

RECONNECTING THE MUSIC-MAKING EXPERIENCE: AVENUES FOR
SUSTAINABILITY AND MUSICAL ARTISTRY IN ACADEMIC PERCUSSION

By

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ABSTRACT

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This thesis draws upon the ideas of reconnection, sustainability, and musical artistry in order to show how a consideration of the environmental and ethical impacts of making and consuming musical instruments can lead to innovative musical products and meaningful connections between the musicians who use and make them. Since impacts of globalization arguably disconnect producers, consumers, and natural resources, there is a general lack of consideration by consumers for the processes and materials required to craft musical instruments. Fostering reconnections between these actors through more active consumer participation in production processes is one way that disconnection can be alleviated, allowing for a more sustainable music-making experience.

This thesis discusses three such avenues in order to show the ways reconnection between the actors of these music-making experiences can yield more sustainable cultures and artistically rich musical products. These avenues include small-scale local instrument craftsmanship, musicians that actively participate in the making of their instruments, and the usage of more sustainable and unconventional materials on musical instruments. Data are drawn from ethnographic research with Michigan-based percussionists and instrument makers in the form of semi-structured, in-depth interviews and participant observation. More connected, collaborative, and artistic relationships can result between the producers, consumers, and natural materials of musical instruments when musicians reconnect in these ways.

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To my parents who among countless other things taught me
what it truly meant to do it yourself.

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INTRODUCTION

In today's market economy, sustainability is an idea of increasing importance for producers and consumers. Demand for consumer products is often not only the result of their price and functionality, but also in the ways they are produced; this is particularly pronounced in the market for food. At the grocery store, for example, labels such as "organic," "fresh," and "hormone-free" demonstrate the demand for products that are produced in seemingly more "natural" ways. Labels such as "cage free," "grass fed," and "fair trade" show a developing concern for the ethics involved with the process of getting a product to the store shelf. In addition, place-based labels such as "local" and "American-made" show an increasing sensitivity to geographic distances between production and consumption. Such concern can also be seen in areas such as technology, apparel, and automobiles.

Similarly, the market for musical instruments has begun to incorporate such ideas of sustainability. Among these considerations, the usage of rare and endangered natural resources for their production has received the most attention. For example, authors have discussed several examples such as the scarcity of Brazilian pernambuco for violin bows¹ and guitar woods used by American luthiers, to name only two.² The case of the guitar has received some mainstream attention as well after the two federal seizures of Malagasy ebony and rosewood from Gibson Guitars in 2009 and 2011 due to their

¹ Russ Rymer, "Saving the Music Tree," *Smithsonian Magazine* 35 (2004): 52-63.

² John Curtis, "Sustainability: An Issue Confronting Luthiers," *American Lutherie: The Quarterly Journal of the Guild of American Luthiers* 33 (1993): 40-45. For a more recent discussion see: *Musicwood*, directed by Maxine Trump, Helpman Productions, 2013, documentary.

alleged violation of law in international trade.³ In each case, the consumption of such natural resources have wide-ranging impacts on musicians, instrument makers, indigenous populations, and the environment itself.

Sustainability in general has most commonly been defined as a tripartite concept that deals with negotiations not only in relation to the environment, but also with ethics, and economics.⁴ The environment is often closely associated with the idea of sustainability, yet ethics and economics play equally important roles in our understanding of the term. Ethics—which deals with the production processes and production-consumption chains involved in the commodification of natural resources—deal with where, how, and by whom products are made and considers embedded inequalities or power dynamics that might exist between producers and consumers. Economics considers the pricing of goods or natural resources in relation to the extent to which they are environmentally and ethically considerate.

This tripartite conceptualization of sustainability can help to reveal sensitive environmental, ethical, and economic concerns within the market for musical instruments. In this study it will be applied to the musical instruments used by the academic music community, specifically academic percussion.⁵ In this community,

³ James McKinley, “Famed Guitar Maker Raided by Federal Agents,” *ArtsBeat*, August 31, 2011, <http://artsbeat.blogs.nytimes.com/2011/08/31/famed-guitar-maker-raided-by-federal-agents/>.

⁴ Robin Morris Collin and Robert W. Collin, *Encyclopedia of Sustainability* (Santa Barbara, CA: Greenwood Press, 2010).

⁵ I use the terms “academic music” and “academic percussion” to refer to any higher education setting of Western classical percussion (collegiate percussion programs and conservatories). The instruments used in these settings, and their surrounding issues, are similar and may be compared to those found in other settings (professional ensembles, community ensembles, drum corps, middle schools, high schools). However, the focus of this thesis is higher education due to informant populations.

musical ensembles contain large inventories of percussion instruments, yet musicians rarely know much about their origins, specifically in relation to the natural resources and production processes necessary for their construction. Additionally, the production processes of our globalized political economy often involve the outsourcing of labor and the allocation of international, and often rare, natural resources.⁶ Thus, the actors of this music-making experience (makers, players, and natural resources of musical instruments) are disconnected from one another, resulting in a lack of awareness, understanding, and appreciation.

Fostering reconnection between these actors, then, can lead to more sustainable music cultures,⁷ as musicians are able to develop stronger understandings for their musical instruments, and the people, labor, and natural resources required to make them. Additionally, the direct participation of musicians in the making of their instruments can lead to embodied experiences, positive emotional investment, and relational learning, further intensifying the potential of reconnection.⁸ “Reconnection” is a term that is used largely in the discourse and practice of alternative agriculture. In this setting consumers are increasingly reconnecting with more local and sustainable food systems (i.e. farmers’ markets, urban/home gardening, and local sourcing of food) over more global systems of food production.⁹ In other words, reconnection is often contextualized through a more

⁶ Harvey, David. *A Brief History of Neoliberalism*. Oxford [u.a.]: Oxford Univ. Press, 2009.

⁷ Aaron S. Allen and Laurence Libin, “Sustainability,” *Grove Dictionary of Musical Instruments*, (New York: Oxford University Press, 2014).

⁸ Tom Anderson and Anniina Suominen Guyas, “Earth Education, Interbeing, and Deep Ecology,” *Studies in Art Education* 53, no. 3 (2012): 234-238.

⁹ Sage, Colin, *Environment and Food*, (New York: Routledge, 2011).

active consumer participation in resource-to-product production processes.¹⁰ Similarly, this study examines three avenues for reconnection within the academic percussion music-making experience that all involve more direct consumer participation in the production processes of musical instruments: small-scale local instrument craftsmanship, consumer participation in instrument craftsmanship, and making instruments from locally sourced natural resources. Reconnection between consumers, makers, production processes, and natural resources allows musicians to gain both understanding and appreciation for their musical instruments.

The ecomusicological¹¹ conceptualization of sustainability might provide, however, a more appropriate framework than the tripartite model since it incorporates a fourth component of “aesthetics.” Known as the “four-legged stool,” this model suggests that not only does sustainability require consideration of the environment, ethics, and economics, but it also requires sustainable efforts and products that are aesthetically pleasing.¹² Musical settings that have reconnected lead to environmental, ethical, and economic benefits, but they also result in unique conceptions of musical artistry. This thesis examines the musical artistry of such settings in relation to the ways instrument craftsmanship, music composition, and using more sustainable and unconventional

¹⁰ Emilio F. Moran, *People and Nature: An Introduction to Human Ecological Relations*, (Malden: Blackwell Pub., 2006); Hank Renting and Markus Schermer, “Building Food Democracy: Exploring Civic Food Networks and Newly Emerging Forms of Food Citizenship,” *International Journal of Sociology of Agriculture and Food* 19 (2012): 289-307.

¹¹ Ecomusicology is an emerging field concerned with the study of music, culture, and nature. Some discussions within this discipline include natural soundscapes, music and environmental activism, and the ecology of musical instruments.

¹² Aaron Allen, “Sustainability and Sound: Ecomusicology Inside and Outside the Academy,” *Music and Politics* 7, no. 2 (2014): 10-11.

materials to make musical instruments both require and result in creativity and innovation.

Chapter 1 draws upon the ideas of disconnection, reconnection, and sustainability to discuss small-scale local marimba craftsmanship in the academic percussion instrument market as an alternative option to more large-scale manufacturers. In this chapter I argue that small-scale local craftsmanship can foster reconnections between the actors of the music-making experience because of the more-direct relationships between musicians, instrument makers, the natural resources that comprise musical instruments, and the musical instruments themselves. Additionally, small-scale local craftsmanship can often yield innovative and artistic musical instruments that transcend certain standardizations associated with more large-scale companies. Data is drawn from semi-structured interviews and participatory observation with both small-scale local marimba craftsmen and their consumers in order to show the ways reconnection between the actors of this music-making experience can lead to artistic and innovative musical instruments.

Chapter 2 examines the ways in which reconnection between the actors of the music-making experience is possible when musicians have a hand in making their own musical instruments. Data are drawn from an academic percussion musical setting where the musicians composed for and performed on the instruments they made themselves. In this chapter I argue that settings that require consumers to construct their own musical instruments serve as potential sites of reconnection between musicians, the musical instruments they make, the natural resources that comprise those instruments, and the labor required to produce them. When musicians reconnect in these ways, they are able to understand and appreciate their musical instruments in new and meaningful ways. This

can allow for heightened efforts in instrument care and maintenance; it can also allow for a greater sensitivity to environmental and ethical issues surrounding musical instruments.

In Chapter 3 I argue that the addition of instrument craftsmanship to traditional curricula for academic music enhances the musical possibilities and educational experience available to music students. When musical settings incorporate craftsmanship, musicians can produce instruments with custom designs and with unconventional materials. Both of these aspects can uniquely inform the creative process of composers. Therefore, the incorporation of craftsmanship into the music-making experience can lead to new musical possibilities that further enhance the educational and intellectual potential of academic music curricula. Craftsmanship used in these ways is not just a support for music making, but an area that can actively inform it.

