845*** (0.164)		
Fandom	0.067*** (0.025)	0.071** (0.033)	0.082* (0.044)
Mus_Online_FactorPaid	0.637*** (0.166)	0.534*** (0.202)	0.798*** (0.282)
Imp_Buy_Music	0.262*** (0.070)	0.005 (0.088)	0.368*** (0.120)
Rich_Musicians	-0.062 (0.093)	-0.104 (0.107)	-0.158 (0.175)
Income_from_Recordings	0.031 (0.077)	0.076 (0.094)	0.026 (0.138)
Money_to_Artist	-0.030 (0.079)	0.053 (0.094)	-0.098 (0.145)
Impact_to_Artist	0.109 (0.091)	0.046 (0.114)	0.066 (0.160)
Pop	0.001 (0.006)	-0.004 (0.008)	0.001 (0.012)
Age_Factor(23,26]	-0.128 (0.308)	0.032 (0.365)	0.049 (0.557)
Age_Factor(26,29]	-0.082 (0.311)	0.285 (0.343)	-0.452 (0.603)
Age_Factor(29,32]	-0.040 (0.330)	-0.215 (0.384)	0.128 (0.607)
Age_Factor(32,35]	0.007 (0.349)	0.436 (0.389)	-0.405 (0.670)
Age_Factor(35,38]	-0.044 (0.315)	0.613* (0.370)	-0.443 (0.571)
Age_Factor(38,40]	0.263 (0.293)	0.432 (0.366)	0.086 (0.501)
Income_Factor(2,4]	0.683*** (0.276)	1.067*** (0.336)	0.415 (0.469)
Income_Factor(4,6]	0.726** (0.292)	0.561 (0.366)	0.948* (0.506)
Income_Factor(6,8]	0.429 (0.308)	0.595 (0.379)	0.518 (0.539)
Income_Factor(8,10]	0.375 (0.341)	0.804* (0.408)	0.269 (0.592)
Income_Factor(10,11]	0.559 (0.345)	0.531 (0.433)	0.668 (0.583)
Income_Factor(11,12]	-0.009 (0.420)	0.558 (0.497)	-0.145 (0.755)
GenderMale	0.079 (0.174)	0.119 (0.208)	0.047 (0.321)
Marital_StatusMarried	0.260 (0.408)	0.341 (0.438)	0.223 (0.841)
Marital_StatusNot married, and not living with a partner	-0.374 (0.439)	-0.212 (0.486)	-0.447 (0.880)
Marital_StatusNot married, but living with a partner	-0.248 (0.435)	-0.141 (0.489)	-0.393 (0.885)
Marital_StatusSeparated	-0.157 (0.852)	0.152 (1.098)	0.526 (1.494)
Marital_StatusWidowed	-0.029 (1.011)	-1.293 (1.065)	2.206 (2.139)
Num_Children	-0.155** (0.073)	-0.161 (0.100)	-0.180 (0.118)
EducationHigh school graduate	-0.320 (0.267)	-0.657* (0.351)	-0.156 (0.457)
EducationSome college	-0.173 (0.211)	-0.304 (0.254)	-0.069 (0.375)
Education2 year degree	-0.344 (0.261)	-0.191 (0.300)	-0.230 (0.499)
EducationProfessional degree	0.442 (0.295)	0.480 (0.335)	0.557 (0.560)
EducationDoctorate	0.193 (0.519)	-0.224 (0.606)	1.065 (0.991)
EthnicityAmerican Indian or Alaska Native	0.842 (0.557)	1.471 (0.976)	0.172 (0.805)
EthnicityAsian	-0.261 (0.504)	-1.122* (0.649)	0.011 (0.858)
EthnicityBlack or African American	-0.201 (0.335)	0.001 (0.373)	-0.507 (0.624)
EthnicityHispanic/Latino	-0.145 (0.254)	-0.247 (0.274)	-0.362 (0.515)
EthnicityNative Hawaiian or Pacific Islander	-0.179 (0.955)		-0.105 (1.206)
EthnicityOther	0.625 (0.425)	0.578 (0.508)	0.418 (0.811)
Rural_Percentage	-0.003 (0.003)	-0.004 (0.004)	0.004 (0.005)
Play_Mus_InstYes	-0.223 (0.168)	-0.107 (0.198)	-0.226 (0.302)
Prof_MusYes	0.398 (0.359)	-0.343 (0.364)	1.987** (0.857)
Genre_PopYes	0.094 (0.192)	0.147 (0.251)	0.163 (0.330)
Genre_RockYes	0.241 (0.207)	0.569** (0.267)	0.010 (0.358)
Genre_JazzYes	-0.083 (0.314)	0.643* (0.361)	-0.722 (0.620)
Genre_MetalYes	0.186 (0.263)	0.408 (0.329)	-0.116 (0.490)
Genre_ClassicalYes	0.594** (0.272)	0.248 (0.373)	0.824* (0.430)
Genre_IntYes	0.298 (0.361)	0.109 (0.392)	0.439 (0.818)
Genre_CountryYes	0.152 (0.226)	0.110 (0.280)	0.153 (0.392)
Genre_BluesYes	0.331 (0.366)	-0.107 (0.444)	0.866 (0.642)
Genre_FolkYes	-0.299 (0.302)	-0.625* (0.338)	-0.446 (0.601)
Genre_ElecYes	-0.058 (0.255)	-0.086 (0.290)	-0.255 (0.505)
Genre_RapYes	0.429* (0.235)	0.544* (0.287)	0.321 (0.415)
Genre_RBYes	0.123 (0.230)	0.022 (0.287)	0.216 (0.396)
Genre_EasyYes	-0.067 (0.264)	0.248 (0.366)	-0.163 (0.412)
Genre_ExpYes	0.498 (0.364)	0.344 (0.365)	1.089 (1.068)
Constant	-0.158 (0.957)	1.778 (1.132)	-0.914 (1.763)
Observations	474	241	233
R2	0.326	0.324	0.337
Adjusted R2	0.236	0.128	0.131
Residual Std. Error	1.554 (df = 417)	1.251 (df = 186)	1.822 (df = 177)
F Statistic	3.609*** (df = 56; 417)	1.650*** (df = 54; 186)	1.635*** (df = 55; 177)

Note:

*p<0.1; **p<0.05; ***p<0.01

Price Paid Over the Minimum

The final regression model seeks to predict how often a respondent pays above the minimum price on Bandcamp. Again, this is a self-reported frequency on a seven-point scale, with 1 being never and 7 being all of the time. The aim of this model is to examine the factors that drive payments over the minimum on the site. The linear (OLS) regression model used is as follows:

Bandcamp_Min_Price

$$\begin{aligned} &= \beta_0 + \beta_1 * Fandom + \beta_2 * Mus_Online_Factor + \beta_3 * Imp_Buy_Music \\ &+ \beta_4 * Bandcamp_Money_to_Artist + \beta_5 * Pop + \beta_6 * Age_Factor + \beta_7 \\ &* Income_Factor + \beta_8 * Gender + \beta_9 * Marital_Status + \beta_{10} \\ &* Num_Children + \beta_{11} * Education + \beta_{12} * Ethnicity + \beta_{13} \\ &* Play_Mus_Inst + \beta_{14} * Prof_Mus + \beta_{15:29} * Genre\ Factors + \varepsilon \end{aligned}$$

Another version of the regression was run using the four music industry belief factors instead of Bandcamp_Money_to_Artist, although as shown in the results, none of these factors was found to have a statistically significant effect on the frequency of paying over the minimum price nor did their inclusion or exclusion markedly effect the overall model.

As shown in Table 6.12, the frequency of paying over the minimum price is increased in Bandcamp users who pay for a streaming subscription, are male, have a two-year degree versus a four-year degree, and selected jazz and/or experimental music as one of their top three favorite genres. Conversely, choosing either Easy Listening or Blues as a favorite genre led to a lower

frequency of payments over the minimum price. These results will be discussed in greater detail in the discussion of generalizability later in chapter.

Table 6.12: Frequency of Payments over the Minimum

	Dependent Variable: Bandcamp_Min_Price	
	1	2
Fandom	-0.050 (0.032)	-0.054* (0.032)
Mus_Online_FactorPaid	0.837*** (0.195)	0.846*** (0.196)
Imp_Buy_Music	0.140* (0.082)	0.120 (0.085)
Bandcamp_Money_to_Artist	0.055 (0.041)	0.037 (0.044)
Impact_to_Artist		0.143 (0.114)
Rich_Musicians		-0.064 (0.105)
Income_from_Recordings		0.038 (0.091)
Pop	0.006 (0.007)	0.007 (0.007)
Age_Factor(23,26]	0.531 (0.352)	0.550 (0.353)
Age_Factor(26,29]	-0.106 (0.330)	-0.129 (0.332)
Age_Factor(29,32]	0.359 (0.366)	0.376 (0.368)
Age_Factor(32,35]	-0.047 (0.375)	-0.052 (0.376)
Age_Factor(35,38]	0.205 (0.357)	0.187 (0.362)
Age_Factor(38,40]	0.006 (0.353)	-0.008 (0.355)
Income_Factor(2,4]	-0.111 (0.325)	-0.100 (0.327)
Income_Factor(4,6]	0.191 (0.348)	0.283 (0.356)
Income_Factor(6,8]	0.198 (0.361)	0.284 (0.368)
Income_Factor(8,10]	0.194 (0.386)	0.266 (0.394)
Income_Factor(10,11]	-0.198 (0.414)	-0.112 (0.420)
Income_Factor(11,12]	-0.372 (0.471)	-0.325 (0.477)
GenderMale	0.401** (0.197)	0.447** (0.202)
Marital_StatusMarried	0.062 (0.421)	0.043 (0.424)
Marital_StatusNot married, and not living with a partner	-0.177 (0.464)	-0.157 (0.469)
Marital_StatusNot married, but living with a partner	0.092 (0.465)	0.147 (0.473)
Marital_StatusSeparated	-1.094 (1.052)	-0.949 (1.064)
Marital_StatusWidowed	1.762* (1.014)	1.665 (1.026)
Num_Children	0.018 (0.096)	0.016 (0.096)
EducationHigh school graduate	-0.282 (0.330)	-0.274 (0.333)
EducationSome college	0.315 (0.243)	0.330 (0.246)
Education2 year degree	0.591** (0.284)	0.579** (0.289)
EducationProfessional degree	-0.012 (0.323)	0.028 (0.325)
EducationDoctorate	0.928 (0.582)	0.950 (0.586)
EthnicityAmerican Indian or Alaska Native	-1.358 (0.940)	-1.469 (0.946)
EthnicityAsian	-0.311 (0.628)	-0.224 (0.633)
EthnicityBlack or African American	0.534 (0.363)	0.527 (0.365)
EthnicityHispanic/Latino	0.401 (0.261)	0.378 (0.262)
EthnicityOther	-0.031 (0.485)	-0.127 (0.491)
Play_Mus_InstYes	-0.090 (0.188)	-0.106 (0.191)
Prof_MusYes	0.318 (0.351)	0.301 (0.353)
Genre_PopYes	0.182 (0.235)	0.205 (0.242)
Genre_RockYes	-0.027 (0.257)	-0.006 (0.258)
Genre_JazzYes	0.811** (0.346)	0.862** (0.350)
Genre_MetalYes	-0.158 (0.314)	-0.134 (0.318)
Genre_ClassicalYes	-0.272 (0.358)	-0.245 (0.361)
Genre_IntYes	-0.097 (0.378)	-0.047 (0.380)
Genre_CountryYes	-0.399 (0.261)	-0.345 (0.266)
Genre_BluesYes	-1.162*** (0.422)	-1.181*** (0.426)
Genre_FolkYes	-0.130 (0.328)	-0.128 (0.329)
Genre_ElecYes	-0.062 (0.281)	-0.039 (0.283)
Genre_RapYes	-0.241 (0.269)	-0.185 (0.278)
Genre_RBYes	0.120 (0.278)	0.156 (0.281)
Genre_EasyYes	-0.767** (0.341)	-0.682* (0.355)
Genre_ExpYes	0.890*** (0.338)	0.871** (0.347)
Constant	2.487** (1.104)	2.523** (1.112)
Observations	241	241
R2	0.364	0.371
Adjusted R2	0.197	0.193
Residual Std. Error	1.209 (df = 190)	1.213 (df = 187)
F Statistic	2.178*** (df = 50; 190)	2.082*** (df = 53; 187)

Note:

*p<0.1; **p<0.05; ***p<0.01

Generalizability for Fans

Returning to the research questions posed in Chapter 5, what do these results reveal regarding the potential to generalize voluntary payment models to the broader audience of music fans? I would like to begin this discussion by looking closer at the differences between Bandcamp users and non-Bandcamp users with respect to fandom, as this is criteria most often cited by skeptics of voluntary payment platforms. As shown in Table 6.10, an increase in a music fan's level of fandom by 1 point on the 24-point scale translates to a 1.085 times greater chance of them being a Bandcamp user. Using a linear regression model, we see that Bandcamp users have an average fandom score that is 0.7 points higher than non-Bandcamp users, holding all other factors constant. However, while this does tell us that the overall level of music fandom is higher for Bandcamp users, to address generalizability, it is useful to look at the full distributions of the fandom variable for Bandcamp users versus non-Bandcamp users, as shown in Figures 6.1 and 6.2. The distributions reveal that in fact more Bandcamp users are what has been termed "superfans," at the highest level of fandom, representing 34% of the Bandcamp sample versus only 19% of non-Bandcamp users. Furthermore, if we look at those with a fandom score of 20 or higher, 79% of Bandcamp users fall into this category, while only 58% of non-Bandcamp users do so. However, examining at the cut-off point for being a Bandcamp user, a Fandom score of 9, shows that only 2 non-Bandcamp users, or less than 1%, fall into this category.

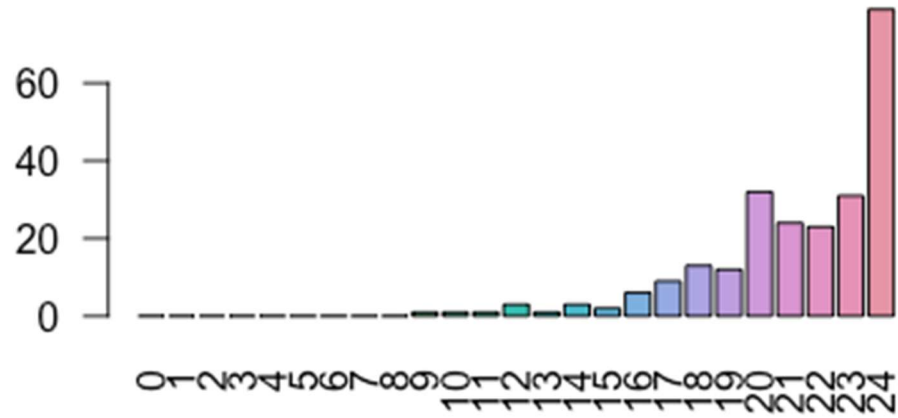


Figure 6.1: Distribution of Fandom Variable for Bandcamp users

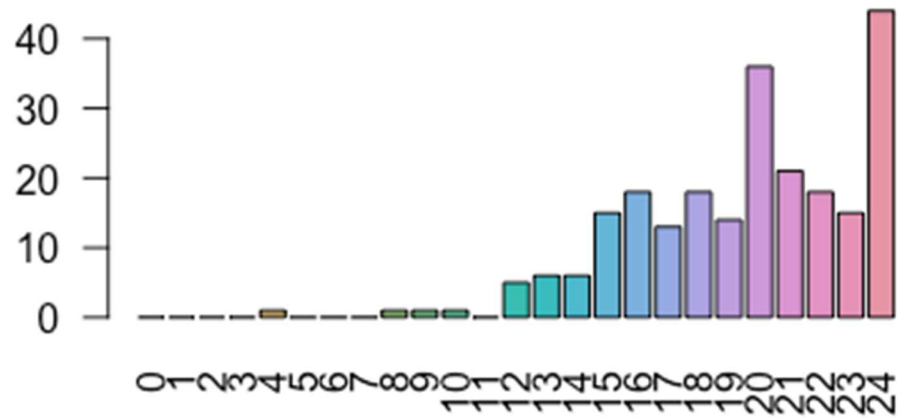


Figure 6.2: Distribution of Fandom Variable for non-Bandcamp users

What do these findings mean for the potential generalizability of Bandcamp and related platforms? They certainly do reveal some limits as the non-Bandcamp user population does indeed have lower levels of fandom. However, they also show that the majority of non-Bandcamp user music fans (even using the conservative cutoff level of 20 for Fandom) could potentially become Bandcamp users, assuming that there is no other variable that would prevent them from doing so. This indicates significant growth potential for Bandcamp and related voluntary payment platforms. Assuming that the incidence rate of Bandcamp use in this study of 8% is representative of the entire music fan population (in fact, it is likely much lower due to the targeting used to recruit participants), this would indicate that Bandcamp could potentially expand to have over seven times more users in the United States alone.¹⁶⁸ If incidence rates overseas are lower (and fandom distributions are similar), the growth potential could be even greater.

Beliefs

Besides music fandom, could there be certain beliefs or attitudes held by Bandcamp users that are not held by other music fans, which would prevent them from joining the platform? As shown in Table 6.10, Bandcamp users in fact do vary at a statistically significant level from non-Bandcamp users on one core belief: how much of the money spent on recorded music is received by the

¹⁶⁸ Assuming that Bandcamp could grow from 8% market penetration to 59%.

artist. The following table shows this disparity, assuming a \$10 sale price for both physical and digital, which is statistically significant with $p < 0.05$:

Table 6.13: Beliefs Regarding Amount Received by Artist

Format	Bandcamp	Non-Bandcamp
CD in store	\$4.59	\$4.10
Digital	\$4.15	\$3.71

Within Bandcamp users, there is also a disparity between how much they believe goes to artists on Bandcamp versus buying in-store or online in general, which is statistically significant with $p < 0.001$:

Table 6.14: Beliefs Regarding Amount Received by Artist on Bandcamp

Format	Bandcamp	Outside Bandcamp
CD	\$5.42	\$4.59
Digital	\$5.81	\$4.15

This reveals that Bandcamp users do have some intuitive sense that the site is more artist-friendly than other platforms for buying music. However, it does not seem to be necessarily informed by the site's own published fee structure, which reveals that Bandcamp actually takes a bigger cut of digital than physical sales.¹⁶⁹ Similarly, the amounts are much lower than what artists often in fact do receive (independent artists would get \$9 for physical, which would

¹⁶⁹ "Pricing," Bandcamp, last accessed December 29, 2019.
<https://bandcamp.com/pricing>

probably be closer to \$7 or \$8 after CD manufacturing costs, and \$8.50 for digital). This indicates that either fans believe there is a label relationship that results in a lower payout or that Bandcamp needs to do a better job informing its users how artist-friendly it really is.