Chapter 4 examines the sustainability of the marimba in light of its longstanding association with endangered natural resources. The traditional resource used in the production of marimba bars is the increasingly rare and endangered rosewood.¹³ Additionally, rosewood's incorporation in the production of any American marimba requires that the resource be acquired internationally, which globalizes the production chain and greatly enlarges the carbon footprint of the production process. The consumption of rosewood for the making of marimbas and xylophones continues today since the sonic abilities of rosewood have not been matched by the material alternatives presented by the percussion community. However, these aesthetic preferences are in part the product of musicians and listeners being socially and culturally conditioned to value

¹³ Omar Carmenates, "Honduras Rosewood: Its Endangerment and Subsequent Impact on the Percussion Industry," (PhD diss., Florida State University, 2009) <http://diginole.lib.fsu.edu/etd/4194>.

the idiomatic sounds of traditional materials.¹⁴ Musicians and listeners, then, can learn to value alternative materials of more sustainably made instruments if their sound aesthetics are cultivated in their own musical contexts. Chapter 4 argues that the unconventional sound aesthetics of more sustainably made instruments can produce unique musical opportunities. Additionally, music that is written for and performed on more sustainably made instruments can be valued not only musically, but also in relation to the ways the instruments are environmentally and ethically considerate.

This project explores crosscutting themes of sustainability, reconnection, and musical artistry through a multi-part case study of musicians that have directly participated in the making of their instruments. Both more sustainable music cultures and unique conceptions of musical artistry are possible when the actors of the music-making experience reconnect.

¹⁴ Aaron S. Allen, “‘Fatto Di Fiemme’: Stradivari’s Violins and the Musical Trees of the Paneveggio,” *Invaluable Trees: Cultures of Nature, 1660-1830*, edited by Laura Auricchio, Elizabeth Heckendorn Cook, and Giulia Pacini, 314-315, Oxford: Voltaire Foundation, 2012.

CHAPTER 1

RECONNECTING THE MUSIC-MAKING EXPERIENCE: SUPPORTING SMALL-SCALE LOCAL INSTRUMENT CRAFTSMANSHIP IN THE ACADEMIC PERCUSSION COMMUNITY

INTRODUCTION

In this chapter, I propose a model for musical instrument manufacturing that draws upon the ideas of disconnection, reconnection, and sustainability in order to show how composers, performers, and instrument makers might work together more effectively. Since effects of globalization arguably disconnect producers, consumers, and natural resources,¹ there is a general lack of consideration by consumers for the processes and time required to craft musical instruments. Fostering reconnections between these actors through more active consumer participation in resource-to-product production processes is one way that disconnection between them can be alleviated,² allowing for a more ethically sound, environmentally considerate, and overall more sustainable music-making experience. This chapter will use this model to discuss small-scale local marimba craftsmanship in the academic percussion instrument market in order to show ways reconnection between the actors of this setting can yield a more sustainable culture.

¹ David Harvey, *A Brief History of Neoliberalism*, (Oxford: Oxford University Press, 2009); Paul Robbins, *Political ecology: a critical introduction*, (Malden, MA: Blackwell Pub., 2004).

² Emilio F. Moran, *People and Nature: An Introduction to Human Ecological Relations*, (Malden: Blackwell Pub., 2006); Hank Renting and Markus Schermer, "Building Food Democracy: Exploring Civic Food Networks and Newly Emerging Forms of Food Citizenship," *International Journal of Sociology of Agriculture and Food* 19 (2012): 289-307.

In the academic percussion community, musical ensembles usually contain large inventories of percussion instruments. Yet, musicians rarely know much about these instruments, specifically in relation to the natural resources of origin, the ecological and human communities from which they are extracted, and the subsequent production processes they undergo—not to mention that their construction often involves potentially exploitative outsourced labor and fossil fuel-dependent global production-consumption chains. Consequently, the varied actors of the music-making experience (e.g. natural resources, growers/harvesters, local communities, instrument producers, and musicians) are literally and figuratively disconnected from one another, resulting in obscured awareness and understanding of socio-ecological impacts of the music community.

A particularly intriguing example of an instrument that faces sustainability challenges is the marimba, due to its extensive use in the academic percussion community (such as by middle and high school band programs, higher education conservatories and music schools, soloists, professional ensembles, drum corps, and community bands). The marimba is, then, a musical object with meaning that uniquely serves the needs of each of these consumer circumstances, allowing for musical and artistic expression, economic stability, early music education, and recreation.³ Regardless of the circumstance, most marimbas used by these communities are constructed by large-scale percussion instrument corporations that are often purchased with the click of a button on one of the many percussion instrument distribution company websites. After

³ This idea is informed by: Kevin Dawe, “People, Objects, Meaning: Recent Work on the Study and Collection of Musical Instruments,” *The Galpin Society Journal* 54 (2001): 219-232; Eliot Bates, “The Social Life of Musical Instruments,” *Ethnomusicology* 56, no. 3 (2012): 363-395.

making a purchase, marimbas usually arrive at one's doorstep in boxes with no effort required from the consumer to construct the instrument other than basic assembly. As a musical object so integral to the identities, livelihoods, and expressions of musicians, I argue that the marimba-musician relationship is inherently complex and provides a compelling example of how manufacturers and musicians might work together more closely.

Yet making these reconnections within the academic percussion community is far from simple. The intent here is not to place blame on any individual or group of people since disconnection is a systematic and large-scale issue, widespread far beyond the music community. Current and historical examples of this include the production-consumption chains of electronic devices,⁴ food,⁵ and clothing.⁶ In other words, actors within the marimba production-consumption chain are doing exactly what is expected of them to make it in life as performers, makers, distributors, and educators. Jeff Todd Titon describes a similar setting of "economic rationality" when coal miners sympathize with environmentally destructive practices of mountain top removal.⁷ While acknowledging these complexities, however, there are still important entry points and new avenues for

⁴ Charles Duhigg and David Barboza, "Apple's iPad and the Human Costs for Workers in China," *The New York Times*, January 25, 2012.

<http://www.nytimes.com/2012/01/26/business/ieconomy-apples-ipad-and-the-human-costs-for-workers-in-china.html>.

⁵ Moya Kneafsey, Rosie Cox, Lewis Holloway, Elizabeth Dowler, Laura Venn, and Helena Tuomainen, *Reconnecting Consumers, Producers, and Food*, (Oxford: Berg, 2008).

⁶ Stanley Chapman, ed, *The Textile Industries*, (London: I. B. Tauris, 1997).

⁷ Aaron Allen, Denise Von Glahn, and Jeff Todd Titon, "Sustainability and Sound: Ecomusicology Inside and Outside the Academy," *Music and Politics* 8, no. 2 (2014): 20-21.

reconnection that the academic percussion community might take to begin working toward more sustainable music cultures.⁸

This chapter explores one such avenue for reconnection in the academic percussion community: a more active consumer participation in marimba production processes via the support of small-scale local marimba craftsmanship. In the sections that follow, I will discuss small-scale local marimba craftsmanship as a consumer option that fosters reconnections between, percussionists, percussion instrument manufacturers, and the instruments they build. In order to better understand the potential of these connections, I conducted interviews with consumers who purchased instruments from small-scale local marimba craftsmen. Consumers were asked about their motivations for selecting the specific maker of their instrument, as well as their experiences and interactions working with them.

After a discussion of the major themes of these interviews, I consider the fact that more direct relationships between the producers and consumers of the marimba are not always enough motivation for consumers to support small-scale local craftsmanship over other large-scale consumer options. In such instances, what other incentives might exist for consumers to choose small-scale local makers? In the second half of this chapter I complement the aforementioned interviews with ethnographic research with one small-scale local marimba craftsman—Matt Kazmierski and his Michigan-based marimba company *Planet Marimba*—to suggest that artistry and instrument innovations are also important benefits that motivate consumers to consider these small-scale options.

⁸ Aaron Allen and Laurence Libin, “Ecomusicology,” in *The Grove Dictionary of American Music*, 2nd ed., edited by Charles Hiroshi Garrett, (New York: Oxford University Press, 2014).

Overall, this chapter advocates for the support of small-scale local craftsmanship in marimba production; such changes in consumption patterns coupled with new understandings and relationships can foster reconnection between the actors of the music-making experience and offer new artistic and innovative possibilities. Additionally, this chapter contributes to the field of ecomusicology by not only presenting one of the first known ecomusicological studies of the marimba, but also suggesting that in such disconnected settings, reconnection is a necessary prerequisite to sustainability. It is possible that this idea might also apply to other settings of musical instrument production that have become similarly disconnected.

PRODUCER-CONSUMER RECONNECTION

Connections and relationships

Overall, interview respondents expressed appreciation for closer connections to the maker of their instrument. For example, Michigan-based percussionist Kelly Kraye⁹ was asked about her motivations for selecting *Planet Marimba* over other options in the market today:

Most of it [was] just to be able to talk to someone that is taking the time to hear every bar, to hear everything about the bar, to construct something for me... [it] was more intriguing than anything, and to me better than calling up a factory and going, “Hey, I need a marimba,” and then they’re like, “Cool, we have 70 over here!” ... And just seeing Matt and his family; going up there to see the workshop, going up there to hang out with them. Those are pretty much all the reasons. I feel like I’ve kind of gained another family with Matt and Penny too.¹⁰

Kelly articulates an appreciation for the connection and understanding between herself, Matt, and Matt’s family. This also demonstrates an appreciation for Matt’s understanding of and skills working with the natural resources that are repurposed into her future

⁹ Pseudonyms are used for all consumer participants.

¹⁰ Kelly Kraye, interview by author, Michigan, December 3, 2014.

instrument. Kelly values these connections and understandings in relation to alternative consumer options that might not allow them to exist in the same ways.

Consumers of other small-scale local craftsmen have articulated similar connections. Maryland-based percussionist Brocke Nelson was asked about his experience purchasing an instrument from Matt Coe and his company *Coe Percussion* in Tallahassee, Florida. Brocke and Coe exchanged emails and phone calls over the course of several months discussing the nature of Coe's craftsmanship, specifics related to Brocke's instrument, and payment and deadline details. Upon picking up his instrument, Brocke was actually able to physically visit Coe's shop:

That was actually a really cool part of the process. You know, he invited us over. He runs everything out of his garage. Like the bottom floor of his house is just a garage woodshop place. And it's just him, it might be more now, because he's kind of gaining some clamor and all in the last few years... But when I went down there it was just him doing everything on his own. And yea, it was really cool just to see one dude in his house making these pretty cool instruments. I felt like I'm getting a very personal kind of instrument. Because, like I said, one dude does it all... You can tell the amount of detail and care that this guy puts into everything he does. You can see that in the instrument and I could see that meeting him and stuff as well.¹¹

Brian Peters, another Maryland-based percussionist, was also able to visit the maker of his instrument when he picked up the finished product from Doug DeMorrow and his company *DeMorrow Instruments* in Arkadelphia, Arkansas:

... So we went down there to pick it up, ... and [we] asked if we could visit the shop and kind of see what he does... And, another thing that I really like is that all of his family kind of helps with his marimba making. Like I think his daughter does the bars... and his son does the resonators, and then him and a lot of his friends do the frame. So they kind of all work together as a family... I thought it was really unique that I had the opportunity to do that. Just to see like who makes the instrument, and what they are all about. You know, in terms of their craft.¹²

¹¹ Brocke Nelson, phone interview by author, Maryland, December 6, 2014.

¹² Brian Peters, phone interview by author, Maryland, December 6 2014.

Both Brocke and Brian express sentiments of connection between both the maker of their instrument and their instrument itself. However, here they also express an appreciation for understandings related to the production processes and labor required for their instrument's construction.

The support of small-scale local craftsmanship, then, might be considered a transformational experience.¹³ By purchasing marimbas from small-scale local makers, consumers are able to reconnect in terms of knowing their instrument's maker, developing understandings for instrument production processes, and interacting with the natural resources that comprise musical instruments. For Kelly, Brocke, and Brian, these experiences served as a source of value that could only be obtained by consuming specifically in these ways. If consumers continue to desire the benefits associated with an initial experience of small-scale local craftsmanship patronage, then a consumer transformation has occurred. Transformed consumers in this sense might be considered sensitive to both the sound of the instrument they intend to buy as well as what it takes to make it.

These initial connections can also lay the groundwork for longer-term, enduring ones. For example, two of my informants articulated that their relationship with their craftsperson had the potential to be ongoing. Kelly Krayner values her relationship with Matt Kazmierski because of her easy access to repair work when necessary:

... You know, if you break a bar... maybe Matt can repair it, maybe Matt has another bar, that, you know, probably won't cost that much. Or if a resonator

¹³ This idea is informed by: Yvette Reisinger, *Transformational tourism: Tourist perspectives*, (Cambridge, MA: CABI, 2013); Michael E. Zimmerman, "Quantum Theory, Intrinsic Value, and Panentheism," *Environment Ethics* 10, no. 1 (1988): 3-30.

breaks or gets scratched... he was telling me that its just brushed aluminum or polished... so if it gets scratched then just polish it back and its fine. So there's the ability to not be afraid that life is going to happen. Which, you know, is nice reassurance to know that that's there.¹⁴

Additionally, a major selling point for Brocke Nelson when buying an instrument from Matt Coe was that he was able to purchase a low-cost practice instrument that could be upgraded at any time:

... It was \$3000 for what I purchased. But the only thing that separates it from a full fledge instrument is the lack of resonators. I think at the time I purchased, which was around four years ago, it was like \$5,000 for him to build the resonators. But he said he could do it ... at any time. I heard a lot of people actually do that.¹⁵

These enduring connections related to instrument upgrading and repair are some of many results of the aforementioned social connections associated with small-scale local craftsmanship.

Another result of these same social connections is an increased understanding of and willingness to negotiate for a product that is appropriate for a given consumer's finances, yielding instruments that uniquely adhere to an individual's budget. For example, all of my informants mentioned that a major determining factor for choosing the maker of their instrument was related to the affordable prices or options they were offered. Michigan-based percussionist Astrid Lam had this to say about her motivations behind choosing Matt Kazmierski as the maker of her instrument:

I wanted a marimba, but the large-company marimbas are really expensive, and Matt has offered me a really good deal. And also I can choose whatever height or what kind of wood I want [for the frame].¹⁶

¹⁴ Kraye, interview.

¹⁵ Nelson, phone interview.

¹⁶ Astrid Lam, phone interview by author, Michigan, December 5, 2014.

In Astrid's experience, not only has she and Matt successfully negotiated a price for an instrument that can match her budget, but she is still able to take part in specialized elements of its design.

Critical considerations

The positive aspects of reconnection aside, it is also necessary to acknowledge the ways that small-scale local craftsmanship might fall short in terms of sustainability. From an environmental perspective the production of marimbas often requires the consumption of the increasingly rare and endangered rosewood for the production of its bars.¹⁷

Additionally, rosewood's incorporation in the production of any American marimba requires that the resource be acquired internationally, which globalizes the production chain and greatly enlarges the carbon footprint of the production process. In other words, small-scale local craftsmen incorporate these materials on their products just like large companies, meaning that they too are confronting issues of sustainability associated with the woods they use.

These issues have mainly begun to be addressed through bar material substitutions for rosewood and its other international counterpart, padauk. The most common of these substitutions are synthetic bar material options offered by large-scale percussion instrument companies. Though synthetic options reduce the amount of instruments that are produced with rare woods, the same disconnected production processes are at play in that consumers of these instruments are removed from their production. Also, synthetic options are generally inexpensive, and these financial

¹⁷ Omar Carmenates, "Honduras Rosewood: Its Endangerment and Subsequent Impact on the Percussion Industry," (PhD diss., Florida State University, 2009), accessed June 30, 2013, <http://diginole.lib.fsu.edu/etd/4194>.

considerations seem to be motivating producers to make and consumers to purchase instruments made with these materials rather than environmental ones

A second setting of bar material substitution can be seen in my own work as an instrument craftsman. My short film entitled *The Michigandered Marimba* documents the making of a marimba comprised of all-Michigan woods and recycled resources.¹⁸ After testing six domestic wood options, Michigan sassafras was chosen as the wood for the bars on this instrument. Also, my most recent work with the Michigan-based sextet Los Banditos experiments with glass as a bar material substitute. These two examples of bar material substitutions are by no means the first or only attempts at using domestic woods and glass for bar materials. A simple search on YouTube will reveal a small number of people from around the world that have done their own experimentations with these same materials and beyond. However, alternative materials are often not valued or integrated by our larger percussion community in the same ways as the more traditional and environmentally problematic bar materials. This resistance to more sustainable bar material options must be overcome in order to achieve more sustainable music cultures.¹⁹

A second aspect of small-scale local craftsmanship that could be considered less-than sustainable is the power tools these craftsmen use. In competing with the production speeds and slick designs of large-scale companies, small-scale local craftsmen of the marimba, too, must incorporate certain power tools that might have similar disconnected histories as the percussion instruments being discussed in this chapter. The reliance of the marimba craft community as a whole on such tools inevitably adds to these ideas of

¹⁸ *The Michigandered Marimba*, directed by Alex Smith, Michigan State University, 2013, documentary, <https://vimeo.com/80535177>.

¹⁹ This topic will be discussed in more depth in Chapter 4.

disconnection between the actors of the music-making experience (e.g. when considering tool makers and natural resources for tools as actors). It also complicates the carbon footprint of marimba production in relation to the types and amounts of power required to run them. The incorporation of rosewood for marimba bars and the usage of power tools for instrument production both present similar structural and systematic issues of sustainability within the larger marimba craft community.

ARTISTRY AND INNOVATION

Despite these sustainability issues facing the marimba craft community as a whole, the elements of reconnection associated with small-scale local craftsmanship remain significant. However, though reconnection is a consequence of supporting small-scale local craftsmanship, and for some consumers an actual motivation for buying from a particular maker, there are other reasons percussionists might be inspired to support these makers: artistry and innovation.

Small-scale local craftsmen offer products that transcend instrument standardizations associated with large-scale craftsmanship in innovative and artistic ways. For example, Matt Kazmierski's dedication to self-sufficient production processes allows him to transcend personal limitations—such as tool availability and a lack of metalworking skill sets—with an innovative, artistic voice. Relying fully on his trade as an experienced wood craftsman and thus not incorporating any metals, Matt's notable innovations include all-wooden frames, all-wooden posts, and extended range. Emphasizing the innovative and artistic aspects of small-scale local marimba craftsmen such as Matt Kazmierski may serve as an incentive for consumers to choose such makers, allowing reconnections to happen more broadly.

Figure 1: Planet Marimba Frame



Matt's artistic voice is most noticeably and publicly known for his mission-style and shaker-furniture frame designs. Constructed from local Michigan wood, this aspect of Matt's trade makes his product distinct and easily recognized (Figure 1). Even more interesting is that each of these designs is the result of negotiations between the consumer's aesthetic preferences and Matt's offerings as a wood craftsman. For example, Kelly Kraye had this to say about her participation in designing her instruments' frame:

... He just asked me what I wanted it to look like: What color? What was I looking for in the frame? And I honestly had no idea because we are so used to the generic looking marimbas... I wanted a light color wood so that the bars would come out, and I gave him that information and I told him, "You know more about wood than I do, so do what you think looks best..." So he made it out of oak and the texture of the oak is just so cool. And it smells good.²⁰

Beyond his frames' apparent aesthetic value, they are also functional and practical for a performing artist. The only metal hardware on Matt's marimbas is a few basic screws, nuts, and bolts, eliminating common rattle sounds that often result from marimba frames

²⁰ Kraye, interview.

with metal-on-metal contact. Matt's all-wooden frame on his personal five-octave marimba he constructed twelve years ago remains rattle-free.

Figure 2: All-Wooden Posts



Another area of artistry and innovation in Matt's craftsmanship are his all-wooden posts. Posts are small pieces, typically made from metal, that usually reside between bars; they support a cord that threads the bars allowing the bars to resonate. While Matt sometimes orders standard metal posts upon the special request of his customers, he primarily relies on his abilities as a wood craftsman. His all-wooden posts support the marimba bars from the underside, rather than in between, reducing the total size of the instrument by over a foot (Figure 2). Matt has received mixed opinions with regards to his all-wooden posts. Some of his customers and colleagues have expressed concern that reducing the size by an entire foot makes it difficult to translate repertoire to other

marimbas.²¹ Kelly Kraye, on the other hand, has had a much different experience with Matt's all-wooden posts:

... Just how he puts the bars on the posts instead of in between posts so that makes them closer... it's a slight difference, but its enough to make it much easier to play the extended ranges of things. Just the ability to play octaves comfortably in my left hand, because when you get to [wide-bar instruments], there's no way I can play an octave. I have always played in pain trying to over extend myself in difficult repertoire. Now, I can play all this rep without pain. I'm more centered. I don't have to over extend my arms and jump around like a maniac. Who knew all those years of pain could have been fixed by playing an instrument that actually was made for me. I could probably play *Merlin* now, and other pieces like it.²²

For Kelly, reducing instrument size is a significant innovation, as wider intervals are often difficult to play. Matt's consolidation of space facilitates the performance of such intervals, opening the door for new performance techniques, note combinations, and repertoire.