Returning to generalizability, this belief is unlikely to constrain generalizing voluntary payment platforms to more music fans, as it appears to be driven by platform choice instead of the other way around. In other words, Bandcamp users think more of their money goes to the artist because they use Bandcamp rather than using Bandcamp because they think more of their money goes to the artist. Because the non-Bandcamp questions came first in the survey, some Bandcamp users could have been thinking about Bandcamp in those responses as well, mentally calculating some average for all of their music purchases across Bandcamp, online retailers, and record stores. One final interesting facet of these findings is that both Bandcamp and non-Bandcamp users significantly overestimate how much an artist receives in a typical retail situation, as the true amount is usually somewhere between \$0 (since most recordings do not recoup expenses at all) and \$1.

Genre

Turning to the question of genre, do Bandcamp users have different musical preferences than non-Bandcamp users? The only significant finding in this area is that experimental music fans are 4.44 times more likely to be Bandcamp users versus non-Bandcamp users. Within these two populations, 9% of Bandcamp users selected experimental music as one of their top three favorite genres, while less than 2% of non-Bandcamp users did so. This does indicate that experimental music fans are drawn more to Bandcamp than other platforms, and in fact the site does seem to be aware of this, giving prominent features on their home page to experimental musicians, such as Ken Vandermark.¹⁷⁰ However, the converse notion that fans of other non-experimental genres are less likely to be Bandcamp users is not confirmed by the data, which is a reasonable finding given that 91% of Bandcamp users are not fans of experimental music. Finally, the findings regarding experimental music may be driven more by the fact that fans follow the musicians, and the DIY ethos of experimental musicians leads them to prefer sites such as Bandcamp over streaming services such as Pandora and Spotify. If Taylor Swift or Lorde were to release their music through Bandcamp, however, it is perfectly reasonable to assume that their fans would follow them there as well.

¹⁷⁰ "Ken Vandermark's Indefatigable Drive and Avant-Garde Vision," Peter Margasek, *Bandcamp Daily*, Bandcamp, June 5, 2017, last accessed December 29, 2019. <https://daily.bandcamp.com/features/ken-vandermark-feature>

Popularity

To follow up on the preceding point, there is likewise no indication that Bandcamp users prefer music that is any less popular than that listened to by non-Bandcamp users. The fact that more popular artists prefer to use traditional distribution channels says more about their contracts with their label as well as perceptions within the industry than the potential generalizability of voluntary payment models. Platforms such as Bandcamp and Patreon imply a certain amount of risk as well as handing over agency to the consumer and away from the label. Given the recording industry's aversion to giving up control as well as slowness to embrace new models of music distribution, it is no surprise that we do not see more popular artists using these channels. However, that may change if the recording industry sees the potential for revenue growth that these platforms represent.

Demographics

As indicated above, Bandcamp users are not different from non-Bandcamp users in terms of demographic characteristics, except that they are 1.65 times more likely to play a musical instrument. The first part of this finding, that Bandcamp users are identical in terms of factors such as age, education level, and income gives strong support to the notion that Bandcamp and similar platforms could be embraced by much more of the population. The second finding, that Bandcamp users are more likely to play a musical instrument, does suggest some limits to generalizability. In the sample, 55% of

Bandcamp users reported that they play a musical instrument, while only 36% of non-Bandcamp users said so. While these numbers may appear high at first, a 2003 Gallup poll indicated that 37% of Americans age twelve or older currently play a musical instrument, with men and women playing equally, making the results for my sample in line with Gallup's broader findings.¹⁷¹ Regarding the higher number of musicians amongst Bandcamp users, there are two possible explanations for this. First, those who play musical instruments are likely to be bigger fans of music (correlation of 0.22 in my sample), which is also a predictor of being a Bandcamp user. The second possible explanation connects back to the discussion of empathy in my literature review. Those who play a musical instrument could feel a closer connection to performing artists and therefore go through more effort to find a platform for obtaining music that treats artists fairly. In either case, this finding does suggest some limits to generalizability if those who do not play an instrument are less likely to seek out these types of platforms. However, it does not mean that use of voluntary payment platforms cannot generalize to those who do not play a musical instrument, as in fact 45% of Bandcamp users currently do not. It simply means that these platforms are less likely to be adopted by those music fans.

¹⁷¹ "Americans Want Music Students to Play On," Linda Lyons, Gallup, May 20, 2003, last accessed December 29, 2019.
<http://www.gallup.com/poll/8434/americans-want-music-students-play.aspx>

Summary

In summary, these findings show that despite there being some limits to the generalizability of Bandcamp and similar platforms, they can in fact expand beyond their current niche. It is my view that the main impediment to their current growth is not a characteristic of music fans or the platforms, but rather the unwillingness of bigger and more established labels to support them. Fans will likely follow the artist, and if their favorite artists are not on Bandcamp or Patreon, there is little incentive for them to use these platforms. However, if voluntary payment models are embraced by more established acts, that could herald a major change in the population's embrace of them as well.

Generalizability for Musicians

On that note, it is important to consider the question of whether or not these platforms do work equally well for musicians of all genres and levels of popularity. The first important finding to point out is that fans' music preferences with respect to popularity seem to have no bearing whatsoever on becoming a Bandcamp user, how much they spend on recorded music, and how often they pay over the minimum. This gives some support to the view presented above that these platforms could in fact generalize to much more popular artists. Although maybe not in the superstar league, some very established acts, including Thom Yorke, Sufjan Stevens, and De La Soul, have been very successful with crowdfunding, again dispelling the notion that it is only for an indie or DIY audience. Furthermore, there is some reason to believe

that in fact popular artists may do better on these platforms. Why? Because people like to support something that has a chance of succeeding, ensuring that their money will have an impact. Funding a successful artist's Kickstarter campaign for an album means that you are supporting an album more likely to be released than if you are supporting the debut of a DIY musician.

While no differences were revealed with respect to popularity, there were in fact differences in the case of genres. An expected finding was that fans of classical music in the total population spend more on recorded music. This is not surprising given that these fans put a premium on sound quality and are more likely to pay for the CD or high-quality download. However, the finding that Bandcamp users who are fans of rock music spend more was somewhat surprising and has no immediate clear explanation. The findings with regards to prices paid over the minimum are the most intriguing, and lend some insight into the decision making process in the PWYW environment. As mentioned earlier, fans of jazz and experimental music indicated that they paid over the minimum price more often while fans of blues and easy listening paid less often. Interestingly, jazz and blues are often combined by the industry into a single genre, both when selling recorded music and promoting festivals, and it is somewhat surprising that fans of these genres exhibited different behaviors. Likewise, there seems to be little overlap in their audiences, contrary to what the recording industry believes, with only 3 out of 241 respondents being a fan of both jazz and blues, while 10 are fans of only blues and 20 are fans of only jazz. My hypothesis is that jazz and experimental music are different

from the other genres in their perceived level of complexity and demand for attention from the listener. And, if the listener is paying more attention to the music, they are, in theory, deriving more utility from it, making it deserving of a higher payment if we invoke a framework of fairness. A similar explanation that looks at this question from the artist's point of view is that jazz and experimental music may be perceived as demanding a higher level of mastery and training to perform, and therefore the fan is rewarding the musicians more for a higher level of effort on their part. Conversely, blues and easy listening may be perceived as more simple and requiring less attention from the listener, therefore making them less worthy of higher payments. It is important to point out, however, that these perceptions, if they exist, would be on the part of the music fan, and that I am not making a statement as to the objective complexity or effort required for any of these musical forms.

Gender Effects

The final finding that concerns generalizability is the possible gender effect with respect to prices paid over the minimum. As indicated earlier, men reported paying over the minimum price more often than women. One potential explanation for this is that men empathize more with musicians either because more of them are male or because they may be more prone to having a Rock n' Roll fantasy of their own and imagining that they are in their shoes. If it is the case that men empathize more with musicians that are male, while women empathize less with musicians overall, then this would imply that

female musicians may do worse financially on voluntary payment platforms than male musicians. However, these findings could also potentially be caused by differences in how accurately men self-report their generosity compared to women. If this is the case, then these platforms should be equally beneficial for musicians of all genders.

Longevity

The findings of this study also speak to the longevity of voluntary payment platforms. Are they a fad? Do young people use them? Can they change behavior? The variable that is most important to these platforms longevity is age and none of the regression models found it to have any effects. This means that, holding other factors constant, younger fans use Bandcamp at the same rate as older fans, buy as much music, and are equally generous towards musicians. While these findings appear to initially contradict the perception in the industry that older fans are buying more music, they in fact do not. Age alone is correlated with buying more recorded music in the sample, however, when controls are added for factors such as income and education, the age effect disappears. The likely explanation is that older people simply have more money, given that they are further along in their careers or have attained a higher degree, and this disposable income makes it easier to buy more recorded music. However, young people with similar income spend just as much as their older counterparts, there are just less of them, making it appear that there is a pure age effect in recorded music

spending. These findings suggest that as young people age and make more money, their spending habits will resemble those of their older counterparts today. Additionally, they also dispute the notion that those who buy music today only do so because they were socialized into the habit of doing so. Finally, there was no indication from the data that digital natives, who grew up with free music online, behave any differently in their music consumption habits, once controls have been incorporated for factors such as income. All of this speaks positively to the potential longevity of voluntary payment platforms.

Streaming and Voluntary Payments

However, what happens if we no longer need to own music? This is the change taking place as streaming services become more popular and remove the need to actually own a physical or digital copy in order to listen to the music. The common assumption is that streaming and owning music are substitutes, but my data suggests that they may in fact be complements. In the three models presented, having a paid versus free streaming subscription (which would be a better substitute for owning the music due to lack of ads, ability to download, and higher quality) led to a fan being more likely to use Bandcamp, buy more recorded music, and pay above the minimum price more often on the site. This finding is somewhat counterintuitive when considering the typical narrative of streaming representing a superior form of consuming music in which every title is available on demand. However,

streaming in fact should be considered as a different, and not necessarily better form of music consumption. Music technology writer Kyle Bylin lays out a clear argument as to why an on-demand service may in fact be worse than a limited music selection – faced with infinite choice, we derive less utility from the choice that we do make than if we are presented with limited choices.¹⁷² If infinite choice is worse, then streaming may in fact be inferior to owning music, especially as physical media presents a rewarding tactile experience that digital media does not. If streaming is not in fact better, it is likely to rather be a complement, fulfilling needs that a music collection does not. These include the ability to sample music that one is not committed to buying, allowing for the expansion of one's tastes, and to have portability when travelling, working, and commuting. These findings suggest that streaming may in fact not be the threat to artist revenues that many fear, unless artists and labels fail to look at the bigger picture and abandon other channels. Additionally, in order to have longevity, voluntary payment platforms will need to adapt to the predominant patterns of media consumption, and it looks like sites such as Bandcamp and Patreon are doing just that through implementing monthly subscription payments.

¹⁷² Kyle Bylin, *Promised Land*, 2014, 60-63.

Creating a New Culture of Support

Perhaps the most encouraging finding with respect to longevity is that Bandcamp users buy more music, holding all other factors such as fandom constant. This means that use of the platform alone is changing the fans music buying habits. How? There are several mechanisms for this: First, a Bandcamp user is presented with an incredible array of interesting music to buy when accessing the site. This is in stark contrast to logging into most sites and finding the exact same artists that are currently on the top of the charts. Second, fans are able to listen to as much music as they want for free before buying, allowing them to comfortably purchase music they would have never otherwise considered. Third, Bandcamp writes features on artists, genres, and local scenes that make it easier to discover new music and find albums to buy. Finally, and perhaps most importantly, Bandcamp now has a “follow” feature that allows you to see what other fans are buying. This gives you possible suggestions for new music and brings the site to your attention as alerts pop up in your email. Additionally, it adds an element of social pressure as you see how much less you are buying than some truly dedicated music fans, and creates a normative behavior on the site of buying a lot of music (by this I mean several albums a week, as have shown up in my feed!). The implication of all of this is that sites such as Bandcamp do appear to be able to change behavior and create their own culture, which is an encouraging sign for anyone concerned about the future digital music economy.

Summary

All of the findings with respect to longevity support the idea that these platforms will in fact continue to thrive and are likely to grow. The recent boom in arts and media funding on Patreon is further testament to this fact, as fans move away from gatekeeper monetization models to voluntary support platforms. The future largely depends on the steps taken by artists, labels, and the platforms themselves, but none of the data suggests that new technologies, such as streaming, pose an existential threat to these models.

Annual Spending

One of the most revealing and relevant insights from the data in this study is the highly skewed distribution of music spending. The following discussion should be considered in context of the current transition within the music industry away from a purchase model and towards monthly streaming, in which the goal is to have every music fan paying \$9.99 a month for access to their music. Plotting the distribution of music fans' spending reveals that it is very positively skewed, and suggests that decisions based upon median or average spending may be missing the bigger picture. This can be seen in Figures 6.3 and 6.4, in which the mean of each distribution is represented by the red dot. For non-Bandcamp users, yearly spending ranges from zero to

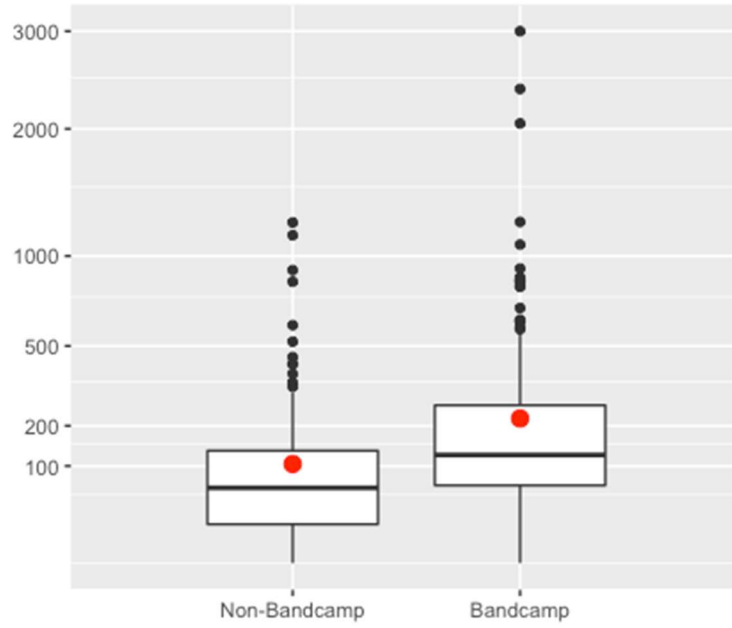


Figure 6.3: Distribution of Music Fans' Spending

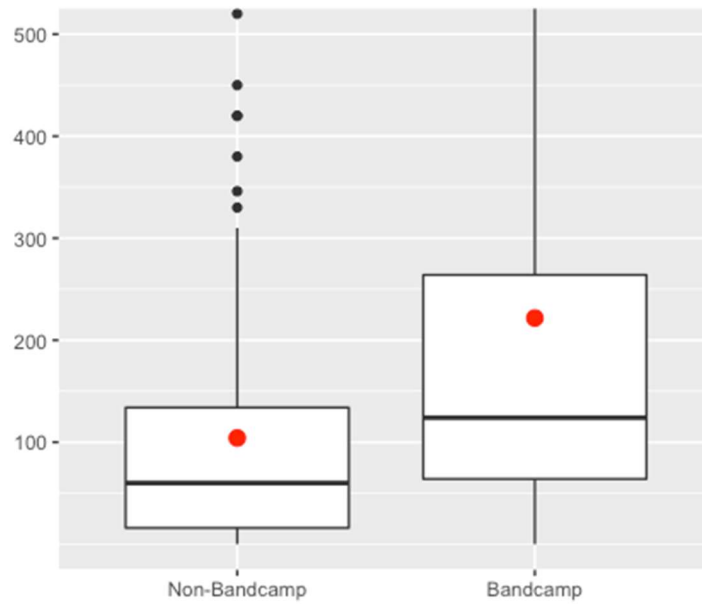


Figure 6.4: Distribution of Music Fans' Spending (Detail)

\$1,230 a year, with a median of \$60 and mean of \$104. For Bandcamp users, the range is zero to \$3,000 a year, with a median of \$124 and mean of \$221. What is evident from these figures is that there is a group of music fans that spend multiple times the average, contributing significantly to recorded music revenue. In fact, if we take the top 11% of spenders in the sample, we see that they are responsible for 50% of the entire amount spent on recorded music.

The danger posed by the recording industry's push into streaming is that if these dedicated fans move away from purchasing music and only pay for a monthly subscription, a lot of revenue could be lost: \$120 a year is a lot less than many of these fans are currently spending. While, as mentioned above, there is no evidence in my data that paying for streaming is currently a substitute for buying music, this does not mean that it may not be so in the future, especially if artists and labels fail to meet fans needs outside of streaming. Of course, the counter-argument to what I am presenting is that if everyone was paying for streaming, the total amount of revenue would grow, because those buying zero or little music now would instead be spending \$120 a year, which would make up for the loss in spending amongst top fans. Ignoring Bandcamp users for the moment, within my sample, this would imply that mean spending would increase from \$104 to \$120 a year, a 15% increase in revenue.

There are two problems with this counterargument. First, it is rather naïve to assume that everyone or even the majority of the population would

transition to a paid streaming subscription. Most users of freemium services are currently at the free tier and attempts to entice them to pay through offering exclusives, higher quality, or eliminating ads are progressing slowly. There are simply people who never will pay \$120 a year for a subscription as long as free options abound (and, returning to Chris Anderson's ideas presented in the introduction about the price of digital goods, competition and falling costs will ensure that free services will always exist). The second problem with the idea of transitioning everyone to paid streaming is that it is a suboptimal solution to the problem of monetizing music in the digital economy. A better solution exists, which is to expand the reach of voluntary payment platforms. To see why this is the case, we can look at the spending distribution for Bandcamp fans, in which average yearly spending is \$221 a year. This is much better than \$120 a year and, if my previous findings regarding generalizability and longevity are correct, expanding the use of these platforms to more music fans should be possible.

Along these lines, one possibility that is yet to be explored is the incorporation of voluntary payments in to the streaming platforms themselves. Such an initiative would have the advantage of connecting with an existing audience on the streaming platforms, who also happen to have payment information already on file, and would be easier than growing a user base for a new voluntary payment platform. Furthermore, listening data could be used to make (hopefully) intelligent recommendations about which artists to support, or to even invoke a framework of fairness in asking fans to support an

artist due to how much they have listened to their music on the platform. Of course, such an initiative is not guaranteed to succeed given the complexities of such an endeavor, but it certainly could be worth trying.