Figure 3: Matt Kazmierski and the Concert Bass Marimba



²¹ Matt Kazmierski and Penny Kazmierski, interview by author, Plymouth, MI, November 12, 2012.

²² Kraye, interview.

Figure 4: Six and One-Third-Octave Marimba



Extended range is a final way that Matt's trade is innovative and artistic. In today's market for marimbas the most common instrument size is five octaves (C2-C7). Yet, in Matt's history as a maker, he has made some of the lowest and most unconventional instruments in the world including his Concert Bass Marimba that spans to the depth of A0, the lowest note on the piano; this instrument is so large that the performer must stand on a stool in order to play it (Figure 3). However, aside from this astounding feat of craftsmanship, Matt most often extends the range of his instruments by twelve notes in the upper register, producing a six-octave marimba/xylophone hybrid (C2-C8) (Figure 4). Not only does this potentially eliminate the need for two separate instruments (marimba and xylophone), but, according to Astrid Lam, Matt's innovation also allows for new conceptions of artistry in relation to composition and performance:

Matt's marimba combines a regular marimba with a xylophone, so that will be an interesting point for composers to think about. For example, if you're going to

switch from a marimba to a xylophone, you have to give the performers time, but if we use Matt's marimba we can easily play both.²³

Matt Kazmierski is one example of an artistic and innovative small-scale local craftsman, but artistry and innovation are certainly not limited to his trade alone. For example, both Brocke and Brian articulated sentiments of uniqueness and aesthetic value associated with the instruments they bought from Matt Coe and Doug DeMorrow. These sentiments have and will continue to influence the decisions of consumers to consider small-scale local alternatives. Making the artistic and innovative aspects of small-scale local craftsmen better known to the percussion community might boost their consumer base, leading to more reconnections between the actors of the music-making experience.

CONCLUSION

As globalized markets increasingly delink production from consumption,²⁴ the academic percussion community should be aware of social, economic, and environmental consequences in the making of percussion instruments. Specifically, strides toward more sustainable music cultures²⁵ can be made in the production of marimbas by first fostering reconnections between the actors of this music-making experience. In this chapter I have explored a few types of reconnections being made by supporting small-scale local marimba craftsmanship through interviews with consumers who have employed this option.

Though this form of production is not free from issues of sustainability concerning the incorporated natural resources²⁶ and tool usage, the elements of

²³ Lam, interview

²⁴ Harvey, *Neoliberalism*; Robbins, *Political Ecology*.

²⁵ Allen and Libin, "Sustainability."

²⁶ Carmenates, "Honduras Rosewood."

reconnection associated with small-scale local craftsmanship remain significant.

Supporting small-scale local craftsmanship permits more direct producer-consumer relationships; it also allows for more interaction and collaboration between producers and consumers in the instrument design process. These reconnections help to create a strong cultural foundation for sustainability, and issues of materials and tools can also be addressed as the community continues to consider its ethical and ecological impact.

As can be seen in the work of Matt Kazmierski and his company *Planet Marimba*, small-scale local craftsmanship can be an artistic and innovative form of marimba production, transcending instrument craft standardizations associated with large-scale production. Such elements of artistry and innovation can serve as a promotional tool for small-scale local craftsmanship. A larger consumer base may result if these aspects are emphasized to the percussion community. This may allow for reconnections to occur on a more frequent basis.

Moving forward, this discussion of reconnection and small-scale local marimba craftsmanship poses ongoing questions about what other forms of reconnection might exist in the academic percussion community: How might reconnections between human and non-human actors, by way of incorporating more environmentally considerate natural resources and more sustainable production processes, produce alternative conceptions of sustainability for academic percussionists? How might a direct consumer participation in instrument production processes also be influential? Small-scale local craftsmanship presents one avenue for reconnection in the academic percussion community, but other avenues should be investigated as we strive for holistic sustainability.

CHAPTER 2

RECONNECTING THE MUSIC-MAKING EXPERIENCE THROUGH MUSICIAN EFFORTS IN CRAFTSMANSHIP

INTRODUCTION

This chapter examines the ways in which reconnection between the actors of the music-making experience is possible when musicians have a hand in making their musical instruments. In doing so I apply a model that draws upon the ideas of disconnection, reconnection, and sustainability to musical settings that incorporate instrument craftsmanship in order to show how musicians might develop greater appreciation and understanding for their musical instruments. Since effects of globalization potentially disconnect producers, consumers, and natural resources,¹ there is a general lack of consideration by consumers for the processes and time required to craft musical instruments. Fostering reconnections between these actors through more active consumer participation in resource-to-product production processes is one way that disconnection between them can be alleviated,² allowing for a more ethically sound, environmentally considerate, and overall more sustainable music-making experience. In the sections below I will review literature that discusses the ways instrument

¹ David Harvey, *A Brief History of Neoliberalism*, (Oxford: Oxford University Press, 2009); Paul Robbins, *Political ecology: a critical introduction*, (Malden, MA: Blackwell Pub., 2004).

² Emilio F. Moran, *People and Nature: An Introduction to Human Ecological Relations*, (Malden: Blackwell Pub., 2006); Hank Renting and Markus Schermer, "Building Food Democracy: Exploring Civic Food Networks and Newly Emerging Forms of Food Citizenship," *International Journal of Sociology of Agriculture and Food* 19 (2012): 289-307.

craftsmanship has enhanced music education curricula for young children and world music. Building on this foundation, I will examine a musical setting that incorporates instrument craftsmanship within the context of collegiate-level academic music. This examination will show how more sustainable music cultures³ might result when musicians reconnect with their instruments and the production processes of their instruments through a more direct participation in instrument craftsmanship.

Certain sectors of music education have already incorporated instrument craftsmanship into their curricula, resulting in enhanced student musical understandings as well as reconnections between students and their musical instruments. For example, Matsunobu has argued for the validity of instrument making as an educational area for world music through his study of students that engage in shakuhachi flute making in Japan.⁴ The author "... proposes a "slow-food" approach to music education, the one that begins with making instruments as a way of localizing, historicizing, and personalizing each individual's music-making process."⁵ Matsunobu's informants articulated unique connections with their musical instruments, the bamboo used to construct the instruments, and the music they made with those same instruments.⁶ Along with this contribution, Matsunobu also provides an in-depth literature review of additional attempts and theorizations of incorporating instrument craftsmanship into the world music educational experience. Of these, the author gives mention of certain world music

³ Aaron Allen and Laurence Libin, "Ecomusicology," in *The Grove Dictionary of American Music*, 2nd ed., edited by Charles Hiroshi Garrett, (New York: Oxford University Press, 2014).

⁴ Koji Matsunobu, "Instrument-Making as Music-Making: An Ethnographic Study of Shakuhachi Students' Learning Experiences," *International Journal of Music Education* 31, no. 2 (2013): 190-201.

⁵ Ibid., 199.

⁶ Ibid., 195-197.

textbooks, such as Jeff Todd Titon's *World's of Music: An Introduction to the Music of the World's Peoples*, for the supplementary instrument-making projects they contain. One example of these projects found in Titon's textbook is David McAllester's section on making a "cow-horn" rattle within his chapter on the music of Native Americans.⁷ According to Matsunobu, "... the underlying idea of such projects is that being involved in the instrument-making process and embodying genuine sounds are a significant part of musical understanding."⁸

Educational curricula for young children that incorporate craftsmanship both present educational benefits and encourage critical consideration of the practice. For example, Matsunobu reviews the work of Hildebrandt, Zan, and Uptis who suggest that children who engage in instrument making can develop an interest in timbre and the science of sound production.⁹ On the other hand, Matsunobu critically discusses the many books that are available for young children that serve as instructional guides for making simple instruments out of everyday materials.¹⁰ Matsunobu posits that, "... the suggested projects in these books may lead to entertaining, one-shot activities, leaving an impression that instrument-making is not a part of music education, the purpose of which

⁷ Jeff Todd Titon, Timothy Cooley, David Locke, David McAllester, and Anne K. Rasmussen, *Worlds of Music: An Introduction to the Music of the World's Peoples*, 5th edition, (Belmont, CA: Cengage Learning, 2008): 41-45.

⁸ Matsunobu, "Instrument-Making as Music-Making," 191.

⁹ Carolyn Hildebrandt and Betty Zan, "Exploring the Art and Science of Musical Sounds," in Rheta DeVries et al. *Developing Constructivist Early Childhood Curriculum: Practical Principles and Activities*, (New York: Teachers College Press, 2002): 101-119; Rena Uptis, *This Too Is Music*, (Portsmouth, N.H: Heinemann, 1990).

¹⁰ Bart Hopkin. *Making Musical Instruments with Kids: 67 Easy Projects for Adults Working with Children*, (Arizona: Sharp Press, 2009); Jessica Turner, *Let's Make Music!: An Interactive Musical Trip Around the World*, (Milwaukee, WI: Hal Leonard, 1995).

is believed to deal more with the ‘serious’ matters of music.”¹¹ In other words, if the instruments that are made through such activities are not meant to be long lasting or taken seriously, students may misconstrue the role of musical instruments and the labor required to make them, potentially overlooking the creative and educational potential of craftsmanship. Aside from these attempts to use instrument craftsmanship within curricula for world music and the education of young children, instrument craftsmanship is largely absent from educational curricula in North America, namely that of collegiate-level academic music.¹²

This chapter begins to fill this void through an assessment of a collegiate-level academic music-making experience in the United States that incorporates craftsmanship. It serves to further establish the musical, environmental, and educational relevance that instrument craftsmanship can offer music-making in general. The practice of instrument craftsmanship within academic music is often literally and figuratively disconnected from the universities, colleges, and conservatories where academic music is practiced. Third-party instrument companies and makers are mostly responsible for the making of musical instruments. Settings that require consumers to construct their own musical instruments, then, serve as potential sites of reconnection between musicians, the musical instruments they make, the natural resources that comprise those instruments, and the labor required to produce them. When musicians reconnect in these ways, they are able to understand and appreciate their musical instruments in new and meaningful ways. These developed understandings and appreciations can allow for heightened efforts in instrument care and

¹¹ Matsunobu, “Instrument-Making as Music-Making,” 191.

¹² Ibid., 192.

maintenance; they can also allow for greater musician sensitivity to topics related to the sustainability of musical instruments.

OVERVIEW OF THE RESEARCH STUDY

The data of this chapter are drawn from an ethnographic setting with the percussion sextet Los Banditos comprised of all MSU percussion students. This ensemble composed for and performed on the instruments they made themselves from mostly sustainable and reused resources. Over the course of summer and fall 2014, Los Banditos constructed two glass marimbas, a cajón, and several other auxiliary instruments. Their piece *Um Quarto é Mais* is composed specifically for these instruments and was premiered at the MSU Percussion Ensemble Concert on November 5th.¹³ In order to better understand the extent to which reconnections were possible within this musical setting that incorporated craftsmanship, I conducted semi-structured interviews with members of the ensemble over the course of the project. Group interviews were conducted before the project began, after most of the instrument construction was completed, and just before the percussion ensemble concert. Individual interviews were also conducted on a case-by-case basis. Data was coded thematically and arranged into two large categories: 1) reconnections associated with instrument craftsmanship and 2) reconnections associated with musical instruments. The following sections of this chapter are organized in these ways.

RECONNECTING WITH INSTRUMENT CRAFTSMANSHIP

Musicians can develop stronger understandings about the importance of musical instruments by not only participating in their manufacture, but also by learning principles

¹³ *Um Quarto é Mais*, Los Banditos, Michigan State University, 2014, online video performance, <https://vimeo.com/112860277>.

of craftsmanship during the construction process. In the case of Los Banditos, a large part of these realizations were the product of discovering certain less-enjoyable aspects of instrument craftsmanship. For example, almost every member of Los Banditos articulated that they often found the construction process to be tedious, due to the many time-consuming and highly repetitive tasks they performed. According to Caleb Goncz:

Are these the official words you are writing? Just kidding. No, I thought [the process] made sense, ... and I knew why we had to do everything. It really was not fun sometimes. ... I shouldn't say "not fun." It was like very mind numbing to an extent. ... But I think it was good in general. I didn't find it to be totally awful.¹⁴

Though the other informants generally shared Caleb's sentiment, they all understood that the tedious nature of the construction process was necessary for the completion of the project. In fact, some informants eventually found value in these same repetitive tasks because of the meditative mindset their performance required.

Participation in craftsmanship can also be experienced as an educational process that develops human appreciation for both musical instruments themselves and the time and energy required to make them. Going into this project, members of Los Banditos had never constructed instruments with the intent of producing a product comparable to those of professional percussion instrument companies. As a result, many of us experienced for the first time the heightened level of detail and precision that was necessary in order to craft our instruments. According to Jon Wright:

[The process] was also rather informative. Something I remember thinking before we started was that I didn't really know what to expect since I had never done anything like this. And so working on both the glass marimba and the cajón, it was informative in the sense that I didn't really realize just how many steps there were to get from these pieces of wood to, bam, finished product.¹⁵

¹⁴ Caleb Goncz, interview by author, Lansing, MI, September 7, 2014.

¹⁵ Jon Wright, interview by author, Lansing, MI, September 7, 2014.

In these ways, musicians that participate in craftsmanship are able to reconnect with their musical instruments through a first-hand understanding of the labor required to make them.

The physical results of instrument craftsmanship can lead to strong senses of accomplishment by those involved. Over the course of the month Los Banditos constructed their instruments, the members were able to see these results in their work:

The whole thing to me felt rewarding just in the sense that you could see things getting done. There is something to be said about a finished project, because so many things in music are never finished. You never get there. And although the instrument can go through certain improvements, it always seemed like you were getting closer and closer to an end goal.¹⁶

Though these sensations of accomplishment were strong, they were also often temporary and recurring. Even after Dr. Jon Weber made this statement, the glass marimbas in particular went through several more revisions in terms of the ways they were designed and constructed. Yet, participants reported the same strong sensations of accomplishment whenever a revision was completed.

For Dr. Weber and some of the other informants, these sensations are different from those more commonly experienced when writing and performing music as composers and performers within the academic music tradition. For example, the night the first glass marimba was completed Caleb and myself worked from 12:00pm to 12:00am until the instrument was fully assembled. Normally we would finish working around 8:00pm, but on this day our excitement for completing the first instrument and our curiosity for how it might sound motivated us to work well into the evening, disregarding our appetites and fatigue. This type of workday was rather commonplace

¹⁶ Los Banditos, interview by author, Lansing, MI, Sep 7, 2014.

over the course of the project as members of Los Banditos experienced unique sentiments of accomplishment for the instruments they made. Perhaps the perceived differences regarding sentiments of accomplishment between instrument craftsmanship and areas of performance and composition are the product of the more physical results associated with making an instrument—those that can be easily seen, heard, and experienced upon the completion of any step in the construction process. These sentiments may also be the result of members of Los Banditos experiencing instrument craftsmanship for the first time.

Collaborative and interactive craftsmanship of musical instruments can lead to strengthened relationships and communities between the musicians that are invested in the construction process. In the case of Los Banditos, members voluntarily participated to some degree in the construction of our musical instruments over the course of a month. Often times, multiple people were working in the instrument shop at the same time. In addition, social activity such as group conversation and listening to music was commonplace during work hours. These frequent and shared interactions working on the instruments together further developed the preexisting relationships and community of Los Banditos. According to Cody Edgerton:

The uniqueness of building an instrument as a group is really cool because of the manual labor that goes into it. And spending the hours building the instrument also means spending hours together. And even if it means coming in and doing one thing and spending hours doing the same exact thing, and getting upset, and then being really excited when it happens; I think that only benefits the group by a lot, in having done that together.¹⁷

For Cody, the labor involved with making these musical instruments presented a shared experience between the members of Los Banditos that brought the group closer together.

¹⁷ Ibid.

Even though individuals were able to participate in the construction process at varying degrees, and even though the entire group was rarely in attendance at the same time, the fact that we all shared an understanding for the labor necessary to make our instruments provided a source of communal value. Similar sentiments of connection with other members of the group were experienced during the performance of our piece *Um Quarto é Mais*. According to Joel Block:

It feels familial. We've all poured some sort of energy into this project, and for us to be able to go and share this with our friends and colleagues, it feels like a family. It feels like we've done something together.¹⁸

Musical settings that incorporate craftsmanship, then, might affect musician experiences in composition and performance. In this case, the bonds that were developed between members of Los Banditos during the construction process allowed for a uniquely meaningful experience.

Musicians who are exposed to an initial musical experience that involves craftsmanship might be motivated to participate in similar settings in the future. This is particularly the case for members of Los Banditos with music education backgrounds. Cody Edgerton, Jon Wright, and Caleb Goncz articulated that they would consider using craftsmanship as a method for teaching their future students about instrument appreciation. According to Caleb:

[I would] definitely [use this as a teaching tool], if you want [students] to appreciate their instrument as much as possible, other than ... that this is a musical instrument that is very expensive. Its like, this is a lot of labor, a lot of very careful, devoted work, and a lot of absolute artisanship, made into something that's very expensive. But still, you have a lot more behind it than this is expensive because someone made it, so its more like, this is expensive because its worth it, and because it is this very musically rich thing.¹⁹

¹⁸ Los Banditos, interview by author, East Lansing, MI, November 5, 2014.

¹⁹ Goncz, September 7, 2014.

For Caleb, a musical instrument is an object that is valuable musically, socially, culturally, and monetarily. Incorporating instrument craftsmanship into educational curricula might effectively transmit these many layers of value to students.

RECONNECTING WITH MUSICAL INSTRUMENTS

Consumer participation in craftsmanship can allow for interesting perceptions and understandings of musical instruments. For example, members of Los Banditos most commonly articulated unique and strong sentiments of pride towards the instruments we made:

Its certainly pretty cool, you know. Like doing the resonators for example. That was a lot of fun, and every time I see them its like, "Alright, I built those things." And it's a pretty cool experience to finally present them here at the concert and be able to say, "Hey, this stuff on stage, we built this, or had a hand in building this."²⁰

This informant's statement demonstrates a personal pride for an aspect of a made instrument. It also shows a way in which pride is experienced when the instruments are shared with listeners through performance. In this case, not only can musicians be proud of their performance or composition, but also they can experience similar sentiments for an instrument they have made.

Members of Los Banditos generally articulated that they experienced stronger sentiments of pride for and personal connection with the instruments that they were more involved with making. During the construction process multiple people would be working in the shop at the same time and on different projects. In order to ensure consistency and efficiency, certain individuals often worked on specific instruments. This allowed for personal connections between the members of Los Banditos and the instruments they made. According to Caleb:

²⁰ Los Banditos, November 5, 2014.

I guess I am most proud of whatever I worked on the most, so the first being the glass marimba. [My feelings toward it] are certainly different from the cajón, because you and Jon Wright [made that] mostly. The glass marimba to me feels like more of my own since I guess I was more responsible for that than anything else. But not my own, you know what I mean, its just more personal.²¹

Once the instruments were completed and rehearsals for our piece *Um Quarto é Mais* began, individuals played the instrument that they had the most involvement making. Caleb also commented on the uniqueness of the experience performing on the instrument he made.

Playing on the marimba I made is certainly different from playing on something else. It wouldn't feel the same, necessarily; it definitely feels better to be playing on that instrument. Even if I were playing on the second glass marimba it would be different, because I had a lot bigger hand in making the first one. It's like "the one," you know; it definitely makes a difference.²²

Caleb's statements suggest that a stronger connection can exist between musicians and musical instruments when musicians are more involved with their construction. These connections can lead to a more sensitive consideration of musical instruments in general.

Musicians that participate in the craftsmanship of their instrument might also perceive and understand musical instruments that they haven't made in new ways. For example, members of Los Banditos expressed that constructing their own instruments encouraged them to consider how other percussion instruments might have also been constructed. According to Jon Wright:

It makes me think about the process that went into developing what we know as the modern marimba. So we made the two glass marimbas with no real prior experience making specifically glass marimbas. We didn't know what it would sound like or how it would work. Even by the second one we made it sounded better and we got better at making it. So I'm wondering like how many times when they were first coming up with the concept of what is now the marimba ...

²¹ Goncz, September 7, 2014.