Beliefs and Behavior

Results from this study also shed light on the role that beliefs do or do not play in a music fan's decision to support artists. The regression results reveal that while a high-level belief about the importance of buying music was found to influence non-Bandcamp users' spending on recorded music, specific low-level beliefs about the music industry or musicians themselves had no statistically significant effect on platform choice, annual spending, or the frequency of paying over the minimum price. The only exception to this finding is that a fan's belief about the non-financial impact of a purchase to an artist's career did have an effect at the lowest end of the spending spectrum (first decile). This suggests that a fan's sense of agency may in fact be relevant in determining whether or not they are a music buyer in the first place (versus being a pirate or user of free services), but does not determine their behavior as a music buyer. The implication for the industry of this finding is that the best way to lure fans away from piracy and free platforms may be through voluntary payment platforms that allow them to reassert their agency.

High-level normative beliefs were assessed by asking respondents to indicate their level of agreement or disagreement with the following statement:

It is important to purchase recorded music or pay for a streaming subscription to support musical artists.

Respondents were also offered the chance to explain their answer in the next, open response question. As indicated earlier, a belief in paying for music was (unsurprisingly) predictive of higher spending on recorded music amongst non-Bandcamp users, although the same finding did not hold for Bandcamp users. A possible explanation for this discrepancy is that Bandcamp users are already in the habit of buying their music through legitimate channels, while non-Bandcamp users may show greater variance in platform choice. In other words, a non-Bandcamp user who wants an album may choose to get it through a free channel if they do not believe in the importance of buying music, or through a paid channel if they do, whereas a Bandcamp user may buy the album through Bandcamp either way because they are in the habit of using the site.

To delve deeper, two undergraduates were recruited through the UCSD Rady Behavioral Lab in order to code the open responses. The coding process involved them first establishing and agreeing upon categories between themselves, coding responses independently, and finally reviewing their coding together to exclude responses that did not answer the question. Responses could be assigned to multiple categories if respondents provided multiple justifications. Notably, amongst those who agreed or strongly agreed that buying music is important, the most commonly cited justification was the importance of giving financial support to the artists (61% for coder 1 and 47% for coder 2). However, the notion of financial support seems to have little to

do with how much of the money was actually received by the artist and is in fact a more abstract notion. For example, the following responses acknowledge that the artist does receive little from the sale of recorded music:

Even if it's a small portion that goes to the artist, I feel I'm still supporting them by buying their album (Strongly Agree)

Paying for music is important to me because even if it's a little bit of money the artists need it. They do so much for our enjoyment and they need money. Their job, unless they're huge like Nirvana, it doesn't make a lot of money. (Agree)

artists don't get much money for music they sell as far as i know (though they should), i think it's still important that their music sells because then their record companies will still support them, and it gets them on the radio (Agree)

Even if it's a small amount of money going to the artist, it's still something. Honestly though, I don't know any other way to support artists I love. I can't attend most live shows anymore due to health issues and while I do share the music I love, I don't have too many people with similar tastes around. At least by buying their music, I can say I did something. (Strongly Agree)

Financial support, therefore, may be seen as more of a symbolic action or a self-signaling action, in which the fan is using their money to demonstrate their love for a particular artist. While they appear aware of and frustrated by the realities of the industry, they still want to show financial support to the artist despite how little of their money the artist actually receives. Another set of responses by those citing financial support deals more with notions of fairness:

Artists and everyone that works for them work hard and not paying for music is the equivalent of me working tirelessly and my boss saying hey I love the work you do and I want you to keep on doing it but I'm not gonna pay you anything. Not so cool. (Strongly Agree)

It's part of making a living. I like tacos, other people like tacos but I certainly don't expect a restaurant to give tacos away for free.

There are costs to record music, to hold concerts, etc.. (Strongly Agree)

It's only fair to pay for what someone has worked hard to create. (Agree)

Again, these responses do not bring up how much money exactly is going to the artist, but rather the notion that labor and effort should be compensated. Implicit within both of the above sets of responses is a more abstract understanding of how a market economy functions, with fans believing that if they value something, whether it is the artist or the labor, the best way to show that is by paying for it. This is spelled out explicitly in the following response:

Paying for music shows the artist that / 1. People like what the artist is doing / and / 2. if they are a new artist/indie that, yes, there is someone out there listening, and they liked what they heard enough to pay for it (Strongly Agree)

Moving on, the second most cited justification was non-financial support, in the sense of exposure or promoting an artist's career (23% for coder 1 and 25% for coder 2). Here we see that fans do have a fairly sophisticated understanding of the industry, acknowledging that even if the artists receive little from the sale directly, they can still benefit in other ways:

Even if the artist themselves don't make the most money off of sales on their songs, the purchase is showing the record labels and streaming services that artists/bands like those are listened to. It may help other up and coming artists in a genre get a chance if a company knows there is an audience for that kind of music. (Agree)

Buying an artist's music is the responsibility of their fans! In whatever form you purchase it, doing so sends a message to the record companies that you value the artist, so the company endorses and promotes them more. Most importantly, it supports the artist financially, and it lets the artist know that their work is loved and appreciated. (Strongly Agree)

Anything to show that their music is in demand. If sales are up then the record company and distributor will be more likely to invest more in the band and promote the band more, which will give them more exposure and more revenue. (Agree)

Finally, the third most cited justification invoked notions that getting music for free is equivalent to stealing and is either unfair to the artist or violates the respondent's moral code (19% for coder 1 and 14% for coder 2), as shown in the following examples:

by paying for the streaming subscription you are supporting the artist. Not paying for it would be stealing and that is against my personal belief. (Agree)

It's very important because it's how artists make a living. Pirating music is wrong because you are stealing from the artists and people who worked countless hours on a song/album. Buying it and supporting the artist helps them and keeps their career balanced. (Strongly Agree)

Even though the artist has plenty of money, downloading illegally is still stealing (Strongly Agree)

As pointed out in the last response, these notions of morality have little to do with who receives the money, how much they receive, and their financial status. To take something without paying for it is stealing, according to these fans, and violates their moral code even if the victim is a rich musician or a powerful corporation. These answers speak to a deeper question about the role of morality within markets, as invoked by economist Samuel Bowles, who argues that incentives alone cannot create a properly functioning market economy.¹⁷³ As internet actors are difficult to police, the functioning of internet

¹⁷³ Samuel Bowles, *The Moral Economy*, (New Haven: Yale University Press 2016).

economies, especially those dependent on voluntary payments, is largely dependent on individuals choosing to do the right thing independently. Game theory would predict that everyone would choose to free-ride in these systems, leading voluntary payment platforms to collapse, and yet, they are proving surprisingly robust due to fans' normative beliefs.

Music Industry Beliefs

While high-level normative beliefs do affect music fans' behavior, low-level beliefs about the specifics of the music industry actually have no effect on behavior, except in one special case that I will discuss later. As shown in the earlier regression results in Table 6.11, the four factors that represent beliefs about musicians and the music industry (*Rich_Musicians*, *Money_from_Recordings*, *Impact_to_Artist*, and *Money_to_Artist*) did not have a statistically significant effect on how much recorded music a fan purchases annually. Similarly, no statistically significant effect was found on the frequency of paying over the minimum price on Bandcamp, as shown in Table 6.12 (with the variable *Bandcamp_Money_to_Artist* being used instead of *Money_to_Artist*). Finally, although some difference was observed in beliefs between Bandcamp users and non-Bandcamp users, these differences were likely caused by the choice of platform, rather than the other way around, and do not appear to be causal factors in platform choice.

This may be surprising given that justifications for piracy typically revolve around the notion that musicians are rich anyway or that musicians do not

make their income from recordings. As noted by Steven Caldwell Brown in his 2016 ethnography investigating the spread of beliefs about piracy,¹⁷⁴ these industry-specific beliefs are in fact important, but only as ex-post-facto justifications of piracy, and not as actual drivers of fans' behavior. In other words, following Sykes and Matza's neutralization theory,¹⁷⁵ specific beliefs about the music industry allow fans to maintain a positive self-image as moral actors despite the fact that they have obtained the music for free. For example, a fan that has downloaded Kanye West's *The Life of Pablo*¹⁷⁶ from Pirate Bay may tell himself that Kanye is rich and does not need the money anyway. Therefore, the fan does not perceive himself as immoral and does not incur the negative costs to his self-image that would arise from stealing in another scenario, such as taking money from someone who is poor. Again, his decision to pirate the album is not being driven by his beliefs about Kanye, and is only being justified by them after the fact.

It is important to point out that those who purchase more music actually hold the same set of specific beliefs about the music industry as those who purchase less, as illustrated in the regression results. This is further demonstrated by examining responses from the open response question about the importance of buying music. For example, the belief that little money is received by the artist is used by fans to justify either position:

¹⁷⁴ "Where do beliefs about Music Piracy come from and how are they shared? An Ethnographic Study," Steven Caldwell Brown, *International Journal of Cyber Criminology* 10, no. 1 (2016): 21.

¹⁷⁵ "Techniques of neutralization: A theory of delinquency," Gresham M. Sykes and David Matza, *American sociological review* 22, no. 6 (1957): 664-670.

¹⁷⁶ "Life of Pablo," Kanye West, GOOD Music, 2016.

The artist only get a small amount of money as it is, so when people dont pay for music they get even a smaller percent of that money (Strongly Agree)

I feel the the artists don't make enough money, everyone wants to dip into the money, it is the reason they do it, to rip off the people with the true talent, while they make most of the money and give them a drop of it. Sure they may have a ton of money, but look at how much the others make in comparison. (Somewhat Disagree)

The same applies to the belief that artists are wealthy or make a lot of money:

Most artists I listen to have plenty of money. Being far from the "1%" myself I don't care if their bank accounts grow. Since I normally don't know if any purchases will help I don't care. Unless it is a street performer I like than I hope people buy and not just record them on their phones (Neither Agree nor Disagree)

All the other components of recording a record is all because of the artist. They deserve to get paid a lot for that. (Strongly Agree)

Without support then mists artists music would not be heard. It is true that some arist do their job for the love of music. However, once an artist makes it, they give up their privacy and their time. They become employees to the record labels and to the public.
If money can't offer the finer things in life, then why bother?
(Emphasis mine) (Agree)

Here we see the same specific belief (that artists are wealthy/make a lot of money) being used to justify two different views towards buying music. While one respondent sees wealthy musicians as being underserving of more money, others see artists' wealth as a fair reward for all of their hard work.

These findings speak to a deeper issue, which is that explanations of music consumer behavior relating to piracy and free music have fallen victim to what Nassim Nicholas Taleb calls the Narrative Fallacy.¹⁷⁷ Broadly speaking,

¹⁷⁷ Nassim Nicholas Taleb, *The Black Swan*, (Random House 2013), 62-84.

this is our tendency to make sense of the world by telling a simple story that appears to explain a certain behavior or outcome, when the real causes are in fact hidden. In this case, because we see those obtaining free music using a certain set of beliefs about rich musicians or the excesses of the industry to justify their behavior, we may assume (as I in fact did prior to launching this study!) that music fans do not buy music because they hold those beliefs. However, the findings have shown that in fact this is not the case, and that these beliefs are held equally by those at different levels in the spending spectrum. Additionally, it is important to note that music fans themselves may not be aware of why they make the choices they do. The real drivers of behavior can in fact be subconscious, while the narratives the fans provide are simply stories that they themselves use to make sense of their actions and align their behavior in the world with their self-image.

Agency

However, as mentioned earlier, there is however one specific belief that does influence non-Bandcamp users' spending behavior, which is the perceived impact of a purchase to the artist, but only under a certain condition. As shown previously, the `Impact_to_Artist` variable did not have a statistically significant effect in the spending model in Table 6.11. However, performing quantile regressions, as developed by Roger Koenker,¹⁷⁸ using the

¹⁷⁸ "Quantile regression," Roger Koenker and Kevin F. Hallock, *Journal of economic perspectives* 15, no. 4 (2001): 143-156.

same model revealed a different outcome. To briefly summarize the advantages of quantile regression, it allows for the effect of an independent variable to be examined at different levels of the dependent variable. Thus, we can see if a variable has an effect at a low, high, or intermediate level of recorded music spending. Intuitively, this makes sense as high spenders may behave entirely differently and be affected by different factors than those who buy little recorded music. Performing quantile regressions using the `quantreg`¹⁷⁹ package in R revealed a statistically significant (Coefficient of 0.78, $p < 0.05$) effect for the `Impact_to_Artist` variable at $\tau = 0.1$, representing the very lowest level of recorded music spending (the other variables representing industry-specific beliefs had no statistically significant effect in the quantile regressions). The coefficient for `Impact_to_Artist` declines as τ increases, as shown in Figure 6.5, becoming negative at $\tau = 0.4$, although the results are not statistically significant at values other than $\tau = 0.1$.

¹⁷⁹ "quantreg: Quantile Regression," Roger Koenker et al. <https://cran.r-project.org/web/packages/quantreg/index.html>.

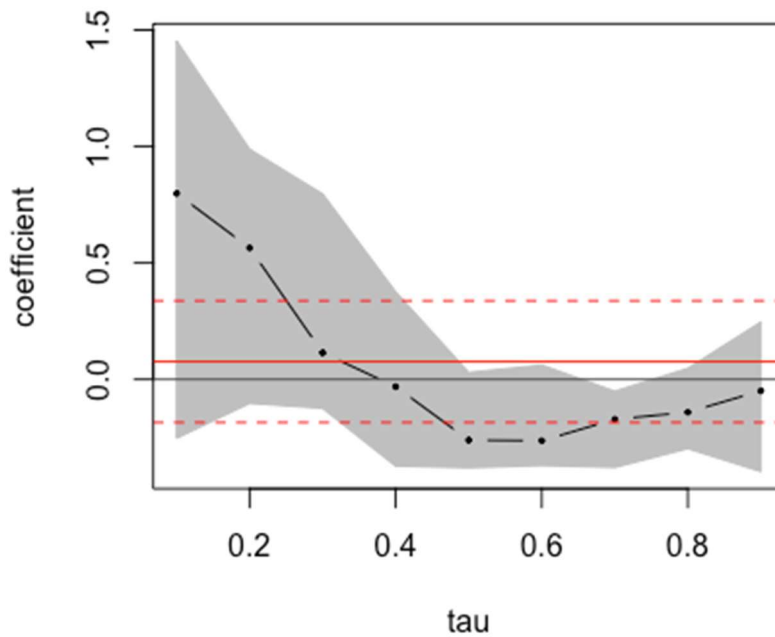


Figure 6.5: Coefficient for Impact_to_Artist Variable by Decile

This finding suggests that a sense of agency may be relevant to making the choice to be a music buyer in the first place, but does not affect spending once a fan does make the decision to obtain music through paid channels. In other words, those who have a low sense of agency with respect to their actions as a music buyer may choose to stay out of the paid music ecosystem entirely. This belief does have a more personal dimension than the others, as it is not so much about the structure of the industry or artists' financial condition, but rather an individual sense of how much difference the fan is making. As a reminder, this variable was constructed mostly based upon agreement or disagreement with the following statements:

My purchase of a CD or digital download helps the artist financially.

My purchase of a CD or digital download helps the artist in their career prospects.

Notably, this variable also has very low or zero correlation with beliefs about how much the artist actually receives, as indicated in the factor loadings in Table 6.8. The personal phrasing of the question and the lack of correlation with the realities of the industry indicates that this belief is likely constructed in an affective rather than rational sense: how much impact the consumer *feels* that they have versus how much they can logically calculate that they have.

If a sense of agency is important to bringing the consumer into the paid music ecosystem, then voluntary payment platforms may have a role to play in this. While voluntary payment platforms are objectively better in terms of how much money the artist receives, more importantly, they give the fans a sense that their actions are making a difference. This is especially true in the case of sites such as Patreon, on which the creators do connect with fans and thank them for their support, indicating how important they are to the work that the artist is doing. Even if the fan's \$10 is really just a drop in the bucket, they are made to *feel* important and *feel* that they are making a difference. In contrast, sending \$10 a month to Spotify or buying a CD for \$15 on Amazon

feels very impersonal and transactional, and leaves the fan with little sense of agency.

Bandcamp Users' Motivations

Two additional open response questions in the study were aimed only at Bandcamp users, and revealed their motivations for using the site as well as making decisions on what price to pay for albums. As with the other open response question, coding was assigned to two undergraduates at the UCSD Rady Behavioral Lab. The procedure for these questions was similar, with the coders first independently creating categories and then coming to an agreement between themselves. Coding was again performed independently over the course of a week, and upon completion the two coders met to resolve any discrepancies, with me as a moderator.

The first of these questions simply asked, "why do you buy music on Bandcamp?" The intention was to discover what factors are relevant to music fans when considering platform choice. The coding of open responses revealed the following primary motivations (one response could be coded to multiple categories):

Table 6.15: Bandcamp Users' Motivations

Motivation	Percent of Users Citing Motivation
Support for musical artists / Artist-friendly nature of the site	40%
Music Variety / Quality	30%
Convenience	24%
Affordability	10%
Other	21%

Predictably, the most commonly cited reason for buying music on Bandcamp was to support musical artists. In many cases, the fans do appear to be aware that Bandcamp is in reality more artist-friendly than other channels (as was also shown in the quantitative analysis) for obtaining music and cite this specifically:

From what I understand, it benefits artists more than purchases made through other avenues.

Because it supports artists who need exposure, and it pays their artists a fair percentage.

I feel based on what I've researched, that more of the money goes to the artists themselves instead of all the middle men

Others are more vague and mention a more general feeling that they are supporting the artists by using Bandcamp:

Because it makes me feel good supporting artists.

Because I love to explore new ways to find and enjoy music. Bandcamp happens to be a wonderful way of supporting artists.

I feel like it is a positive way to support upcoming artists.

The second most-cited reason for using the site is the music variety and or quality, with some fans noting that it is the only way to get their favorite artists' music:

Because there are something that can only be found on bandcamp

music from my favorite artist is only available on bandcamp

I always thought more money goes toward the band if it's bought on Bandcamp. Plus a lot of bands I listen to are only available on Bandcamp.

Others are drawn more by the prospect of discovering new music that they would not find through other channels:

I like finding new and interesting artists, and prefer to support artists as much as possible

Because there are local artist on there who are just starting off, it's a nice way to find new and unique artists

I look for the hard to find songs that the radio rarely plays

In the case of one respondent, the music they found on Bandcamp intersected with a personal tragedy:

There was an artist on there that came out with a very special song right around the time my son died. Had I never seen an ad on Facebook for Bandcamp and became curious about it, I would have never found this song. And in turn found this girl with the most beautiful voice ever!

I found this comment, and the fact that the respondent would share something so personal in an online survey, very moving. In looking at the subject of the online music economy, it is easy to become detached from the music itself and the important role it plays in people's lives. This was an important reminder

to me that these questions are important, not only in the sense of broadening our knowledge about the world and people's motivations, but also because they touch something that is deeply connected to our personal and emotional lives.