²² Los Banditos, November 5, 2014.

how long did that process of refining techniques and stuff last? I'd never really thought about that before.²³

Jon's comment reflects an appreciation for the creative process of instrument makers and companies that have artistically and innovatively developed the ways instruments are made. Additionally, the informants gained an appreciation of the labor required to make musical instruments resulting in a greater appreciation and understanding of musical instruments and their production processes in general. According to Caleb:

Just like the perspective of it all. While I knew what the five-octave marimba was, [like the one we have in the percussion studio at MSU], ... and I knew where it came from, it still feels like I know more about it now even though I don't. Like I don't know any more about that marimba, that specific five-octave instrument that we have, but it feels like I do, just because of the process that I saw, or at least experienced [in making our own instruments]... It's almost like instrument appreciation.²⁴

Musicians of such experiences might also become more aware and sensitive to topics related to the sustainability of musical instruments. For example, one member of Los Banditos became more aware of his own personal disconnections from the production processes of percussion instruments he used on a daily basis:

When we were messing around with the glass marimbas the other day and I looked over and there is this giant monster of a five-octave marimba. It's like so weird... we went through all this work and there is this mass produced thing... this marimba that, you know, we aren't the only ones that have this kind of instrument. Obviously that's the only exact one, but it's almost like it was more impressive that the glass marimba was there than the five-octave. That's kind of what it feels like. It's weird. It's kind of like we went through all this work for this awesome thing. And while the five-octave is awesome too, this is awesome; the glass marimba is awesome in a different way.²⁵

In this sense, both Caleb's connection to the instrument he made along with the uniqueness of the instrument itself presented alternative sources for value. Similarly,

²³ Wright, September 7, 2014.

²⁴ Goncz, September 7, 2014.

²⁵ Ibid.

Cody Edgerton found value in the aesthetic qualities of the glass marimbas despite the fact that they feature what might most often be considered physical imperfections.

I think the more-typical instruments we have are beautiful, but in a sense they are very factory-made. You know, they're replicated, it has been done before. Where as the glass marimbas kind of have rawness about them that I think almost makes them more beautiful as instruments. That's not something that can be replicated easily.²⁶

Musicians that experience reconnection to and appreciation for their instruments in these ways might search to participate in musical settings that allow for similar experiences in the future.

CONCLUSION

Globalized markets often disconnect production from consumption, meaning that musicians must be increasingly aware of the social, economic, and environmental consequences of making musical instruments. In Chapter 1 I suggest that reconnections between the actors of the music-making experience are possible when consumers participate more directly in the production of their instruments, namely via the support of small-scale local marimba craftsmanship. This chapter suggests that another avenue for reconnection is possible when musicians themselves take part in constructing their own instruments. I have discussed the reconnections unique to such practice in relation to the musical setting with the percussion sextet Los Banditos who composed for and performed on instruments they made with mostly sustainable and reused resources.

This setting with Los Banditos allows for musician reconnections with the labor required to make musical instruments and with musical instruments themselves. For members of Los Banditos, participating in making their own instruments allowed for deeper understandings and appreciations for the construction processes of musical

²⁶ Los Banditos, September 7, 2014.

instruments in general. Also, members of Los Banditos often articulated that facing the challenges of instrument craftsmanship as a group allowed their personal relationships with other members to strengthen. Some members have suggested that their experiences making their own instruments were rewarding to the point that they will use similar methods to teach instrument appreciation as future music educators. This suggests that musical settings that incorporate craftsmanship are transformational, in that the lessons of reconnection and sustainability that informants enjoy can lead to continued and life-long pursuit of them. Further research should investigate the extent to which this is so.

Through their involvement with instrument craftsmanship, Los Banditos were able to experience reconnection with the musical instruments they made. Members most commonly articulated sentiments of pride for the work they had done, specifically in relation to the instruments on which they had spent most of their time. This sensitivity towards their own musical instruments translated to similar sentiments for musical instruments in general, leading to heightened awareness for issues of sustainability in the academic music community. These understandings lay the foundation for more sincere efforts in musical instrument care, maintenance, and appreciation.

This chapter is in response to a call to further establish craftsmanship as an area within music education curricula.²⁷ It has provided a setting within the context of academic music in the United States outside educational curricula for young children and world music that have been the focus of most scholarly dialogue. Chapter 3 continues this discussion through an analysis of the musical potential of settings that incorporate craftsmanship. The next chapter will show the ways that the incorporation of more

²⁷ Matsunobu, “Instrument-Making as Music-Making,” 199.

sustainable production processes of musical instruments can also lead to interesting and unique conceptions of musical artistry in composition and performance.

CHAPTER 3

CRAFTING NEW MUSICAL POSSIBILITIES: A NEW EDUCATIONAL AREA FOR ACADEMIC MUSIC?

INTRODUCTION

In this chapter I argue that the addition of instrument craftsmanship to traditional curricula for academic music enhances the musical possibilities and educational experience available to music students. Craftsmanship can yield both custom instrument designs and the incorporation of unconventional materials with unique sonic properties, both of which can inform the creative process of composers. In academia, craftsmanship is rarely valued on the same level as composition and performance, and is both literally and figuratively removed from the academic music-making process. When craftsmanship is brought into negotiation with the other academic areas, new musical possibilities become available that further enhance the educational and intellectual potential of academic music curricula.

When various areas of academic music negotiate, unique musical products are possible. Of these, negotiations between composition and performance are some of the most commonly discussed.¹ A historically well-known example of such a setting is the collaborative relationship between composer Johannes Brahms and violinist Joseph Joachim during the time that Brahms was composing the *Violin Concerto in D Major*. Correspondence between these two musicians shows the ways that certain passages for

¹ Sam Hayden and Luke Windsor, "Collaboration and the Composer: Case Studies from the End of the 20th Century," *Tempo* 61, no. 240 (2007): 28-39; Lukas Foss, "The Changing Composer-Performer Relationship: A Monologue and a Dialogue," *Perspectives of New Music* 1, no. 2 (1963): 45-53.

the solo violin part and beyond were discussed and edited based on compromises between both of their opinions and preferences.² Another discussion involves the negotiations between music theory and performance.³ This relationship might be experienced when a performance is mindful and reflective of structural musical components uncovered through analysis. Musicology and performance inform one another when musicians research and engage in “historically accurate” performance practice.⁴ And, composition and musicology negotiate when composers incorporate folk music into their pieces that they have extensively researched beforehand.⁵

Negotiations between craftsmanship and composition can similarly yield unique musical results, such as when the variety of possibilities related to homemade instrument types, timbres, and designs allow for creative musical products. The Michigan-based percussion group Groove, the Blue Man Group, and Stomp are just three current examples of artists known for making their own instruments that they then use in composition and performance. From PVC instruments, to propane tank drums, to modified found objects, craftsmanship to some degree is a major component of their musical identities. However, the Brazilian percussion ensemble Uakti might be one of the most notable examples of artists that incorporate craftsmanship into the overall music-

² Boris Schwarz, “Joseph Joachim and the Genesis of Brahms’s Violin Concerto,” *The Musical Quarterly* 69, no. 4 (1983): 503-26.

³ Münir Beken, “Music Theory and Phenomenology of Musical Performance,” In *Virtues and Passions in Literature*, edited by Anna-Teresa Tymieniecka, 305-310, *Analecta Husserliana* 96, (Netherlands: Springer Netherlands, 2008).

⁴ Dorottya Fabian Somorjay, “Musicology and Performance Practice: In Search of a Historical Style with Bach Recordings,” *Studia Musicologica Academiae Scientiarum Hungaricae* 41, no. 1/3 (2000): 77-106; Richard Taruskin, “On Letting the Music Speak for Itself: Some Reflections on Musicology and Performance,” *The Journal of Musicology* 1, no. 3 (1982): 338-49.

⁵ Akin Euba, *J. H. Kwabena Nketia: Bridging Musicology and Composition: A Study in Creative Musicology*, (Point Richmond, CA: MRI Press, 2014).

making experience. According to the group's website, "... Uakti's music begins with a sonic palette made possible by the instruments they make from everyday materials: PVC pipe, glass, metal, rocks, rubber, gourds, and water."⁶

Harry Partch, though, might be considered the most widely recognized for producing instruments, compositions, and performances that were all inextricably linked. According to Kakinuma:

The significance of Partch's instruments in the composition and performance of his music cannot be overemphasized. The instruments were made for the particular type of music that the composer had in mind; the range, timbre, visual shape, as well as the tuning of his instruments are intimately related to his music.⁷

Partch himself states:

My work takes its character from the instruments I have built, played completely and from my ideas and attitudes. The clarinets, cellos, and basses for which I occasionally ask can never take over this responsibility, however brilliantly they are played.⁸

Due to both the passing of Harry Partch and the uniqueness of his instruments, some have been encouraged to pursue efforts towards their conservation.⁹ These efforts are of course valuable, but perhaps even more valuable is the process of music creation that Partch brings to the table and that has been less frequently undertaken since his passing.

The artists discussed above have all incorporated craftsmanship in ways that yield unique musical products. Incorporating craftsmanship into scholarly discussions of musical experiences can present new interdisciplinary challenges and opportunities to music students. Students who craft their own instrument must deal with issues of

⁶ "Uakti," <http://www.uakti.com.br>.

⁷ Toshie Kakinuma, "The Musical Instruments of Harry Partch as an Apparatus of Production in Musical Theatre," (PhD Diss, University of California San Diego, 1989).

⁸ Ibid.

⁹ Ben Johnston, "The Corporealism of Harry Partch," *Perspectives of New Music* 13, no. 2 (1975): 85.

engineering, acoustics, and musical artistry simultaneously. Additionally, students that participate in such experiences might develop stronger understandings for the ways their instruments inform and are informed by the music they make.¹⁰

This chapter will emphasize the unique soundscapes that can be yielded as a result of incorporating unconventional materials on musical instruments. It will also discuss the ways experimental instrument design can inform music composition. Data are drawn from a Michigan State University-based case study that incorporates craftsmanship into the music-making experience. In the sections below, I will first provide background information on the ethnographic setting. This will be followed by a review of some of the unique musical possibilities that result from a consideration of both craftsmanship and composition. The motivation for this chapter is largely in response to a call to further establish the legitimacy of educational curricula that incorporate instrument craftsmanship.¹¹ I further contribute to this discussion by suggesting that craftsmanship is not just a submissive starting point, but an area that can actively inform the music-making experience.