I was somewhat surprised by the number of Bandcamp users mentioning convenience as a reason to use the site. Bandcamp has never struck me personally as being very convenient when compared to either streaming services that allow access to music on-demand or Amazon's very quick checkout and shipping. However, Bandcamp users had a different point of view, as evidenced in these responses:

It's an easy way to access music. Quick downloading speeds, and a great selection.

It's easy to navigate, hip and fresh and had good value.

I like the ease of purchase

It's easier than other sites and a lot of brick and mortar stores do not exist anymore. Plus a lot of up and coming artists host their music directly on the site without the use of a label or manager.

Good selection. Easy layout and interface.

Affordability was the least often cited motivation by users of the site. In

some cases, this translated to a perception of fairness in the pricing:

The prices are fair and the quilt of music is very good compared to other websites.

Many of the artists I support put their albums up for purchase (sometimes at a cost of zero, others at a regular reasonable price) on bandcamp. Also, they will give a physical tape or clothing item, as well.

Other users simply were motivated by the fact that the prices are low:

It is cheap

Because it's cheap

Has lots of variety and very cheap

Finally, many responses fell into an "Other" category. Some of these cited other reasons, such as PWYW, while others simply did not offer any specifics:

I like the way it is set up. I like that they do pay what you can and I like that it gives the artist the most amount of money.

It's a great platform to buy music

I like it better than buying from other places or apps.

The above analysis of open responses reveals that while many Bandcamp users are motivated by their desire to help the artists on the site, there are a number of other reasons for fans to use the platform. This suggests that the site and others like it may generalize better than expected, as they can appeal to a wider variety of fans, some of whom may not care that much about supporting the artists. Its recent initiatives to spotlight interesting music, feature artist interviews, and host a podcast have shown that it is aware of this and is committed to reaching fans who are not only looking to support artists but are also looking for a good service. Also notable is that these initiatives serve as important differentiating factors for Bandcamp, protecting it against encroachments into the music space by giants such as Amazon and Google.

Prices Paid

Bandcamp users were also asked about their pricing decisions, with the question, “how do you decide how much to pay for music on Bandcamp?” This question was a follow-up to one about how often they pay over the minimum price. However, some respondents interpreted this as asking about how much music they buy and not what price they choose to pay and were excluded from the following analysis of open responses. Coding of the open reveals the following motivations behind choosing a price on the platform:

Table 6.16: Bandcamp Users' Price Decisions

Motivation	Percent of Users Citing Motivation
Music preference (How much they like the music)	37%
Affordability / Budget	22%
Comparison with other outlets	15%
Music quality / Effort by artist	12%
Minimum price	8%
Flat price	7%
Other	15%

The most commonly cited motivation for paying a particular price was that it was determined by how much a respondent likes the music. To connect back to the theoretical discussion in the literature review, this indicates that a notion of reciprocity is a play in these decisions. The amount of utility a fan will derive from an album is linked to how much they like the music, and therefore are paying more for albums from which they will derive a higher benefit.

Notably, the coders did distinguish between respondents citing music preference and those who spoke about the quality or value of the music. In the following case, the respondent mentions both:

i decide how much to pay for music based on whether I like the artist and if the music is worth buying. I don't like to spend too much money on something if I know I don't like it.

Others spoke about value only and connected this to the quality of the music or the effort on the artist's part:

Effort on the artists part. Was there time put into production? How close to perfect? Does it show? Ears will never lie to you.

I paid what I thought was a fair price for the amount of work that went into the music. I also based it off of what I had paid for CDs in the past.

In the above cases, the fan is not compensating the artist for the utility they will derive from the music, but rather for the effort that the artists have put into it. This is not reciprocity, as the fan is not receiving the effort per se, but is more of a notion of fairness in which effort and hard work should be compensated.

Not surprisingly, the second most commonly cited motivation dealt with issues of household budget and affordability. While fans may want to give artists as much as possible, spending decisions are obviously constrained by their incomes and other financial needs. In many cases, this trade-off was explicitly acknowledged by the respondent:

It depends on what I'm getting. I usually try to do as much as I can afford. The maximum amount, because I know that they need it.

It depends on how much I like a certain artist or song as well as how much disposable income I have at the time.

I mostly on a budget so I spend what I can however I do find it a great work to spend the money I do spend on band camp.

Three of the categories pertain to the specific mechanism of setting a price, which are comparison, flat price, and minimum price. Comparison with other outlets was the most common of these three and speaks to the power of price anchoring. It is unlikely that Bandcamp users are actually looking the album up on other sites (although a few claimed to), but rather they do have a mental sense of how much they have paid for albums in the past and use this as a guidepost. Again referring back to the theoretical underpinnings of these actions, the fan is displaying normative behavior, doing both what is expected (based on prices they have encountered before) and what is easiest (there is no need to calculate a fair price). The flat price category is similar, but implies less variability. A fan sets a certain amount and always sticks to it. However, it differs from comparison in that these amounts may be higher (some respondents giving \$20 each time) or lower than a typical album price. Finally, there is the group of fans that displays the behavior we would expect from *homo economicus*, and always pays the lower price possible. However, it is notable that this response was the least common amongst the respondents.

The "Other" category contained a myriad of other motivations and mental heuristics, including combinations of the above in which fans would compare prices but always pay a flat price "bonus" to the artist. Perhaps the most honest responses of all, however, were those that did not try to weave a narrative as to their decision-making and said simply that they "just feel it out" or that it depends on "how [they] feel that day." In looking at all of these

responses, it is remarkable to note how well the theory from Chapter 2 does translate into fans' explanations of their behavior. Normative behavior, fairness, and reciprocity are all mentioned by respondents, and while these do not always override self-interest, the fans do appear to be aware that their own self-interest needs to be balanced with the interests of the artist.

Conclusion

The findings in this study support the idea that Bandcamp and other voluntary payment platforms can generalize both to the majority of music fans and artists. Furthermore, the longevity of these platforms is supported by the fact that age (controlling for income and education) does not appear to be a driver of spending or platform choice. Additionally, while streaming does appear to pose a threat to these models, the findings show that it may in fact be a compliment to them. Beyond the fact that these platforms can be scaled, the analysis of recorded music spending reveals that this would be a good idea. Bandcamp users spend more than other music fans (holding other factors constant) and expanding the reach of voluntary payment platforms could bring much needed revenue to the music industry. Finally, analyzing open responses reveals more about music fans' motivations and views regarding the value of music, a topic that will be investigated in greater detail in the following chapter.

Chapter 7

The Value of Artists and Music

The analysis of open responses in the previous chapter revealed that the most important factor for fans choosing how much to pay over the minimum was their music preference (with 37% of fans citing this motivation), which was seen as distinct from music quality (cited by 12% of fans). While the topic of music preference as well as perception of music quality is extremely broad, understanding how Bandcamp users define these elements can help shed light on which artists may or may not be supported through voluntary payments and was the focus of this study. In order to dive deeper into these questions, a subset of respondents from the original study was given a follow-up open response questionnaire through the Qualtrics platform, which was then analyzed quantitatively and qualitatively. Analysis of the open responses reveals some limits to scaling voluntary payments based upon artist values/behavior, with fans indicating they will not support artists with whose values they are not aligned, but does not indicate limits based upon musical characteristics.

Participants

Participants were recruited directly from respondents to the survey presented in Chapter 6 who indicated that they had used Bandcamp in the past. They were selected by first filtering out any respondents that had written

gibberish or non-sensical answers in the previous survey's open response questions. Then, sampling was prioritized as follows:

- Tier 1: Respondents who indicated that their payment is motivated by some attribute of the music or artists (98)
- Tier 2: Remaining respondents who passed the above filter (143)

In the final data set, the composition of respondents was 31 from Tier 1 and the remaining 19 from Tier 2, for a total of 50 participants. The motivation behind the above tiering was that these open responses were intended to dive deeper into how fans' perceptions of the music and artist drive their payments on the platform, which would be most relevant for fans who indicated these as motivations in the first place (those in Tier 1). Including the Tier 2 participants was done only after no more responses were being received from Tier 1 and was necessary to hit the budget minimum for Qualtrics. In the quantitative analysis that follows, results will be shown for both tiers as well as the combined participant pool.

Questionnaire

The questionnaire given to participants consisted of 9 open response questions given to participants. The only instruction provided was the following:

Please answer the following questions with as much detail as possible. Your input is greatly appreciated!

The first four questions concerned attributes of the music or the artist that would lead them to pay either more or less for the music:

When buying music, what elements of the music would lead you to pay a higher price for the album or song?

Are there any attributes of the artist (independent of the music) that would lead you to pay more?

Are there any attributes of the music that would lead you to pay less?

Are there any attributes of the artist (independent of the music) that would lead you to pay less?

The next three questions aimed to understand what fans look for in a piece of music and how they assign value to music:

What do you look for in a piece of music?

Do you believe that some music is better than others? If so, what makes another piece of music better than another?

Do you believe that some music takes more effort to create than others? Why or why not?

The two final questions aimed to understand any other motivations regarding the price that fans paid on Bandcamp as well as other considerations regarding the platform:

What was your most recent purchase on Bandcamp? Did you pay over the minimum price? Why or why not? How do you feel about what you paid?

Is there anything you would like to add about how you buy music on Bandcamp that I did not ask about?

Method

While the initial aim of this study was to perform a purely qualitative analysis of fans' views on the value of music and artists, the responses were somewhat shorter than expected and clustered around several topics. As a result, I decided to again deploy a hybrid quantitative/qualitative approach, similar to that in Chapter 6, in which open responses were coded and also analyzed in-depth individually. Due to redundancy in responses, the following questions were selected for coding:

Are there any attributes of the artist (independent of the music) that would lead you to pay more?

Are there any attributes of the artist (independent of the music) that would lead you to pay less?

What do you look for in a piece of music?

Coding of responses was performed by two undergraduate research assistants at the Rady School of Management, through the assistance of the Rady Behavioral Lab. The following method was used to code the open responses:

- Coders created categories for the responses, which they performed independently.
- Coders aligned on their categories during an in-person session that I moderated.
- Coders assigned responses to each of the categories, with some responses belonging to more than one.
- Coders aligned on the assignment of responses during a subsequent in-person session that I moderated.

Finally, responses in which the participant did not answer the question were excluded for the analysis.

Fan Motivations for Higher and Lower Payments

Coding of the open responses reveals three main motivating factors for paying either more or less for music on Bandcamp: the artist's values, their musical ability, and the genre of the music. The percentage of respondents mentioning each of these factors is outlined in Tables 7.1 and 7.2. Interestingly, values were more often cited as a reason to pay less, whereas musical ability and genre were more often cited as reasons to pay more. Finally, there is a large discrepancy between responses from the Tier 1 and Tier 2 groups, which will be explored further below.

The artist's values were cited as a factor for paying more by 23% of Tier 1 respondents and 63% of Tier 2 respondents, and as a factor for paying less by 28% of Tier 1 respondents and 65% of Tier 2 respondents. Values are a broad category and examining the text of the responses reveals a wide range of considerations, including charity work, support for social causes, political affiliation, and personal behavior. Some of the justifications given for paying more, which fall into this category, are as follows:

Table 7.1: Motivations for Paying More

Motivation	Tier 1	Tier 2	Total
Values	23%	63%	38%
Nothing ¹⁸⁰	23%	13%	19%
Genre	19%	13%	17%
Musical Ability	19%	0%	12%
Popularity/Notoriety	12%	0%	7%
Appearance	8%	0%	5%
Independent Artist	4%	13%	7%
Personal Impact	4%	0%	2%
Other	15%	15%	15%

Table 7.2: Motivations for Paying Less

Motivation	Tier 1	Tier 2	Total
Nothing	40%	18%	31%
Values/Behavior	28%	65%	43%
Musical Ability	12%	6%	10%
Genre	8%	0%	5%
Popularity/Notoriety	4%	12%	7%
Appearance	4%	0%	2%
Fiscal Responsibility	4%	0%	2%
Other	8%	0%	4%

¹⁸⁰ A meaningful share of respondents indicated that nothing would lead them to pay more or less for the music. The higher percentage indicating that nothing would lead them to pay less indicates that these fans would probably not buy at all if their criteria was not met.

Charity endeavors would make me consider spending more on something. For example if I know the artist is donating a specific portion of the proceeds from their music I would be willing to pay more. (Tier 1)

Yes. If they are supporting the same causes and political issues that I support. (Tier 1)

If they donate some of their proceeds to animal charities. (Tier 1)

If I thought they had good values/moral, yes I'd be more willing to give more money to support a good person. I refuse to buy music if it's a disgusting song or the artist is disrespectful to any degree. (Tier 1)

If they were anti-trump and were active politically I dig that (Tier 2)

I would pay more if the artist supported causes that I supported, or if the artist's passion and political and social viewpoints aligned with my own. (Tier 2)

Contributes money from each sale to a charity. Fights against Trump. (Tier 2)

Style, their willingness to donate to those in need, general attitude (Tier 2)

Motivations for paying less were very similar, with an added emphasis on personal behavior:

If I don't agree with things the artist says or does, I will not give them my support or money. I do respect all artists for doing something they love and providing something that certain people like, even if I do not, but that being said, if I don't like the vibe I get from the artist of their music, I will pay less, or nothing at all. (Tier 1)

The same as I stated above and also if the artist was someone who lives in a way that really offends me or my sense what is morally right I wouldn't pay for or listen to their music. (Tier 1)

If they are in support of the Democratic Party and democrat politicians. (Tier 1)

If he was a bad person, did something I did not agree with or their music is very easily accessible. (Tier 1)

If the artist is badly behaved or the spout off political views (Tier 2)

Unsavory life choices (domestic violence, things like that) (Tier 2)

I would pay less for a certain artist's music if the artist is a horrible human being outside of recording songs. (Tier 2)

I would pay less if the artist didn't believe or stand for the things I believed in, such as if they were bigoted. (Tier 2)

If he/she is a scumbag. (Tier 2)

If the artist isn't compassionate (Tier 2)

These responses do indicate limits to receiving voluntary payments for artists whose views and actions may not be aligned with their fanbase as well as artists who receive negative publicity for their behavior. These motivations would likely impact artists who are more popular to a much greater extent than those who are not, as more is known about their lives, values, and politics. Additionally, it is revealing that some fans will continue to listen to the artist's music if they are not aligned with their values/behavior, but that they will simply pay less or refuse to pay for it at all, indicating that some fans do separate the music from the person who is creating it.

What are we to make of fact that many more Tier 2 respondents indicated values as a motivating factor than those in Tier 1? Because Tier 2 respondents are those that did not indicate they pay more due to the artist or the music, the difference between these groups may be caused by Tier 2 respondents answering a hypothetical versus those in Tier 1 recalling

motivations for actually paying more or less in the past. If this is the case, it could be that the Tier 1 group is understating the importance of values because they may not have been aware of the values/behavior of artists they supported on Bandcamp due to those artists' lack of fame. However, if they were supporting more famous artists whose values/behavior were known, their motivations may have been different and values may have become more important in their support decision.

Musical Characteristics

Asking Bandcamp users what they look for in a piece of music reveals more about how they assign value to a piece of music. As shown in Table 7.3, the two most common factors cited by participants were the emotional impact of the music and the meaning behind the music. While there is some overlap between these two factors (lyrics can convey both meaning and emotional content), respondents separated the two factors to a degree that led both coders to split these into two separate factors. Had these factors been grouped together, the overall percentage of respondents citing emotional impact and meaning would be 59% (55% in Tier 1 and 65% in Tier 2).

Table 7.3: Musical Characteristics Cited by Bandcamp Users

Characteristic	Tier 1	Tier 2	Total
Emotional Impact	41%	10%	29%
Meaning	34%	65%	47%
Genre	24%	20%	22%
Quality	24%	15%	20%
Beat/Rhythm/Tempo	21%	40%	29%
Situational	17%	10%	14%
Melody	14%	15%	14%
Catchy	14%	15%	14%
Vocal ¹⁸¹	10%	5%	8%
Other	8%	0%	4%

How do Bandcamp fans conceptualize the emotional impact of a piece of music? An analysis of the responses reveals some looking for a transfer of emotion from the music to themselves:

something that will touch my heart emotionally. (Tier 1)

Something that I can feel, that relaxes me or pumps me up. (Tier 1)

Quality and that it makes me feel happy. (Tier 1)

In other cases, the respondents are looking for music that reinforces their current emotional state, which overlaps with the situational factor:

It depends on different situations. I guess mostly what I look for is something that reflects my feelings. Or offers a way of expression that maybe I wouldn't say explicitly. (Tier 1)

¹⁸¹ Independent of lyrical content

It depends upon the moment. Generally I stick with similar artist and genres. But at some moments I am feeling more angry and thus I would be looking for something full of angst. Sometimes I just want to sing along and I look for something with a good melody. Sometimes I am driving with my daughter and I am more likely to look for something more child friendly. (Tier 1)

These two conceptualizations of emotional impact are not mutually exclusive and some respondents are looking for both, as shown below:

Depends on my mood, but generally I enjoy imaginative and thought-provoking lyrics, music that isn't redundant and something that lifts me up. (Tier 1)

In the example above, we also see the mention of the meaning behind the music, with this particular fan looking for "imaginative and thought-provoking lyrics." Many other responses that fall into the meaning category also mention the lyrical content of the music:

The music to have that special something that grabs me or words with meaning to me or emotionally effects me (Tier 1)

A nice melody, a good beat with a great hook. I like the lyrics to say something to me personally wether it's deep and meaningful or fun and silly. (Tier 1)

I look for a good rhythm, a good melody, and lyrics that really resonate with me. (Tier 2)

Melody, beat, original lyrics with a story behind it and something I can relate to. (Tier 2)

Some, however, do not call out the lyrics explicitly, although one can assume that in most cases the specific meaning they are referring to would be conveyed through the lyrical content:

I look at if it relates to my life or a situation I'm in. (Tier 1)

I look for feel good music that has meaning. I want to feel like I have learned something from the artist. (Tier 2)

In a piece of music, I look for songs that have real depth and meaning, as compared to a dance club remix song that only has a catchy melody. (Tier 2)

In all of the above responses, we should note that the meaning to which respondents are referring appears to be extra-musical in the sense that it cannot be understood from the music alone. Rather, it has to connect to some life story or situation with which the listener can relate. Emotional impact, on the other hand, is not mentioned as being conveyed through the lyrics and does appear to be generated by the musical content itself for these fans. In the one response that does mention emotion being conveyed through the voice, we see the respondent maintaining this distinction, with the lyrics separated from the emotion of the delivery:

Good, meaningful lyrics, strong musical composition, and emotions being felt through the singer's voice. (Tier 1)

How does this emphasis on emotional impact and meaning affect the potential of these platforms to scale to more artists? Emotional impact does not appear to be a limiting factor as all genres of music are capable of conveying emotion, irrespective of the presence of vocals or lyrics. The preference for meaning is more limiting as it would appear to favor genres and artists that have lyrics that are clearly understandable and relatable. However, it is possible for instrumental musicians to reference extra-musical meaning as well through the use of titles, liner notes, and art work, so this may not be as much of a constraining factor as it would initially seem.