OVERVIEW OF THE RESEARCH STUDY

Over the course of summer and fall 2014 I conducted ethnographic research with the percussion sextet Los Banditos. Together we composed for and performed on the musical instruments we made from mostly sustainable and recycled materials. These instruments include two glass marimbas separated by a quartertone, a wooden-bar auxiliary mallet instrument made from osage orange called “Wacky Orange,” a copper

¹⁰ Koji Matsunobu, “Instrument-Making as Music-Making: An Ethnographic Study of Shakuhachi Students’ Learning Experiences,” *International Journal of Music Education* 31, no. 2 (2013): 193.

¹¹ *Ibid.*, 199.

pipe glockenspiel, an electronic Malletkat instrument of sampled glass marimba sounds, and a cajón. Our composition *Um Quarto é Mais* was premiered at the MSU Percussion Ensemble concert on November 5, 2014 (Figure 5).¹²

Figure 5: Los Banditos (Left to right: Jon Weber, Joel Block, Alex Smith, Caleb Goncz, Jon Wright, and Cody Edgerton)



Organized by musical instrument, this chapter will discuss unique musical possibilities that became available due to negotiations between the sonic properties of unconventional materials, custom instrument designs, and composition. For example, the materials from which we made our instruments largely influenced the soundscape of *Um Quarto é Mais*. Of these materials, glass for marimba bars, osage orange for marimba bars, and copper pipe for glockenspiel bars proved most significant. Additionally, all of our instruments feature some form of experimental instrument design as can be seen in our auxiliary mallet instruments, electronic Malletkat instrument, and cajón. However, the quartertone-tuning scheme of the pitch producing instruments proved most influential on the composition of *Um Quarto é Mais*.

¹² *Um Quarto é Mais*, Los Banditos, Michigan State University, 2014, online video performance, <https://vimeo.com/112860277>.

NEW MUSICAL POSSIBILITIES

Glass marimbas

The idea to make glass marimbas originated with Dr. Jon Weber, director of Los Banditos and a professor of percussion at Michigan State University (Figure 6). Several years ago Dr. Weber became interested in an album of Philip Glass music recorded by the Brazilian percussion ensemble Uakti, entitled *Agua da Amazonia*. For this album Uakti used custom made glass marimbas. Because glass is not frequently used for the construction of marimbas, there is little written information that helped us learn how to construct our instruments. Our construction process, then, was largely based on trial and error.

Figure 6: Glass Marimbas



Nonetheless, the timbres of the glass marimbas in their completed form allowed for a unique musical soundscape in *Um Quarto é Mais*. For example, the resonance length of our glass marimbas is longer than that of wooden-bar mallet instruments¹³ while shorter than that of a metal-bar mallet instruments.¹⁴ This attribute presents an entirely

¹³ Such as the marimba and xylophone.

¹⁴ Such as the vibraphone and glockenspiel.

unique resonance length to what is available from the more typical mallet percussion instruments. In harnessing this resonance length, Los Banditos composed independent lines that interlock rhythmically and harmonically to produce composite sound masses. The first section of the piece features this musical idea (0:00-1:19). In the last two sections the glass marimbas continue contributing in these ways, though they begin to take on a more secondary role as new musical ideas and instruments are introduced.

In addition to the length of resonance, the overtones of each bar create an “ethereal” resonance quality. The standard technique for tuning wood and metal bars is to cut out and sand arches on the underside of the material allowing for complete control of both the fundamental pitch and overtones. Due to the fragility of ¼” thick glass, this tuning method was not an option for the glass marimbas, meaning that pitch was entirely the product of the length of the bars. This limitation in construction resulted in completely accurate fundamental pitches with overtones that were uncontrollable and inconsistent from bar to bar. For members of Los Banditos and the listeners at the premiere of *Um Quarto é Mais*, the “ethereal” resonance quality of the glass marimbas provided a source of unique aesthetic value.¹⁵

The quartertone-tuning scheme of the glass marimbas provides an example of how an experimental instrument design could affect the final musical composition. In fact, *Um Quarto é Mais* might be best described as an exploration of methods for purposing the quartertone tuning. The two glass marimbas are in tune with themselves, though one is tuned to A440 Hz and the other is 50 cents flat. This means that between the two instruments it is possible to play a completely chromatic quartertone scale.

¹⁵ This topic is discussed at length in Chapter 3.

Before the construction of the glass marimbas began, Los Banditos brainstormed compositional methods for purposing the quartertone tuning. We were not able to hear what these ideas actually sounded like until the instruments were completed. After the instruments' completion we began a process of experimentation with the instruments. This process resulted in the solidification of musical ideas that had been previously established, the elimination of ideas that had been previously established, and the creation of new ideas that had not yet been considered. Dealing with the quartertone tuning became the primary compositional material for the piece.

Wacky Orange

Wacky Orange is an auxiliary wooden-bar mallet instrument made from osage orange wood (Figure 7). Osage orange is a domestic tree that traditionally grows in parts of Texas, Oklahoma, Arkansas, and Louisiana, although it has been cultivated in all of the 48 mainland states of the USA. The wood's hardness and high density make it a suitable domestic substitute for the more commonly used and environmentally problematic rosewood. In its finished form, Wacky Orange consisted of four osage orange marimba bars tuned to a chromatic quartertone scale.

Figure 7: Wacky Orange



The timbre of Wacky Orange contributed to the “ethereal” soundscape of *Um Quarto é Mais*. Like most domestic woods used for the making of marimba bars, the resonance of osage orange might be described as “hollow” or “airy.” However, osage orange has a surprisingly long resonance and loud volume for a domestic wood. In understanding the “dry wetness”¹⁶ of the material’s sonic properties, Los Banditos developed a musical idea for a quartertone “sigh” effect that would float behind the glass marimba texture. This effect would be achieved by casually and lyrically rolling over a small, quartertone auxiliary mallet instrument that we would later make and name Wacky Orange (Wacky Orange entrance – 1:45).¹⁷

The development of the Wacky Orange instrument shows how craftsmanship, composition, and even the idiomatic sonic properties of a specific material come together in the manufacturing process. The initial spark for making such an instrument was the result of first hearing and appreciating the sound of osage orange. After becoming acquainted with osage orange’s sound, knowing that we had the ability to repurpose the material into a musical instrument was influential on Los Banditos’ compositional thought process. We then composed a musical effect for an instrument that we had conceptualized but not yet made. Wacky Orange was finally constructed only after the part was composed for it. In other words, in this example the sonic properties of a material informed conceptions of craftsmanship, conceptions of craftsmanship informed composition, composition then yielded craftsmanship, which all led to performance.

Copper pipe glockenspiel

¹⁶ Garrett Arney of The Arx Duo described the timbre of Wacky Orange in this way.

¹⁷ Wacky Orange spans the range of Eb4—FQTb4

Unlike Wacky Orange, the quartertone copper pipe glockenspiel was not given its own special alias, and as a result the instrument is exactly what the name implies (Figure 8).¹⁸ Our idea for using copper pipes in *Um Quarto é Mais* came from a desire to continue expanding the sonic pallet of the piece. In doing so, Los Banditos were influenced by pieces for percussion such as Paul Lansky's *Threads* and David Lang's *Bell Plates* that have called for similar pitched and found metallic materials. The copper pipe we used on our instrument was acquired from a reused metal yard.

Figure 8: Copper Pipe Glockenspiel



Both the origin and musical role of the copper pipe glockenspiel are similar to that of Wacky Orange. In regards to the instrument's origin, the initial spark for the instrument was the result of knowing the sound of copper. Knowing the sound of the material itself led to the composition of a part for an instrument that was not yet made, which then led to the actual making of the instrument. The musical role of the copper pipe glockenspiel was originally to produce a metallic and more rhythmic version of the

¹⁸ The copper pipe glockenspiel spans the range of C#5-EbQTb5. It also contains the pitches CQTb4, C4, G5, and A5 that are used for separate musical purposes.

quartertone “sigh” effect of Wacky Orange (copper pipe glockenspiel entrance – 1:55).

However, additional pipes were made as Los Banditos developed new musical applications for them.

Electronic Malletkat instrument

The electronic instrument is a compilation of sampled sounds of the glass marimbas that were assigned to a percussive midi controller called a Malletkat (Figure 9). Los Banditos decided to sample the glass marimbas for two reasons. First, there were only two acoustic instruments, but the group wanted to have up to four people performing on them at any given time. Also, since the acoustic glass marimbas only have a range of three octaves (F3—F6), Los Banditos wanted to be able to process the glass marimba sounds in order to fill up the lower register of *Um Quarto é Mais*. This compositional foresight ultimately led to the creation of the electronic Malletkat instrument. And, upon the instrument’s completion it not only became an object for more people to play and that would provide bass support, but it also presented an entirely new area for compositional exploration.

Figure 9: Malletkat



Each section of *Um Quarto é Mais* incorporates the electronic Malletkat instrument in a different way both in terms of the electronic processing and the instrument's musical role. For example, in the first section the electronic Malletkat instrument uses glass marimba samples that are dropped by two octaves in order to provide bass support. The samples are otherwise unaltered. In the second section the electronic instrument takes on a melodic role. Here the sampled glass marimba sounds are transposed down one octave. Additionally, the timbre is distorted and the resonance is extended to produce a more distinct and lyrical sound (1:28—2:31). In the final section of the piece, the electronic instrument takes on both a supporting and melodic role as two musicians play it simultaneously. The timbre of the samples in this section is so distorted that their audio source might be considered indistinguishable. A high-energy “house” groove was the musical motivation for this section, and as a result we wanted samples that were distorted, futuristic, and dry (2:31—End).

Cajón

Figure 10: Cajón



Though the cajón is the most traditional of the instruments Los Banditos constructed, it is the product of active negotiations between several academic areas including craftsmanship, music education, composition, and performance (Figure 10).

The motivations behind making a cajón were largely influenced by the interests of several members of Los Banditos that thought the skill might prove useful as future music educators. The cajón in general is a simple but highly versatile instrument that often has the power to capture the interest of young middle school and high school percussionists.

Additionally, the small size of our cajón can be considered the product of negotiations between composition and craftsmanship. Due to the small ensemble setting of *Um Quarto é Mais*, Los Banditos were initially concerned that a large cajón might overpower the rest of the instruments. For these reasons, our cajón is of smaller dimensions to the more typical cajóns in today's percussion instrument market. The smaller size of our cajón allows for a more contained sound, which is appropriate for the light, chamber ensemble context of *Um Quarto é Mais*.