Turning to the other factors mentioned, we also see little that would indicate a lack of potential to scale. If anything, some of the factors, such as the melody, the rhythm, and the song being catchy would be more limiting for experimental music forms, which do not rely on these elements, but not so much for scaling voluntary payments to other, more popular styles and artists. Overall, the open responses from Bandcamp users do not indicate anything unusual or esoteric in the way in which they assign value to a piece of music. On the contrary, they reveal that Bandcamp users are looking for musical characteristics that apply to many forms of music, and especially those that are currently popular.

Implications

The analysis above of Bandcamp users' responses reveals some limits to scaling voluntary payments to artists whose values and/or behavior may alienate fans, but does not reveal limits to scaling based upon the characteristics of the music itself. The implication for the music industry is that artists that have cultivated a positive image may in fact do very well using voluntary payments to capture the consumer surplus that is currently left behind by fixed-price models. In fact, in the final section of the survey, which asked respondents if they had anything else to add, one fan's response spoke to this directly:

Wish more "mainstream" artists would come over. They might be surprised at the \$. I'm sure if Beyoncé released a single @ Bandcamp, she would make a million! Because we would know

the \$ going to HER...THE TALENT...not the middlemen. And that she does a lot of good and helps others with her \$. (Tier 2)

However, for those without such a great public image, or worse, significant negative publicity, the fear of relying on the fans to pay voluntarily may be justified, as indicated by the responses on why fans would pay less, and they may in fact be better off within the current model.

Chapter 8

A Quantitative Analysis of Bandcamp Payments

In the previous two chapters, we have examined the behavior of music fans, both within the general population and amongst Bandcamp users. This has given us insight into the scalability of voluntary payments to more music fans and artists, as well as a richer understanding of what motivates fans to support (or not support) artists through voluntary payments. While providing detailed insights, the previous two studies are limited by a common problem within human research: the potential for bias within self-reporting. As humans, we are prone to see ourselves through rose-colored glasses: smarter, kinder, more patient, more ethical, and more generous than we really are. While self-reporting bias is always a concern in survey methodology, it is a particular problem for researching generosity to artists due to the incentive for self-deception: over-reporting one's generosity makes a person feel good about their actions and themselves as a moral individual, versus remembering all of the times that they downloaded music for free or did not pay above the minimum price. To examine fan behavior in a way that omits this bias, we have to look instead directly at their actions. While this would have been difficult in the past, the combination of online platforms, web-scraping, and big-data analysis now allows us a view directly into fan's actions.

In this study, I analyze Bandcamp transactions from April 29th, 2016 to August 4th, 2017 in order to determine what characteristics of the artists and

albums drive higher payments over the minimum price. The findings reveal that more popular artists do receive 10-18% lower payments over the minimum price, compared to unknown artists, and that there are genre differences in payments over the minimum price. In particular, our findings contradict some of the conclusions on genre of the study presented in Chapter 6, based upon self-reported data, which suggested that fans of experimental music are more generous to artists. On the contrary, we find that albums by artists whose genre is experimental receive 6-19% lower payments over the minimum price. Finally, we find evidence for differences in generosity depending on the artist's location, which likely proxies for their fanbase location, with artists in Europe and Japan receiving much lower payments over the minimum compared to those in the US.

Data

The main data set used in this study was collected directly from the salesfeed shown on the Bandcamp homepage, which displays albums being purchased in real-time, along with the currency, total price, and price over the minimum. Collection was set up using Python on Digital Ocean servers by Douglas Adams, a software developer employed professionally in the price-scraping field, and leverages the fact that Bandcamp's homepage has a machine-readable API that allows collection of not only these data points, but also additional information such as the USD price, the type of item (physical or digital), and the type of purchase (track or album). This data was then

downloaded from the server and transformed by me as follows using the R language within R Studio:

- Purchases of individual tracks were filtered out, leaving only albums within the data set.
- An exchange rate was calculated based upon the sale price in the original currency and the USD sale price.
- The base price and amount over the minimum were converted into USD.
- Payments over the minimum of greater or equal to \$25 were excluded from the data.
- Albums with no payments over the minimum were excluded from the data set, as some albums do not allow for minimum payments and it was not possible to distinguish from the data what was the true cause of no minimum payments.
- The data was grouped by band name, album name, item type, and base price. This was done to reduce the size of the data set for modelling and also to prevent albums with considerable sales from skewing the results. The base price was added as a grouping variable because some albums occasionally changed prices.
- Albums with a base price over \$20 were excluded from the data.
- Albums with less than 10 sales in total were excluded from the data, to reduce the possibility of having results skewed by purchases from friends and family of the artist.

Once grouped, the list of remaining unique band names in the data was used to pull information on artist genre and popularity from the Spotify API through the use of the HTR¹⁸² package in R. These two fields can be described as follows:

- Artist genres within Spotify are very detailed and often consist of more than one word. A full mapping of the over 1,300 Spotify genres can be viewed at <http://everynoise.com/>.¹⁸³ The Spotify database does allow artists to belong to more than one genre.
- Spotify artist popularity is a relative measure from 0 to 100 and is based upon the popularity of that artist's tracks. The popularity of the artist's tracks is based upon an algorithm that incorporates the number of plays a track receives and how recent those plays are.^{184 185}

The Spotify data was transformed as follows prior to merging with the Bandcamp sales data:

¹⁸² "httr: Tools for Working with URLs and HTTP," Hadley Wickham. <https://cran.r-project.org/web/packages/httr/index.html>

¹⁸³ "Every Noise at Once," *Every Noise at Once*, last accessed December 18, 2019. <http://everynoise.com/>

¹⁸⁴ "Get an Artist," Spotify for Developers: WEB API, last accessed December 18, 2019. <https://developer.spotify.com/documentation/web-api/reference/artists/get-artist/>

¹⁸⁵ "Get Several Tracks," Spotify for Developers: WEB API, last accessed December 18, 2019. <https://developer.spotify.com/documentation/web-api/reference/tracks/get-several-tracks/>

- A subset of the most popular artists was removed from the data, due to those Bandcamp profiles being fake (the artist does not sell their music through Bandcamp). These were identified by sorting the artists in descending order by popularity and manually checking the pages of top artists. Only artists with high popularity (over 60) were identified in this manner due to the manual nature of the work, far lower likelihood of fake pages for less popular artists, and far more less popular artists to neutralize the effects of fake pages that may exist.
- The Spotify genres were used to construct dummy variables for genres, mapping to those genres used in the study in Chapter 6. To do this, a keyword search was deployed, so that “Indonesian Experimental Rock” would have a “Yes” value for both the experimental and rock genre dummies.

Finally, after merging and prior to modelling, exploratory data analysis was performed, which revealed the following important considerations regarding the data:

- Bandcamp is certainly a long-tail platform, which the most common number of albums sold being one, and many albums selling in the single digits as shown in Figures 8.1 and 8.2.
- When considering the full data, most transactions are at \$0 over the minimum price, as shown in Figure 8.3.

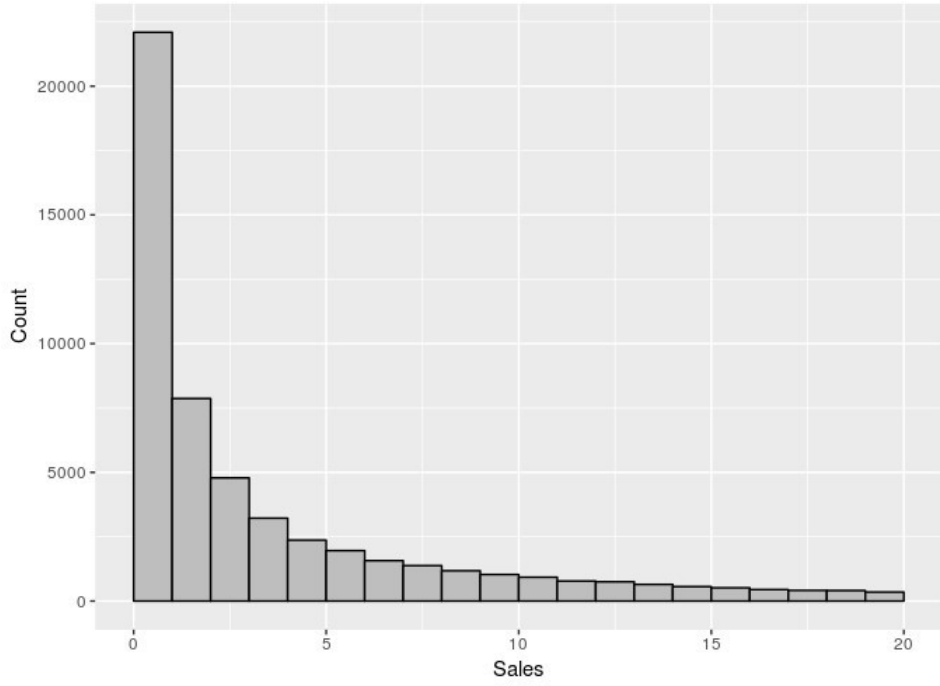


Figure 8.1: Distribution of Album Sales (total sales <= 20)

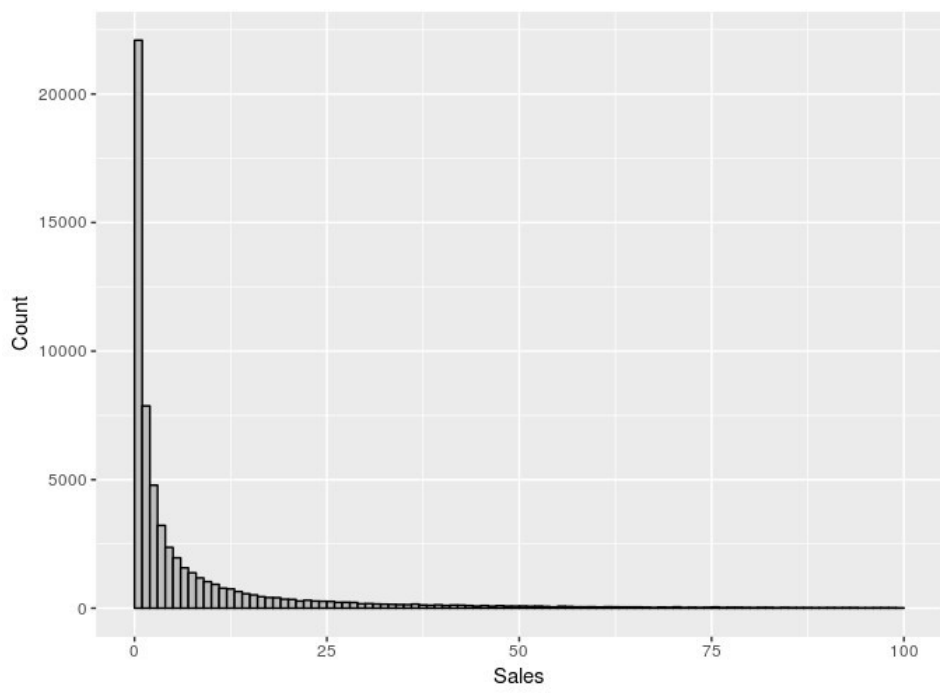


Figure 8.2: Distribution of Album Sales (total sales <= 100)

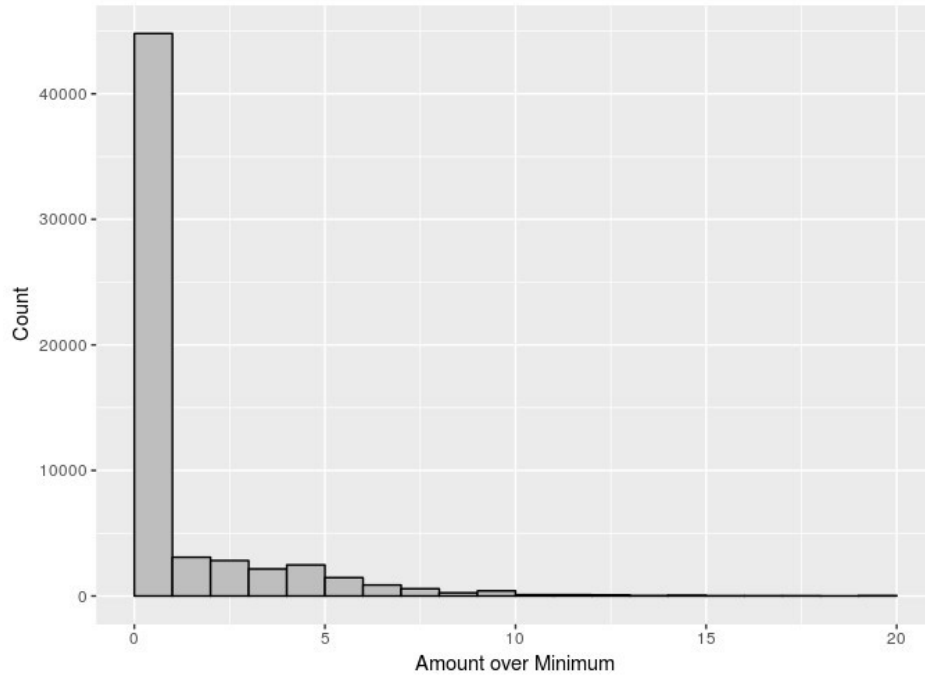


Figure 8.3: Distribution of Payments over Minimum

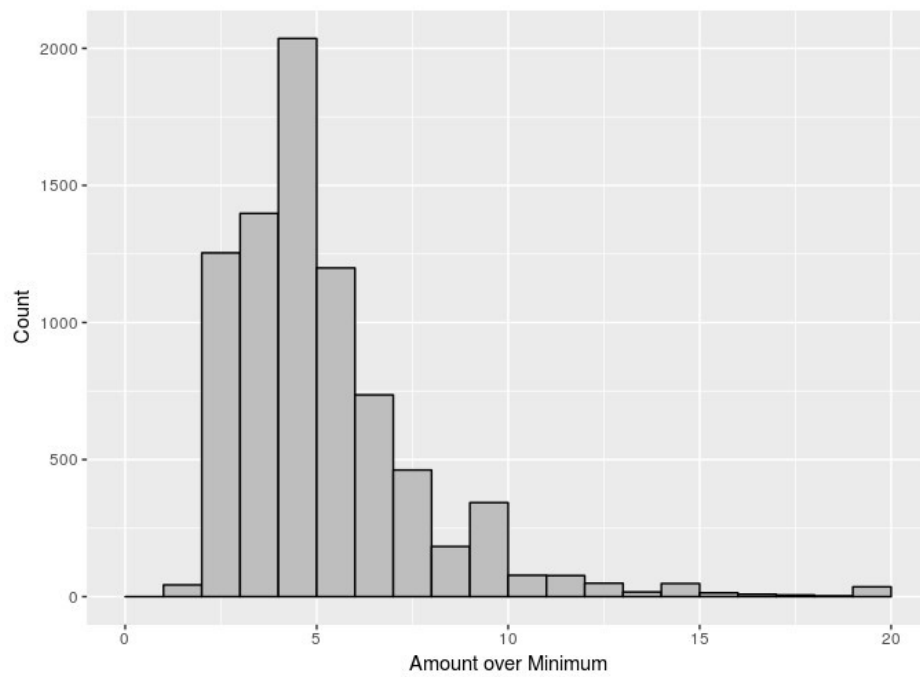


Figure 8.4: Distribution of Payments over Minimum (base price zero)

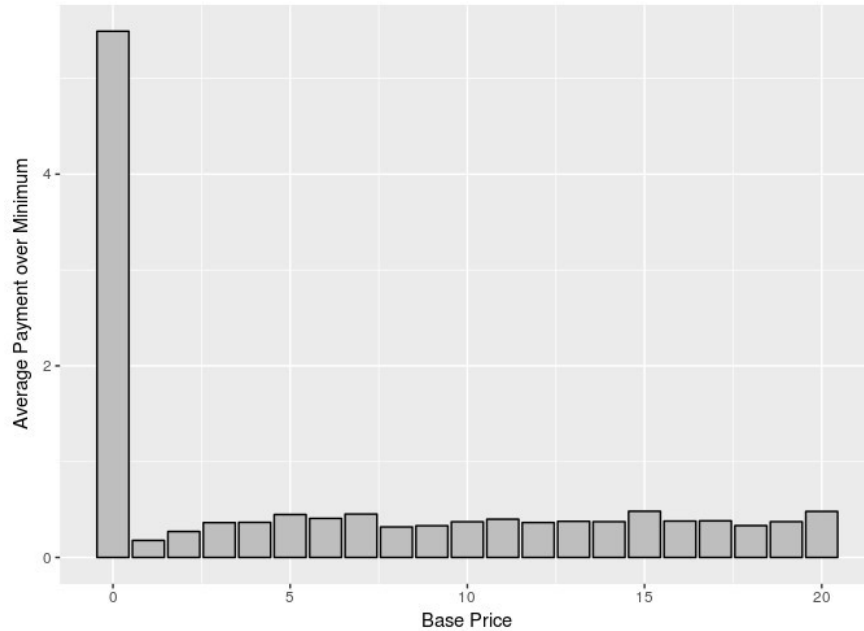


Figure 8.5: Average Payment over Minimum by Base Price

- When considering albums with a base price of zero (true PWYW), payments over the minimum are higher, with the most common value being \$5 over the minimum price, and the average being \$5.49, as shown in Figures 8.4 and 8.5.

Given the evidently different payment behavior shown in Figure 8.5 for albums with a base price of zero, a decision was made to further split the data set into two, with true PWYW albums in one, and albums with a non-zero base price in the other. A full breakdown of the data sets used and the number of observations is shown in Table 8.1.

Table 8.1: Bandcamp Data

Data Set	Observations
Full Bandcamp Album Sales	6,732,792
Grouped Bandcamp Album Sales	61,475
Filtered Non-Zero Base Price Albums	9,813
Filtered Zero Base Price Albums (true PWYW)	1,037

Modelling

All modelling was performed in R using the `lm` function in base R, which performs a straightforward OLS regression. Several model variations and variable transformations were tested in order to achieve the model with the best fit and to tackle problems of non-linear functional form that was diagnosed through the viewing of residual plots. The final formula for the model is as follows:

$$\begin{aligned}
 \ln(\text{over_mean_usd}) &= \beta_0 + \beta_{1:8} * \text{base_bin_factor} + \beta_9 * \text{item_type} + \beta_{10:24} * \text{currency} \\
 &+ \beta_{25} * \ln(\text{sales}) + \beta_{26:27} * \text{pop_factor} + \beta_{28:41} \\
 &* \text{genre_dummy (multiple)} + \varepsilon
 \end{aligned}$$

The variables in the above formula are described in detail in Table 8.2. Furthermore, as indicated previously, the data set was divided into two, with one set for zero base price and another for non-zero base price albums, and modelling was performed for each separately. Correspondingly, some

variables that are not meaningful for the zero-base price data set (item_type, as all are digital and base price variables) do not show up in that model. Furthermore, less currencies were represented in the zero base price data set, and therefore also do not show up in the model for that data. Full regression results for both models are shown in Table 8.3, which also shows cutoff points for factor variables constructed from continuous variables.

Table 8.2: Summary of Variables

Variable	Type	Description
over_mean_usd	Continuous	Average paid over the minimum for album
base_bin_factor	Factor	Base price of album; base level is (0,1]
Item_type	Factor	Type of album: physical (p) or digital (a)
currency	Factor	Currency in which album is listed for sale on Bandcamp. Base level is USD.
sales	Continuous	Number of copies album has sold on Bandcamp
pop_factor	Factor	Spotify popularity for artist
genre_dummy(multiple)	Dummy	Dummy variable for each genre, with "Yes" indicating an artist belongs to a particular genre. Not mutually exclusive, and some artists do not belong to any of genres used in model.

Table 8.3: Drivers of Payments over Minimum

	Dependent Variable: log(over_mean_usd)	
	Zero Base	Non-Zero Base
base_bin_factor(1,2]		-0.218*** (0.065)
base_bin_factor(3,4]		-0.257*** (0.066)
base_bin_factor(3,5]		-0.240*** (0.051)
base_bin_factor(5,7]		-0.183*** (0.050)
base_bin_factor(7,10]		-0.222*** (0.049)
base_bin_factor(10,15]		-0.188*** (0.054)
base_bin_factor(15,21]		-0.159*** (0.061)
Item_typep		0.072*** (0.026)
currencyAUD	-0.041 (0.044)	-0.070 (0.052)
currencyCAD	-0.159*** (0.039)	0.008 (0.056)
currencyCHF		0.172 (0.296)
currencyCZK		0.402 (0.280)
currencyDKK		-0.422** (0.199)
currencyEUR	-0.167*** (0.020)	-0.262*** (0.024)
currencyGBP	-0.125*** (0.020)	-0.285*** (0.023)
currencyHUF		-0.216 (0.483)
currencyILS		-0.165 (0.593)
currencyJPY	-0.102* (0.060)	-0.589*** (0.198)
currencyNOK		-0.106 (0.280)
currencyNZD	0.092 (0.095)	0.387** (0.162)
currencyPLN	0.002 (0.150)	-0.121 (0.375)
currencySEK	-0.260** (0.108)	-0.262 (0.121)
currencySGD		0.293 (0.318)
log(sales)	0.058*** (0.009)	-0.258*** (0.010)
pop_factor(5,40]	-0.101*** (0.025)	-0.117*** (0.035)
pop_factor(40,100]	-0.156*** (0.029)	-0.180*** (0.039)
genre_popYes	0.022 (0.023)	0.102*** (0.027)
genre_rockYes	0.030 (0.018)	-0.039* (0.023)
genre_punkYes	-0.043** (0.019)	-0.099*** (0.026)
genre_jazzYes	-0.016 (0.019)	0.016 (0.034)
genre_metalYes	-0.122*** (0.022)	-0.207*** (0.025)
genre_classicalYes	0.194** (0.084)	0.236** (0.120)
genre_countryYes	0.137 (0.155)	0.161 (0.034)
genre_bluesYes	-0.031 (0.155)	0.104 (0.094)
genre_folkYes	-0.039 (0.028)	0.094*** (0.033)
genre_electronicYes	-0.055*** (0.017)	-0.162*** (0.022)
genre_rapYes	0.066** (0.031)	0.041 (0.040)
genre_rbYes	-0.052** (0.025)	-0.190*** (0.032)
genre_indieYes	-0.007 (0.020)	-0.095*** (0.025)
genre_experimentalYes	-0.061*** (0.020)	-0.189*** (0.025)
Constant	1.693*** (0.035)	0.287*** (0.063)
Observations	1,035	9,812
R2	0.194	0.138
Adjusted R2	0.174	0.134
Residual Std. Error	0.211 (df = 1009)	0.836 (df = 9771)
F Statistic	9.728*** (df = 25; 1009)	38.969*** (df = 40; 9771)

Note:

*p<0.1; **p<0.05; ***p<0.01

Results

As shown in Table 8.3, a number of variables had statistically significant effects on the amount paid over the minimum. Beginning with the base price in the non-zero base price model, all received statistically significant ($p < 0.01$) lower payments compared base prices greater than zero and lower than \$1, but interpretation is tricky here given that the formula is in log form. While payments are lower as a percentage of base price, they would in most cases be higher on an absolute basis (all else being equal) for albums with a higher base price. Item type also had a statistically significant effect ($p < 0.01$), with physical albums receiving approximately 7% higher payments over the minimum compared to digital albums. This was a somewhat surprising finding given that the PWYW approach was pioneered for digital music, whereas consumers are used to paying a fixed price for physical albums. While it may be interpreted as consumers finding more value from the physical album, it may also be indicative of which fans are buying the physical album versus the digital album (more dedicated fans buying the physical, hence the higher payments).

Currency effects were also statistically significant for a number of currencies in both models, compared to the base currency of USD. Several European currencies were shown to have a negative effect on payments over the minimum, with albums denominated in EUR (significant at $p < 0.01$) receiving approximately 17% lower payments in the zero base price model and 26% lower payments in the non-zero base price model. Likewise, albums

denominated in GBP (significant at $p < 0.01$) received approximately 13% lower payments in the zero base model and 29% lower payments in the non-zero base models. SEK was found to have a negative effect (significant at $p < 0.05$) of approximately 26% in the zero base model (and a similar, but non statistically significant effect in the non-zero model) and DKK had a very strong negative effect (significant at $p < 0.05$) of approximately 42% on payments in the non-zero base price model (no zero base price albums exist in the modelling data for this currency). The biggest negative effect, however, was not in Europe, but in Japan, with albums denominated in JPY receiving approximately 59% lower payments (significant at $p < 0.01$) in the non-zero base price model. The only statistically significant positive effect compared to USD was observed for NZD, with non-zero base price albums in this currency receiving approximately 39% greater payments over the minimum.


Does this mean that certain countries or cultures are more generous to artists than others? Possibly, but not necessarily, as there may also be effects introduced by the nominal exchange rate that affect how consumers give. For example, an album that sells in USD for \$10, would be around DKK 70 and JPY 1,000. This may have three possible effects on consumers 1.) they perceive the album in one of these currencies to be more expensive than it really is, and therefore give less 2.) they give less because the amount they are giving over the minimum feels like a lot more (e.g. JPY 100 versus \$1) due to the nominal currency amount and 3.) they do not have a good guideline of what is fair in this currency and therefore are less likely to give at all.

Moving to sales, this is one of the most puzzling results in this study. We see that in the zero price model, an increase of 100% in the number of albums sold positively impacts the average paid over the minimum by approximately 6%, while in the non-zero base price model, we see a negative impact of approximately 26% (both significant at $p < 0.01$). A possible explanation is that the behaviors between these conditions are quite different: in the zero base price model, the fan has already decided to pay over the minimum. How much they give may be impacted by the quality of the album, for which the sales could be a proxy. In the non-zero base price model, however, we are looking at an average across transactions at the base price and above the minimum, and the number of sales being higher may discourage fans from paying over the minimum at all. This may outweigh considerations of quality in terms of price impact or it may be that sales are only a proxy for quality in the zero base price data and not the non-zero base price data (perhaps artists feel that they have to meet a basic level of quality to charge a minimum price for an album). If it is the case that more sales lead to lower likelihood of paying over the minimum, then this would be a limitation for relying on voluntary payments for more famous artists. As an additional note to this, a fan buying an album would see the total number of sales, up to a maximum of 60, as shown in the lower-right corner of the screenshots in Figures 8.6 and 8.7. Clicking “More...” does reveal more supporters, and continuing to click should show the buyer all of the album's sales.

Under the Rainbow
by [Carsten Dahl](#), [Arild Andersen](#), [Jon Christensen](#)

Under the Rainbow #1 00:00 / 03:31

Digital Album
Streaming + Download
Includes unlimited streaming via the free Bandcamp app, plus high-quality download in MP3, FLAC and more.
Buy Digital Album 50 DKK or more
[Send as Gift](#)

CD
Compact Disc (CD) + Digital Album

Includes unlimited streaming of *Under the Rainbow* via the free Bandcamp app, plus high-quality download in MP3, FLAC and more.
ships out within 3 days
Buy Compact Disc 120 DKK or more
[Send as Gift](#)

[Share / Embed](#) [Wishlist](#)

supported by




Figure 8.6: Bandcamp Page for “Under the Rainbow”¹⁸⁶

Before proceeding to popularity, it should be clarified why two variables that would seem to be nearly identical, sales and popularity, are both in the model. Checking the correlation between the two reveals that it is only around 0.20, and that in fact the two variables measure an artist's popularity very differently. Spotify popularity captures their user base's willingness-to-listen, and how recent those listens are, which does not necessarily correspond to a willingness-to-pay for the music. Bandcamp sales, on the other hand, are to some extent a measure of the willingness of fans to pay for the music as

¹⁸⁶ “Under the Rainbow,” Carsten Dahl, Arild Andersen, and Jon Christensen, Bandcamp, Storyville Records, last accessed December 29, 2019. <https://storyvillerecords.bandcamp.com/album/under-the-rainbow>

Who Killed Amanda Palmer

by Amanda Palmer



Digital Album

Streaming + Download

Includes high-quality download in MP3, FLAC and more. Paying supporters also get unlimited streaming via the free Bandcamp app.

Buy Digital Album name your price

Send as Gift

Buy CD/Vinyl/DVD

- ▶ 1. Astronaut 04:37
- ▶ 2. Runs in the Family 02:44
- ▶ 3. Ampersand 05:58
- ▶ 4. Leeds United 04:47
- ▶ 5. Blake Says 04:36
- ▶ 6. Strength Through Music 03:29
- ▶ 7. Guitar Hero 04:47
- ▶ 8. Have to Drive 05:42
- ▶ 9. What's the Use of Wond'rin'? 02:49
- ▶ 10. Oasis 02:07
- ▶ 11. The Point of it All 05:35
- ▶ 12. Another Year 06:02

hello listener!
i am currently hosting my music here for FREE / NAME YOUR PRICE...
and this is possible because i am using patreon, a new crowd-support platform
now housing thousands of my listeners who believe in direct arts patronage!
if you are hard up and can't afford to download this, PLEASE TAKE IT FOR FREE.
if you're a one-time listener and would like to donate, please consider dropping a dollar or more in the blank box.
if you're a supporter of my patreon: take what you want, and THANK YOU!!!
YOU ARE WHAT MAKES ALL THIS FREE CONTENT POSSIBLE FOR EVERYONE ELSE!

to support my patreon, where you can hang me with me, the community, and get special webcasts, blogs and other Things I Make , go here: www.patreon.com/amandapalmer



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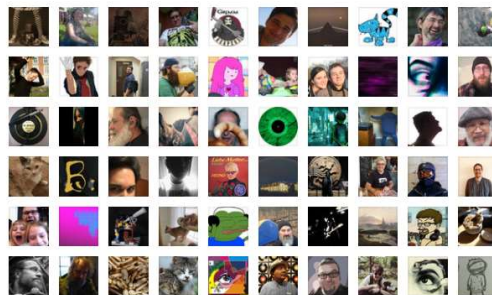
supported by

Maddie *Great collection of songs. I find the songs on the album to be the most accessible for new listeners of AP's music. Favorite track: Strength Through Music.*

spacehawk.mp3 *It was hard to choose a track as my favourite, I love this album and Amanda Palmer Favorite track: Runs in the Family.*

dave doran *I love this album, raw, immediate and beautiful with the kind of power that draws me back over and over to listen. The kind of brilliant songwriting and lyrical depth that makes me glad it's in my language. Cheap theatrics, a bit of humor and clear clean sincerity. Favorite track: Have to Drive.*

more...



more...

Figure 8.7: Bandcamp Page for "Who Killed Amanda Palmer"¹⁸⁷

¹⁸⁷ "Who Killed Amanda Palmer," Amanda Palmer, Bandcamp, last accessed December 29, 2019. <https://amandapalmer.bandcamp.com/album/who-killed-amanda-palmer>

those listening for free on the page would not be counted. Furthermore, Bandcamp sales would be representative of an artist's popularity on the platform, which may not be reflective of the artist's popularity overall, as it depends on how many outlets an artist has for their music: an artist selling their music through multiple sites may have less sales on Bandcamp than a less popular (in the sense of total fanbase) artist who uses Bandcamp exclusively.

Regarding popularity, the model did reveal that more popular artists do in fact receive lower payments than less popular ones. A popularity score between 6 and 40 leads to an approximately 10% lower payment in the zero base price model and a 12% lower payment in the non-zero base price model (both significant at $p < 0.01$) compared to a popularity of 0 to 5. Likewise, a popularity score between 41 and 100 leads to an approximately 16% lower payment in the zero base price model and an 18% lower payment in the non-zero base price model compared to a popularity of 0 to 5 (both also significant at $p < 0.01$). This does indicate that fans are more generous to less popular artists compared to those who are more popular. However, it does not mean that voluntary payment platforms do not work for these artists, as the magnitude of the effect is not as large as may be expected. It is not the case that unpopular artists are not receiving payments over the minimum at all, they are just 10-18% lower than what less popular artists would receive. Given the additional benefits of voluntary payments, such as allowing more fans to get to know your music, they could still be very viable for popular artists.

Finally, we turn to the effects of genre on payments, which reveals some of the most surprising results of the study. In the study outlined in Chapter 6, we saw evidence that fans of jazz and experimental music are more generous to artists on Bandcamp. However, in analyzing the transaction data, there is no statistically significant effect of the jazz genre and a *negative* effect of the experimental genre on payments over the minimum price, with those albums receiving approximately 6% lower payments over the minimum in the zero base price model and 19% lower payments in the non-zero base price model (significant at $p < 0.01$). There are two possible explanations of this: First, the wording of the survey analyzed in Chapter 6 asked fans *how often* they pay over the minimum and not how much they pay. It is possible that by paying more often, experimental music fans also pay less, because they need to spread their generosity over more albums. However, looking at the raw transaction data does not support this explanation as non-zero base price experimental albums received payments over the minimum only 6.2% of the time compared to 8.3% for those not identified as experimental. Second, the groups may in fact not be the same. In the study in Chapter 6, fans are self-reporting as fans of experimental music, whereas in this case we are identifying experimental artists based upon their Spotify genres. There is likely some overlap, but it may be very small. So, it is entirely plausible that both results are correct: fans of experimental music are more generous, but experimental music albums (as defined by Spotify genre) receive lower payments over the minimum.

Why would experimental albums receive lower payments over the minimum? One may expect the opposite given that these artists do not make a lot of money and need these payments more than others. The explanation may in fact be contained within the preceding sentence as many fans of experimental music are themselves experimental musicians, and would have less income with which to be generous. Another possible explanation is the prolific output of many experimental musicians. There is often a bias towards over-documenting in experimental music and some artists will release multiple albums per year, with many of these consisting of live performances. This means that the fan has more albums over which they need to spread their generosity and budget. Another implication of the high output is that the sound quality of some of these recordings is lower because they capture live concerts with less-than-ideal acoustics. The artists choose to release them anyway, however, because of the energy of the performances. It is possible that fans associate the lower sound quality with less value. Finally, there may be a perception amongst fans that experimental music albums are easier to create than those in other genres that require a significant investment in the studio.

Another genre with a surprising negative effect is metal. Albums of artists that belong to the metal genre received payments over the minimum that were approximately 12% lower in the zero base price model and 21% lower in the non-zero base price model (both significant at $p < 0.01$). The result is surprising, given that it is a genre with very dedicated fans who value a high

level of technical musical ability, in some ways not unlike fans of experimental music. A possible explanation may be in the overlap of the two fan bases. Another could be in the fan base for metal skewing younger and having less income than fans of other genres.

The income explanation does appear to have support if we look at the genre that receives the highest payments over the minimum: classical music. The model shows that fans pay approximately 19% more over the minimum for zero base price classical albums and 24% more over the minimum for non-zero base price albums (both significant at $p < 0.05$). Classical music is often associated with an older and wealthier fan base and the higher payments may be reflective of that. Returning to one of the hypotheses regarding experimental music, there may also be an explanation related to perceived quality: the sound quality of classical recordings is on the opposite side of the spectrum to many experimental recordings, with detailed and clear sound derived from recording techniques that deploy few, but very high quality, microphones and excellent recording acoustics within studios or concert halls.

Implications

While the results above do reveal some differences in willingness-to-pay based upon geography, album type, popularity, and genre, they are also quite striking in terms of the low magnitude of the effects. Outside of the currency effects, the differences tend to be in the 5-25% range and do not indicate massive differences in support levels based upon any of these factors. Overall, these results indicate that voluntary payments can work for artists of

different levels of popularity and across genres. However, they do not indicate conclusively that they can work for *all artists*. As seen in the regression results, the models only explain only 19.4% (zero base price) and 13.8% (non-zero base price) of the total variance in prices over the minimum. The less quantifiable qualities of the artist and the music covered in Chapter 7 are likely driving more of the variance in payments, which indicates that there may still be limitations for artists of which fans have a negative perception but still want the music. Still, this means that if the artists cultivate the right image and relationship with fans, they should not be precluded from succeeding on these platforms due to the type of music they play or how popular (or not) they are.

Chapter 9

Conclusion

To conclude, I would like to return to the questions posed in Chapter 5 and synthesize the results from the three studies to answer them. The first set of questions concerns the potential longevity of voluntary payment platforms:

Are voluntary payment platforms the beneficiaries of consumer socialization that occurred during the CD era, which established a social norm around paying for and owning music? If so, do digital natives behave differently on these platforms or shun them entirely? What does this mean for the future in which digital natives are the majority of music consumers?

Results in Chapter 6 do not reveal a statistically significant age effect on either platform choice, recorded music spending, or support levels after controlling for income. This indicates that digital natives' consumption patterns have the potential to resemble those of older fans as their income increases with age (assuming that platforms exist to capture this spending), and bodes well for the future of voluntary payments.

Can voluntary payment platforms change behavior and create a new culture of supporting artists financially? Does being a user of a voluntary platform make a fan more likely to support musicians financially compared to those who do not use these platforms?

As detailed in Chapter 6, the fact that Bandcamp users spend more on average than non-Bandcamp users, holding all other factors constant, indicates that Bandcamp itself has created a culture of supporting artists through intelligent design decisions, such as the ability to follow fans, which establishes normative behavior around purchasing music, expert curation,

which presents fans with more music to buy, and a pro-artist message, which gives the fans a greater feeling of agency. The final point is supported by the analysis of open responses, in which Bandcamp users do specifically mention the pro-artist nature of the site, as well as the quantitative analysis that shows Bandcamp users believe that more of their money goes to the artist on the site versus other channels.

How does use of streaming services affect use of voluntary payment platforms? Do users with a paid streaming subscription buy less music or pay lower prices on these platforms?

One of the most surprising findings in Chapter 6 is that fans with paid streaming subscriptions are more likely to use Bandcamp, buy more recorded music, and pay over the minimum more often than those without such subscriptions. This indicates that streaming can be a complement, rather than competitor, for voluntary payments, and again supports the longevity of these approaches. However, the success of voluntary payments within the access economy will depend on whether or not voluntary payment platforms can adapt to the access model, as Patreon has, and also on the integration of voluntary payments into streaming ecosystems.

The next set of questions concerns the ability of voluntary payment platforms to scale to more artists:

Do voluntary payment platforms work equally well for artists in different segments of the market? Are there differences in support levels or prices paid for artists that are considered emerging/DIY, indie, or major acts?

While no effect of artist popularity was seen in Chapter 6, the analysis of transactions in Chapter 8 did show that more popular artists do in fact receive

10-18% lower payments over the minimum compared to less popular artists. However, the magnitude of this effect is not as great as one might expect, and does not mean that these platforms cannot work for more established artists, only that they work less well.

Do certain genres of music receive more support or higher prices paid? Are consumers willing to support all genres on these platforms?

The studies in Chapters 6 and 8 both found genre effects on payments. However, the interpretation is different as Chapter 6 considered fans' preferred genres while Chapter 8 considered the genre of the artist. In Chapter 6, we saw indications that fans of jazz and experimental music are more generous to artists on Bandcamp, while those who listen to Blues and Easy Listening are less generous. However, in Chapter 8, we saw that albums of experimental artists receive lower payments, as do those of other genres, such as metal and punk. Classical music, on the other hand, was associated with higher payments. While the magnitude of these difference is generally less than 25%, it does indicate that some genres may in fact not fare as well within this paradigm.

In a similar vein, we also consider questions regarding generalizability with respect to fans:

Do users of voluntary payment platforms hold different beliefs regarding the music industry and the importance of supporting artists than the general population? Are those who do not use these platforms motivated by the perceived excesses of the music industry? If so, can the beliefs of those in the general population be changed so that they adopt these platforms?

There was no indication from the study in Chapter 6 that Bandcamp users hold different beliefs than non-Bandcamp users, with one exception: Bandcamp

users believe that more of their money is going to the artist. However, this is more likely a consequence of using the platform, which actually does give more money to the artist compared to other channels, rather than a causal relationship that leads to the use of the platform. Additionally, results from the quantile regression revealed that a fan's sense of agency may be important to them entering the paid music ecosystem in the first place, and voluntary payment platforms may therefore have an important role to play in bringing non-paying users back to paying for music.

Are users of voluntary payment platforms more dedicated fans of the artist than the average fan? Does music hold more importance for them in their lives compared to the average consumer?

The analysis in Chapter 6 shows that Bandcamp users are in fact more dedicated music fans and that music holds a bigger importance in their lives. However, a thorough examination of the distribution of fandom reveals that a majority of music fans could become users of these platforms, even if they are unable to scale to the entire population.

Next, we move to the question of the pricing strategy used by the artists within Bandcamp, and how this affects payments by fans:

How does the minimum price set in a PWYW environment affect the amount paid by fans?

As shown in Chapter 8, albums that set a floor price receive much lower payments over the minimum than those that are true PWYW albums. This indicates that the floor price may be muddying the waters and not invoking the charitable framework we see in the true PWYW condition.

Finally, we consider questions particular to the artist and the music that is being created:

How do perceptions of the music and artist affect the price that fans choose to pay? Are they motivated by musical and/or extra-musical factors?

This question was considered in-depth in the analysis of open responses in Chapter 7, in which we observed that fans will pay more or less based upon the artists values and behavior, indicating that artists with negative publicity may not do so well within these platforms. We also saw a preference for music with high emotional impact and connection to extra-musical meaning, which may be limiting for some artists, but not necessarily particular genres.

Implications

What does all of this mean for the future and potential scalability of voluntary payments? Overall, we do not see evidence of a major limiting factor to either the growth or longevity of these platforms based upon fan attitudes and/or demographics. For individual artists, there may be some limits, but it is not clear that these would not be outbalanced by the benefits of using voluntary payments, such as the goodwill from fans and the ability to grow one's fanbase. It is my contention that the main limit to the growth and survival of these platforms is the music industry itself. Specifically, the industry is currently putting all of its eggs in the streaming basket, neglecting the distribution of consumer spending and the consumer surplus that they are leaving on the table by doing so. Furthermore, the industry's risk aversion and unwillingness to

innovate are not changing fast enough to embrace new models, and all innovation in the last several years has been from the music tech sector. While there is more appetite to innovate within the streaming services themselves, their ability to do so is hamstrung by the contracts in place with the record labels, which are still largely in control of this ecosystem.

Future Research Directions

What are the possibilities for further research in this area? Having completed these studies, the major limitation I see is a lack of completeness within any particular method: survey methodology gives insight into beliefs and demographics, but does not allow us to see actual behavior, whereas data mining reveals actual behavior but little about the fans. Analyzing open responses provides depth lacking in more quantitative methods, but is restricted to a small sample size that may not be representative of the overall population. In these studies, I have used all three methods, with the hope that approaching these questions from multiple perspectives gives a more robust understanding of how fans behave on these platforms. However, being able to combine all three methods in one study would have further advantages as it would enable the connection of actual behavior with demographics and beliefs, plus in-depth exploration of motivations through open responses and interviews that could reference the user data.

A good starting point in this direction is partnership between academia and the voluntary payment platforms themselves, as I have done in my

research study with Patreon's Data Science and User Research teams. Working with the platforms allows for user data to be connected to details about the fans that they enter when they create an account and that is collected through surveys, resolving some of the problems inherent to using one method alone. However, to truly advance in this area, the platforms need to also embrace an ethos of experimentation to validate any conclusions derived from the research. This is a challenge, as experimentation has consequences for the livelihoods of artists, but so far indications from Patreon are positive on the willingness to experiment and improve the platform.

Beyond the realm of voluntary payments, I sincerely hope that the University of California San Diego, as well as other institutions, continue to embrace interdisciplinary research and create more formal frameworks to enable it. Completing this dissertation was a crash course in marketing research, regression analysis, and programming, and not only expanded my skill set but also gave me a thorough sense of the trade-offs inherent in these methodologies. While I did a lot of this learning on my own, there is great potential in formalizing interdisciplinary research with the university system and giving students a systematic foundation in various research methods earlier in their academic careers. I am very thankful for the opportunity that I had, and hope that more students in the future will be able to follow down this path.

Appendix 1 Targeted Metropolitan Statistical Areas

MSA	State
Seattle	WA
San Francisco	CA
Portland	OR
San Diego	CA
Denver	CO
Sacramento	CA
Pittsburgh	PA
Providence	RI
Grand Rapids	MI
Rochester	NY
Charleston	SC
Portland	ME
New Orleans	LA
New York	NY
Los Angeles	CA
Austin	TX
Baltimore	MD
Louisville	KY
Albuquerque - Santa Fe	NM
San Antonio	TX
Boston	MA
Savannah	GA
Chicago	IL
Boulder	CO
Minneapolis	MN
Salt Lake City	UT
Asheville	NC
Ann Arbor	MI
Cincinnati	OH

Appendix 2 Qualtrics Questionnaire

Start of Block: Consent

Krzysztof Golinski, who is a graduate student at UCSD, is conducting a research study to find out more about why people purchase music.

If you agree to be in this study, the following will happen to you:

You will be asked questions regarding your music purchase and listening habits through an online questionnaire. The entire questionnaire should take no more than 10 minutes to complete. Research records will be kept confidential to the extent allowed by law. You will not be asked to provide any information that may identify you, such as your name, email, address, or phone number. Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without penalty or loss of benefits to which you are entitled. If you want additional information or have questions or research-related problems, you may reach Krzysztof Golinski at 917-254-2826.

Do you wish to continue and participate in this study?

- Yes (1)
- No (2)

End of Block: Consent

Start of Block: Screening Questions

Bandcamp_YN Have you ever purchased music (physical or digital) on Bandcamp.com?

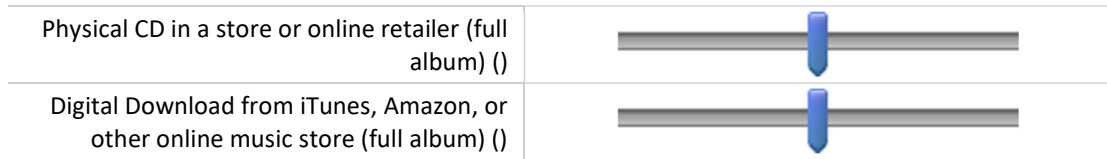
- Yes (1)
- No (2)

End of Block: Screening Questions

Start of Block: Purchase Habits Questions

Sales_Pr_to_Artist When you buy music, how much of a \$10 sales price do you believe goes to the artist?

0 1 2 3 4 5 6 7 8 9 10



Stream_to_Artist When you pay for a subscription to a streaming service such as Pandora or Spotify, how much of the \$10 subscription fee do you believe goes to the artists that you listen to on the service?

0 1 2 3 4 5 6 7 8 9 10

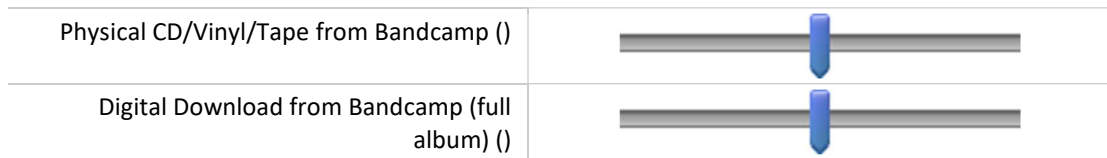


Display This Question:

If Have you ever purchased music (physical or digital) on Bandcamp.com? = Yes

Bandcamp_to_Artist When you buy music on Bandcamp, how much of a \$10 sales price do you believe goes to the artist?

0 1 2 3 4 5 6 7 8 9 10



End of Block: Purchase Habits Questions

Start of Block: Financial Benefit Beliefs



Rank_Purch_Ben When buying music as a CD or digital download, who do you believe receives the most financial benefit? Please rank (change the order by clicking and dragging) from 1 to 5, with 1 being the most financial benefit and 5 being the least.

- _____ The Musician/Artist (1)
- _____ Artist's Manager (2)
- _____ Record Label (3)
- _____ Recording Studio/Engineer (4)
- _____ Music Retailer (5)

Display This Question:

If Have you ever purchased music (physical or digital) on Bandcamp.com? = Yes



Rank_Bandcamp_Ben When buying music on Bandcamp as either a physical product or digital download, who do you believe receives the most financial benefit? Please rank from 1 to 5, with 1 being the most financial benefit and 5 being the least.

- _____ The Musician/Artist (1)
- _____ Artist's Manager (2)
- _____ Record Label (3)
- _____ Recording Studio/Engineer (4)
- _____ Bandcamp (5)



Rank_Stream_Ben When paying for a streaming subscription on a service such as Pandora or Spotify, who do you believe receives the most financial benefit? Please rank from 1 to 5, with 1 being the most financial benefit and 5 being the least.

- _____ The Musician/Artist (1)
- _____ Artist's Manager (2)
- _____ Record Label (3)
- _____ Recording Studio/Engineer (4)
- _____ Streaming service (5)

Concert_to_Artist When buying a concert ticket, please indicate how much of at \$100 ticket price you believe goes to the artist:

0 10 20 30 40 50 60 70 80 90 100



Rank_Concert_Ben When buying a concert ticket, who do you believe receives the most financial benefit? Please rank from 1 to 5, with 1 being the most financial benefit and 5 being the least.

- _____ The Musician/Artist (1)
- _____ Artist's Manager (2)
- _____ Concert Promoter (3)
- _____ Ticketing Company (4)
- _____ Concert Venue (5)

Mrch_to_Artist When buying an artist T-shirt, please indicate how much of a \$20 sales price you believe goes to the artist:

0 2 4 6 8 10 12 14 16 18 20



Rank_Mrch_Ben When buying an artist T-shirt, who do you believe receives the most financial benefit? Please rank from 1 to 5, with 1 being the most financial benefit and 5 being the least.

- _____ The Musician/Artist (1)
- _____ Artist's Manager (2)
- _____ Record Label (3)
- _____ T-shirt Retailer (4)
- _____ T-shirt Manufacturer (5)

End of Block: Financial Benefit Beliefs

Start of Block: Impact/Economic Fairness Questions



Econ_Impact Please indicate the extent to which you agree or disagree with the following statements:

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
The musicians whose music I listen to have significantly more money than they need. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The musicians whose music I listen to have a hard time making ends meet financially. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The musicians whose music I listen to create music because they love playing/singing. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The musicians whose music I listen to create music to make money. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My purchase of a CD or digital download helps the artist financially. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My purchase of a CD or digital download helps the artist in their career prospects. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To ensure that you are reading carefully, please select "strongly disagree" for this option. (11)

My payment for a streaming subscription helps artists financially. (9)

My payment for a streaming subscription helps artists in their career prospects. (10)

Musicians make most of their money from live performances. (7)

Musicians make most of their money from selling recorded music. (8)

Skip To: End of Block If Please indicate the extent to which you agree or disagree with the following statements: != Musicians make most of their money from live performances.

End of Block: Impact/Economic Fairness Questions

Start of Block: Fandom Questions

Fandom Please indicate the extent to which you agree or disagree with the following statements:

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
Listening to music is one of my favorite activities (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Music is an important part of my life (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy talking about music with others (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to spend time discovering and listening to new music (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



hrs_listen_music How many hours per day do you listen to music? Please include time that you have music on in the background as well as listening to music while in a car.



Genres Please select your preferred genres of music (select up to three):

- Pop (1)
 - Rock (2)
 - Jazz (3)
 - Metal (4)
 - Classical (5)
 - International (6)
 - Country (7)
 - Blues (8)
 - Folk (9)
 - Electronic (10)
 - Rap (11)
 - R&B (12)
 - Easy Listening (13)
 - Avant-Garde/Experimental (14)
-

Fav_Artists Please provide the names of your 3 favorite musical artists

Artist 1 (1) _____

Artist 2 (2) _____

Artist 3 (3) _____

End of Block: Fandom Questions

Start of Block: Open Response

Imp_Buy_Music It is important to purchase recorded music or pay for a streaming subscription to support musical artists.

Strongly agree (1)

Agree (2)

Somewhat agree (3)

Neither agree nor disagree (4)

Somewhat disagree (5)

Disagree (6)

Strongly disagree (7)

Imp_Buy_Music_OR Please explain your answer to the preceding question and indicate why buying recorded music or paying for a streaming subscription is or is not important to you.

Page Break

Display This Question:

If Have you ever purchased music (physical or digital) on Bandcamp.com? = Yes

Why_Bandcamp_OR Why do you buy music on Bandcamp?

Display This Question:

If Have you ever purchased music (physical or digital) on Bandcamp.com? = Yes

Pay_Bandcamp_OR How do you decide how much to pay for music on Bandcamp?

End of Block: Open Response

Start of Block: Bandcamp payments question

Display This Question:

If Have you ever purchased music (physical or digital) on Bandcamp.com? = Yes

Bandcamp_Min_Price When buying music on Bandcamp, how frequently do you pay above the minimum price?

- Always (1)
- Almost all of the time (2)
- Most of the time (3)
- About half of the time (4)
- Sometimes (5)
- Rarely (6)
- Never (7)

End of Block: Bandcamp payments question

Start of Block: Purchase Habits

Music_Purch In the past 6 months, how many of the following have you purchased?
(If none, please enter 0)

Music album on CD (1)

Digital download of full music album (2)

Digital download of single music track (3)

Music album on Vinyl (4)

Music album on Cassette (5)

Concert Ticket (6)

Band merchandise such as a T-shirt or poster (7)



Num_Streaming Please indicate if you currently use any of the following online music services to listen to music: (select all that apply)

- I do not listen to music online (12)
 - Pandora (1)
 - Spotify (2)
 - Apple Music (3)
 - iHeartRadio (7)
 - YouTube (5)
 - Amazon Music (10)
 - Google Play (4)
 - SoundCloud (6)
 - Napster (formerly Rhapsody) (8)
 - Tidal (13)
 - Deezer (14)
 - TuneIn (15)
 - 8Tracks (9)
 - Other Streaming Service, Website, or Music App (11)
-

Display This Question:

*If Please indicate if you currently use any of the following online music services to listen to musi...
!= I do not listen to music online*



Num_Subscription Please indicate if you currently pay for a subscription to any of the following online music services: (select all that apply)

- I do not pay for any subscription service (12)
 - Pandora (1)
 - Spotify (2)
 - Apple Music (3)
 - YouTube (5)
 - Amazon Music (10)
 - Google Play (4)
 - SoundCloud (6)
 - Napster (formerly Rhapsody) (8)
 - Tidal (13)
 - Deezer (14)
 - TuneIn (15)
 - 8Tracks Plus (9)
 - Other Streaming Service, Website, or Music App (11)
-

End of Block: Purchase Habits

Start of Block: Demographic



Birth_Year Please enter the year in which you were born



ZIP Please provide your 5 digit Zip Code

Income Please indicate your total household income for this year:

- Less than \$10,000 (1)
- \$10,000 - \$19,999 (2)
- \$20,000 - \$29,999 (3)
- \$30,000 - \$39,999 (4)
- \$40,000 - \$49,999 (5)
- \$50,000 - \$59,999 (6)
- \$60,000 - \$69,999 (7)
- \$70,000 - \$79,999 (8)
- \$80,000 - \$89,999 (9)
- \$90,000 - \$99,999 (10)
- \$100,000 - \$149,999 (11)
- More than \$150,000 (12)

Perceived_Wealth My income meets all of my spending needs

- Strongly agree (1)
 - Agree (2)
 - Somewhat agree (3)
 - Neither agree nor disagree (4)
 - Somewhat disagree (5)
 - Disagree (6)
 - Strongly disagree (7)
-

Marital_Status Please indicate your marital status

- Married (1)
 - Not married, and not living with a partner (2)
 - Not married, but living with a partner (3)
 - Separated (4)
 - Divorced (5)
 - Widowed (6)
-

Gender Please indicate your gender:

- Male (11)
 - Female (12)
 - Unspecified (13)
-

Ethnicity Please select your ethnicity

- White (1)
 - Hispanic/Latino (7)
 - Black or African American (2)
 - American Indian or Alaska Native (3)
 - Asian (4)
 - Native Hawaiian or Pacific Islander (5)
 - Other (6)
-

Num_Children How many children live with you in your household or are supported by you financially?

Education Please indicate the highest level of education you have attained:

- Less than high school (1)
 - High school graduate (2)
 - Some college (3)
 - 2 year degree (4)
 - 4 year degree (5)
 - Professional degree (6)
 - Doctorate (7)
-

Music_Inst Do you play a musical instrument?

- Yes (1)
 - No (2)
-

Display This Question:

If Do you play a musical instrument? = Yes

Prof_Musician Are you a professional or aspiring professional musician?

- Yes (1)
- No (2)

End of Block: Demographic

Bibliography

- Anderson, Chris. *Free*. New York: Hyperion. 2009.
- Asher, Martin A., John A. DeRoccoli, and Joseph A. Fuhr. "Antitrust Implications of Minimum Advertised Pricing: The Case of the US Music Industry, The." *ESLJ* 3 (2005).
- Bandcamp. "Bandcamp." Bandcamp. accessed July 20, 2017.
<http://bandcamp.com>.
- Bandcamp. "Bandcamp Fair Trade Music Policy." Bandcamp. Last accessed May 15, 2016. https://bandcamp.com/fair_trade_music_policy.
- Bandcamp. "Pricing." Last accessed December 29, 2019.
<https://bandcamp.com/pricing>.
- Bartlett, Jamie. "Imogen Heap: saviour of the music industry?" *The Guardian*. September 6, 2015.
<http://www.theguardian.com/music/2015/sep/06/imogen-heap-saviour-of-music-industry>.
- Belsky, Leah, Byron Kahr, Max Berkelhammer & Yochai Benkler. "Everything in its Right Place: Social Cooperation and Artist Compensation." *Mich. Telecomm. & Tech. L. Rev.* 17 (2010).
- Benkler, Yochai. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. New Haven: Yale University Press. 2007.
- Benkler, Yochai. *The Penguin and the Leviathan: How Cooperation Triumphs over Self-Interest*. New York: Crown Business. 2011.
- Bernstein, Keith, Personal Conversation, October 13, 2014.
- Bourreau, Marc, Pinar Doğan, and Sounman Hong. "Making money by giving it for free: Radiohead's pre-release strategy for *In Rainbows*." *Information Economics and Policy* 32 (2015): 77-93.
- Bowles, Samuel. *The Moral Economy*. New Haven: Yale University Press. 2016.
- Brains. Brains. Last accessed May 15, 2016,
<https://brainsmusic.bandcamp.com/>.

- Brown, Steven Caldwell. "Where do beliefs about Music Piracy come from and how are they shared? An Ethnographic Study." *International Journal of Cyber Criminology* 10, no. 1 (2016): 21.
- Bylin, Kyle. *Promised Land*. 2014.
- Caragena, Juan. "What is the right name for the 'sharing economy.'" Medium. December 13, 2014. <https://medium.com/ouishare-connecting-the-collaborative-economy/is-there-a-better-name-for-the-sharing-economy-2d7489e1f56d#.ykusabmat>.
- Chang, Jeff. *Can't Stop Won't Stop: A History of the Hip-Hop Generation*. New York: Picador. 2005.
- Clover, Joshua. "Amanda Palmer's Accidental Experiment With Real Communism." *The New Yorker*. October 2, 2012. <http://www.newyorker.com/culture/culture-desk/amanda-palmers-accidental-experiment-with-real-communism>.
- Common. "The Questions." *Like Water for Chocolate*. MCA. 2000.
- comScore. "For Radiohead Fans, Does 'Free' + 'Download' = 'Freeload'?" comScore. November 5, 2007. <http://www.comscore.com/Insights/Press-Releases/2007/11/Radiohead-Downloads>.
- Creative Commons. "Attribution-NonCommercial-ShareAlike 3.0 United States." Creative Commons. Last accessed May 15, 2015. <http://creativecommons.org/licenses/by-nc-sa/3.0/us/>.
- Creative Commons. "Magnatune." Creative Commons. September 18, 2003. <https://blog.creativecommons.org/2003/09/18/magnatune/>.
- Dahl, Carsten, Arild Andersen, and Jon Christensen. "Under the Rainbow." Bandcamp. Storyville Records. Last accessed December 29, 2019. <https://storyvillerecords.bandcamp.com/album/under-the-rainbow>.
- Danziger, Shai, Jonathan Levav, and Liora Avnaim-Pesso. "Extraneous Factors in Judicial Decisions," *Proceedings of the National Academy of Sciences*, 108 (2011).
- David, Personal Conversation, March 10, 2016.
- Dieselife. "Pirates of Reddit, why, what and how do you pirate?" Reddit. Last accessed May 14, 2016.

https://www.reddit.com/r/AskReddit/comments/3777ro/pirates_of_reddit_why_what_and_how_do_you_pirate/.

Eaves, Elisabeth. "Who Gives The Most?" Forbes. December 26, 2008. http://www.forbes.com/2008/12/24/america-philanthropy-income-oped-cx_ee_1226eaves.html.

Elberse, Anita. "Bye Bye Bundles: The Unbundling of Music in Digital Channels." *Journal of Marketing*. 74 (2010): 107-123.

Electronic Frontier Foundation. "DMCA." Last accessed May 14, 2016, <https://www.eff.org/issues/dmca>.

Every Noise at Once. "Every Noise at Once." Last accessed December 18, 2019. <http://everynoise.com/>.

Gneezy, Ayelet, Uri Gneezy, Gerhard Riener, and Leif D. Nelson. "Pay-what-you-want, identity, and self-signaling in markets." *Proceedings of the National Academy of Sciences* 109, no. 19 (2012): 7236-7240.

Google. "Google Trends: Bandcamp." Last accessed May 15, 2016. <http://www.google.com/trends/explore#q=bandcamp&cmpt=q>.

Google. "Google Trends: crowdfunding." Last accessed May 15, 2016. <http://www.google.com/trends/explore#q=crowdfunding&cmpt=q&tz=Etc%2FGMT%2B7>.

Google. "Google Trends: torrent + Spotify." Last accessed May 15, 2016. <https://www.google.com/trends/explore#cmpt=q&q=torrent,+spotify&geo=US>.

Hamilton, Kirk. "Amanda Palmer Asks Musicians To Play For Free, Pisses Off Musicians [Update]." *Kotaku*. September 13, 2012. <http://kotaku.com/5943112/amanda-palmer-asks-musicians-to-play-for-free-pisses-off-musicians>.

Hlavac, Marek. "stargazer: Well-Formatted Regression and Summary Statistics Tables." R package version 5.2.1. <https://CRAN.R-project.org/package=stargazer>.

Hogan, Marc. "How Radiohead Inspired Trent Reznor's Return to Major Labels." *SPIN*. October 15, 2012. <http://www.spin.com/2012/10/trent-reznor-david-byrne-major-labels-destroy-angels-radiohead/>.

- Internet Archive Way Back Machine. October 27, 2007.
<https://web.archive.org/web/20071027023646/http://niggytardust.com/saulwilliams/downloadinfo>.
- Kalia, Ajay. "'Music was better back then': When do we stop keeping up with popular music." *Skynet & Ebert*. April 22, 2015.
<https://skynetandebert.com/2015/04/22/music-was-better-back-then-when-do-we-stop-keeping-up-with-popular-music/>.
- Kickstarter. "Kickstarter." Kickstarter. Last accessed May 15, 2016.
<http://kickstarter.com>.
- Knopper, Steve. "Can Adele's '25' Save the Music Business?" *Rolling Stone*. November 5, 2015. <http://www.rollingstone.com/music/news/can-adeles-25-save-the-music-business-20151105>.
- Koenker, Roger, and Kevin F. Hallock. "Quantile regression." *Journal of economic perspectives* 15, no. 4 (2001): 143-156.
- Koenker, Roger, Stephen Portnoy, Pin Tian Ng, Achim Zeileis, Philip Grosjean, Cleve Moler, and Brian. D Ripley. "quantreg: Quantile Regression." <https://cran.r-project.org/web/packages/quantreg/index.html>.
- Kreps, Daniel. "Thom Yorke: Major Labels Are a 'Sinking Ship.'" *Rolling Stone*. June 9, 2010. <http://www.rollingstone.com/music/news/thom-yorke-major-labels-are-a-sinking-ship-20100609>.
- Lanier, Jaron. *Who owns the future?*. New York: Simon and Schuster. 2014.
- Lemley, Mark, David S. Levine, and David G. Post. "Don't Break the Internet," *Stanford Law Review*. 64 (2011): 34-38.
- Lessig, Lawrence. *Free Culture: The Nature and Future of Creativity*. New York: Penguin. 2005.
- Levine, Robert. *Free Ride*. New York: Anchor. 2011. 62-65.
- Lowery, David. "The Streaming Price Bible – Spotify, YouTube and What 1 Million Plays Means to You!" *The Trichordist*. November 12, 2014.
<https://thetrichordist.com/2014/11/12/the-streaming-price-bible-spotify-youtube-and-what-1-million-plays-means-to-you/>.
- Lyons, Linda. "Americans Want Music Students to Play On." *Gallup*. May 20, 2003. Last accessed December 29, 2019.
<http://www.gallup.com/poll/8434/americans-want-music-students-play.aspx>

- Magnatune. "Why Magnatune is not evil." Magnatune. Last accessed May 15, 2016. <https://magnatune.com/info/whynotevil>.
- Magnatune. "Magnatune." Magnatune. Last accessed May 15, 2016. magnatune.com.
- Margasek, Peter. "Ken Vandermark's Indefatigable Drive and Avant-Garde Vision." Bandcamp Daily. Bandcamp. June 5, 2017. Last accessed December 29, 2019. <https://daily.bandcamp.com/features/ken-vandermark-feature>.
- Masnick, Mike. "The Trent Reznor case study." MidemNet 2009 in video. February 3, 2009. https://www.youtube.com/watch?v=Njuo1puB1lg&ab_channel=MIDEM09.
- Masnick, Mike. "My MidemNet Presentation: Trent Reznor And The Formula For Future Music Business Models." Techdirt. February 5, 2009. <https://www.techdirt.com/articles/20090201/1408273588.shtml>.
- McDuling, John. "The music industry has hit its rock bottom." Quartz, April 14, 2015. <http://qz.com/383109/the-music-industry-has-hit-its-rock-bottom/>.
- Molnar-Szakacs, Istvan, and Katie Overy. "Music and mirror neurons: from motion to 'e'motion." *Social cognitive and affective neuroscience* 1, no. 3 (2006): 235-241.
- Nelson, Michael. "Amanda Palmer Now Paying Volunteer Musicians." Stereogum. September 19, 2012. <http://www.stereogum.com/1156841/amanda-palmer-now-paying-volunteer-musicians/wheres-the-beef/>.
- NIN.com. "Nine Inch Nails: Ghosts I-IV." Last accessed May 15, 2016. http://ghosts.nin.com/main/order_options.
- NIN.com. "Limited Edition." Last accessed May 15, 2016. http://ghosts.nin.com/images/popup_product_ultradeluxe.jpg.
- NIN.com. "Nine Inch Nails: Ghosts I-IV FAQ." Last accessed May 15, 2016. <http://ghosts.nin.com/main/faq>.
- NIN.com. "Nine Inch Nails The Slip." last accessed May 15, 2016. <http://dl.nin.com/theslip/signup>.
- Nine Inch Nails. "Head Like a Hole." *Pretty Hate Machine*. TVT. 1990.

- Nine Inch Nails Wiki, The. "Ghosts I-IV," The Nine Inch Nails Wiki. Last accessed May 15, 2016. http://www.nin.wiki/Ghosts_I%E2%80%93IV.
- Nine Inch Nails Wiki, The. "The Slip." The Nine Inch Nails Wiki. Last accessed May 15, 2016, http://www.nin.wiki/The_Slip.
- Nine Inch Nails Wiki, The. "Columbia Records." The Nine Inch Nails Wiki. Last accessed May 15, 2016. http://www.nin.wiki/Columbia_Records.
- Palmer, Amanda. "Theatre Is Evil: the album, art book and tour." Kickstarter. Last accessed May 15, 2016. <https://www.kickstarter.com/projects/amandapalmer/amanda-palmer-the-new-record-art-book-and-tour/description>.
- Palmer, Amanda. "Wanted: Horn-y and String-y Volunteers for the Grand Theft Orchestra Tour!!!!" Amanda Palmer. August 21, 2012. <http://blog.amandapalmer.net/20120821/>.
- Palmer, Amanda. "Who Killed Amanda Palmer." Bandcamp. Last accessed December 29, 2019. <https://amandapalmer.bandcamp.com/album/who-killed-amanda-palmer>.
- Pink Floyd. "Us and Them." The Dark Side of the Moon. Harvest. 1973.
- Pink Floyd. "Have a Cigar." Wish You Were Here. Capitol Records. 1975.
- Pirate Bay, The. "Nine Inch Nails - Ghosts I (2008)." The Pirate Bay. Last accessed May 15, 2016. [https://thepiratebay.se/torrent/4059158/Nine_Inch_Nails_-_Ghosts_I_\(2008\)](https://thepiratebay.se/torrent/4059158/Nine_Inch_Nails_-_Ghosts_I_(2008)).
- Radiohead. Hail to the Thief. Parlophone. 2003.
- Raiche, Gilles and David Maggis. "nFactors: Parallel Analysis and Non Graphical Solutions to the Cattell Scree Test." <https://cran.r-project.org/web/packages/nFactors/nFactors.pdf>.
- Regner, Tobias, and Javier A. Barria. "Do consumers pay voluntarily? The case of online music." *Journal of Economic Behavior & Organization* 71, no. 2 (2009): 395-406.
- Regner, Tobias. "Why consumers pay voluntarily: Evidence from online music." *Journal of Behavioral and Experimental Economics* 57 (2015): 205-214.

- Reznor, Trent. Interview with Cortney Harding, "Reznor: Only 18% Paid For 'Niggy Tardust.'" *Billboard*. January 1, 2008.
<http://www.billboard.com/articles/news/1046908/reznor-only-18-paid-for-niggy-tardust>.
- Reznor, Trent. Interview with David Dye. "Trent Reznor Releases 'Ghosts' for All," *NPR Music*. May 19, 2008.
<http://www.npr.org/templates/story/story.php?storyId=89493556>.
- Reznor, Trent. Interview with Jon Pareles. "Frustration and Fury: Take It. It's Free." *The New York Times*. June 8, 2008.
<http://www.nytimes.com/2008/06/08/arts/music/08pare.html>.
- Rogers, Benji. "Innovating with Music as a Digital Commodity." Panel discussion. The NAMM Show. Anaheim Convention Center. Anaheim, California. January 21, 2016.
- Rogers, Benji. Personal Conversation, February 12, 2016.
- Scherzinger, Martin. Personal Conversation, February 18, 2016.
- Schick, Steven. Personal Conversation, February 24, 2020.
- Singleton, Micah and Josh Lowensohn. "Apple's DRM lawsuit: 10 years in the making." *The Verge*. December 4, 2014.
<http://www.theverge.com/2014/12/4/7333609/apples-drm-lawsuit-10-years-in-the-making>.
- Sinnreich, Aram. *The Piracy Crusade*. Amherst: University of Massachusetts Press. 2013.
- Slate, Steven. Personal Conversation. January 23, 2016.
- Slate, Steven. "A3E Keynote: The Global Impact of Disruptive Music Technology." Panel discussion. The NAMM Show. Anaheim Convention Center. Anaheim, California. January 23, 2016.
- Spotify for Developers: WEB API. "Get an Artist." Last accessed December 18, 2019. <https://developer.spotify.com/documentation/web-api/reference/artists/get-artist/>.
- Spotify for Developers: WEB API. "Get Several Tracks." Last accessed December 18, 2019.
<https://developer.spotify.com/documentation/web-api/reference/tracks/get-several-tracks/>.

- Stevens, Sufjan. "Sufjan Stevens." Bandcamp. Last accessed May 15, 2016, <http://music.sufjan.com/>.
- Suzor, Nicolas. "Free-Riding, Cooperation, and 'Peaceful Revolutions' in Copyright," *Harvard Journal of Law and Technology*. 28 (2014).
- Sykes, Gresham M., and David Matza. "Techniques of neutralization: A theory of delinquency." *American sociological review* 22, no. 6 (1957): 664-670.
- Taleb, Nassim Nicholas. *The Black Swan*. Random House. 2013.
- TheTarget3. "Pirates of Reddit, why, what and how do you pirate?" Reddit. Last accessed May 14, 2016. https://www.reddit.com/r/AskReddit/comments/3777ro/pirates_of_reddit_why_what_and_how_do_you_pirate/.
- Tierney, John and Roy Baumeister, *Willpower*. New York: Penguin, 2011.
- Tony49UK. "[Question] Reasons piracy is so prevalent in today's society?" Reddit. Last accessed May 14, 2016. https://www.reddit.com/r/Piracy/comments/3l3xj3/question_reasons_piracy_is_so_prevalent_in_todays/.
- Tower Records Project. "Tower Records Project." Last accessed May 14, 2016. <http://towerrecordsproject.org>.
- Tyrangiel, Josh. "Radiohead Says: Pay What You Want." *Time*. October 1, 2007. <http://content.time.com/time/arts/article/0,8599,1666973,00.html>.
- U.S. Census Bureau, "Census 2010." Last accessed December 29, 2019. <http://census.gov>.
- Virgin. "Virgin Megastore." Last accessed May 14, 2016. <https://www.virgin.com/company/virgin-megastore>.
- Yorke, Thom. Interview with Josh Tyrangiel. "Radiohead Says: Pay What You Want." *Time*. October 1, 2007. <http://content.time.com/time/arts/article/0,8599,1666973,00.html>.
- Yorke, Thom. *Tomorrow's Modern Boxes*. Last accessed May 15, 2016, <https://thomyorke.bandcamp.com/>.
- West, Kanye. "Life of Pablo." GOOD Music. 2016.

Wickham, Hadley. "httr: Tools for Working with URLs and HTTP." <https://cran.r-project.org/web/packages/httr/index.html>.

Wikipedia. "The Inevitable Rise and Liberation of NiggyTardust!" Wikipedia. Last accessed May 15, 2016. https://en.wikipedia.org/wiki/The_Inevitable_Rise_and_Liberation_of_NiggyTardust!.