Figure 11: Cajón Snares



Finally, our cajón features a snare “on and off” mechanism. Most cajóns in today's percussion instrument market either come with or without snares. Depending on the performance context, a percussionist may prefer to engage or disengage this sound.

Members of Los Banditos wanted to have easy access to both sonic options, and as a result we attached our snares to a rotating dowel that could be locked in both the on and off position (Figure 11).

CONCLUSION

In the sections above I have presented a variety of ways that this case study with Los Banditos has yielded negotiations between craftsmanship, composition, and other academic areas to produce new musical possibilities. For example, in this setting the sonic properties of unconventional materials served as compositional inspiration such as in the case of the glass marimba bars, the osage orange marimba bars, and the copper pipes. In fact, the soundscape of *Um Quarto é Mais* was specifically designed with these sounds in mind. Additionally, musical ideas often first provided inspiration for the ways these materials were incorporated onto actual instruments such as in the case of Wacky Orange, the copper pipe glockenspiel, and the electronic Malletkat instrument. Once these instruments were actually constructed, there was often potential that they would continue informing the compositional process. The quartertone-tuning scheme of the pitch producing instruments proved most influential on the compositional design of *Um Quarto é Mais*. Like nearly every aspect of the piece, this would not have been possible without our abilities to actively negotiate with the area of craftsmanship.

The evidence presented in this chapter argues for the inclusion of craftsmanship into the academic music curriculum because of the musical and educational potential aligned with such practice. While the traditional instruments of academic music curricula should not be abandoned, supplementing them with musical experiences that involve craftsmanship can present new interdisciplinary challenges and opportunities to music

students. Making music in these ways might also develop stronger understandings for the ways musical instruments inform and are informed by music composition. Future research should consider the educational potential of craftsmanship negotiating with other areas of academic music such as musicology, performance, music education, and listening.

CHAPTER 4

DEVELOPING SOCIAL CAPITAL BETWEEN THE ACTORS OF THE MUSIC- MAKING EXPERIENCE THROUGH THE CREATION OF NEW MUSICAL CONTEXTS FOR MORE SUSTAINABLY MADE INSTRUMENTS

INTRODUCTION

This chapter examines the sustainability of the marimba in light of its longstanding association with endangered natural resources. The traditional resource used in the production of marimba bars is the increasingly rare and endangered rosewood.¹ Additionally, rosewood's incorporation in the production of any American marimba requires that the resource be acquired internationally, which globalizes the production chain and greatly enlarges the carbon footprint of the production process. The consumption of rosewood for the making of marimbas and xylophones continues today since the sonic abilities of rosewood have not been matched by the material alternatives presented by the percussion community. However, these aesthetic preferences are in part the product of musicians and listeners being socially and culturally conditioned to value the idiomatic sounds of traditional materials.² Musicians and listeners, then, can learn to value alternative materials of more sustainably made instruments if their sound aesthetics are cultivated in their own musical contexts. Such practice might allow for a more ethical, environmentally considerate, and creative music-making experience as composers,

¹ Omar Carmenates, "Honduras Rosewood: Its Endangerment and Subsequent Impact on the Percussion Industry," (PhD diss., Florida State University, 2009) <http://diginole.lib.fsu.edu/etd/4194>.

² Aaron S. Allen, "'Fatto Di Fiemme': Stradivari's Violins and the Musical Trees of the Paneveggio," *Invaluable Trees: Cultures of Nature, 1660-1830*, edited by Laura Auricchio, Elizabeth Heckendorn Cook, and Giulia Pacini, 314-315, Oxford: Voltaire Foundation, 2012.

performers, listeners, musical instruments, and the natural resources that comprise musical instruments collaborate to invent these new musical contexts.

The sustainability of the marimba is a part of a much larger discussion of incorporating environmentally problematic woods for musical instruments. Over the years authors have discussed several other examples, such as the scarcity of Brazilian pernambuco for violin bows³ and guitar woods used by American Luthiers.⁴ The case of the guitar has even received some more mainstream attention after the two federal seizures of Malagasy ebony and rosewood from Gibson Guitars in 2009 and 2011 due to their supposed violation of the Lacey Act—legislation that deals with the trade in plants and animals that are illegally obtained, possessed, or sold.⁵ In every example, the sustainability of using such woods is in conflict with the demand for the sounds they make.

The physical properties of traditional woods for musical instruments produce sound aesthetics that cannot be easily duplicated. For example, Holz places the physical properties of different types of woods into equations in an attempt to show why certain species are considered superior as sound producers in a variety of musical contexts. Holz determines that tropical hardwoods⁶ have traditionally been used for marimba bars because of their hardness and high density. He concludes that “... to maintain the timbre

³ Russ Rymer, “Saving the Music Tree,” *Smithsonian Magazine* 35 (2004): 52-63.

⁴ John Curtis, “Sustainability: An Issue Confronting Luthiers,” *American Lutherie: The Quarterly Journal of the Guild of American Luthiers* 33 (1993): 40-45. For a more recent discussion see: *Musicwood*, directed by Maxine Trump, Helpman Productions, 2013, documentary.

⁵ James McKinley, “Famed Guitar Maker Raided by Federal Agents,” *ArtsBeat*, August 31, 2011, <http://artsbeat.blogs.nytimes.com/2011/08/31/famed-guitar-maker-raided-by-federal-agents/>.

⁶ This includes rosewood and other woods frequently used in marimba production such as padauk, blackwood, and coco bolo.

of the [marimba] one cannot substitute these woods.”⁷ Certainly, alternative materials for musical instruments will always fall short when they are held to the same aesthetic standards as traditional woods.

On the other hand, traditional woods for musical instruments are valued in part because they produce sounds that are “normal” and to which we are accustomed. Scholars in the field of ecomusicology help to contextualize the ways in which musical instrument reputations are culturally and socially constructed. For example, Allen states, “The object itself ... does not contain all that is special, even as musicians, craftsmen and scientists try to uncover its secrets. Rather, the value lies in its process of becoming, its life history.”⁸ This is to say that the marimba sound aesthetic is the product of age-old traditions of instrument craftsmanship and musical practice across musical contexts throughout the world. The sound aesthetic of rosewood, then, might be valued so strongly because it has been most commonly used over the course of the instrument’s history.

Musicians and listeners might be similarly culturally and socially conditioned to value the sound aesthetics of alternative marimba materials when such materials are appreciated in their own unique ways; a more subjective aesthetic assessment might provide a starting point for learning to value the sounds of these alternative materials. For example, Von Glahn teaches her students to listen to sounds and music holistically, to hear naturally occurring soundscapes, and to hear and value the music to which they listen within in the context of those soundscapes.⁹ When musicians and listeners of the

⁷ Dietrich Holz, “Tropical Hardwoods Used in Musical Instruments: Can We Substitute Them by Temperate Zone?” *Holzforschung* 50 (1996): 121-129.

⁸ Aaron S. Allen, “Fatto Di Fiemme,” 314-315.

⁹ Denise Von Glahn, “Sustainability and Sound: Ecomusicology Inside and Outside the Academy,” *Music and Politics* 7, no. 2 (2014): 34.

academic percussion community apply this approach, the sounds of alternative materials for more sustainably made instruments can be heard and valued in their own ways. Additionally, situating these instruments within a new musical context that cultivates their sound aesthetics can enhance appreciation for them.

The act of creating these new musical contexts can allow for strong senses of social capital between the actors of the music-making experience as they collaborate to develop the voices of these more sustainable musical objects. Social capital includes "...features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit."¹⁰ In the music world, I suggest that social capital between musicians and listeners is largely determined by the musicians' ability to abide by the musical values of their tradition. In other words, if Jimi Hendrix played "The Star Spangled Banner" at Woodstock with an unamplified ukulele, the trust his counterculture audience had in him would most likely not have lasted the night; the values of the counterculture, which Hendrix was both a product of and simultaneously had a hand in producing, determined that Hendrix's performances would be filled with loud, heavily distorted guitar and an uncanny stage presence. Similarly, the sound aesthetics of more sustainably made marimbas may prove problematic for musicians and listeners when used in musical contexts for instruments made with traditional materials. However, when composers and performers collaborate to cultivate these aesthetics in new musical contexts, strong social capital can exist between them and their listeners. This is the result of both their personal investment in the creation of the context and the aesthetic appropriateness of the instruments themselves.

¹⁰ Robert Putnam, "Bowling Alone: America's Declining Social Capital," *Journal of Democracy* 6 (1995): 65-78.

Transforming aesthetic preferences to align with the sounds of more sustainably made instruments also has the potential to allow for more sustainable music cultures.¹¹ For example, a more direct consumer participation in musical instrument production can yield ethical reconnections between instrument makers, musicians, musical instruments, and the labor required to make them.¹² Additionally, using more sustainable musical instruments and understanding the life histories of the natural resources that comprise them can lead to musician reconnections with the environment. Consumption in these ways can result in multi-layered valuations of the musical context due to the musical, ethical, and environmental benefits musicians and listeners can experience.

Through a discussion of two case studies, this chapter argues that the sound aesthetics of more sustainably made instruments can produce unique musical contexts. These musical contexts can allow for strong sentiments of social capital between the actors of the music-making experience. The first of these cases is an analysis of a composition written for an all-Michigan, reclaimed wood marimba, referred to as the Michigandered Marimba. Qualitative data are drawn from written accounts by the associated composer and performer in order to understand their experiences developing the musical voice of this instrument. The second case is an analysis of two pieces written for handmade glass marimbas and percussion. Data for the second case are drawn from composer, performer, and listener in-depth, semi-structured interviews to show the ways these musicians used, experienced, and valued the unique sound aesthetics of these instruments. These two settings show that new musical contexts for more sustainably

¹¹ Aaron S. Allen and Laurence Libin, “Sustainability,” *Grove Dictionary of Musical Instruments*, (New York: Oxford University Press, 2014).

¹² These topics are discussed at length in Chapters 1 and 2.

made instruments can be valuable to musicians and listeners due to the musical, environmental, and ethical benefits they offer the music-making experience.

CONTEXT I: THE MICHIGANDERED MARIMBA

During the summer of 2013, funded by Michigan State University and under the tutelage of the Michigan luthier and marimba craftsman Matt Kazmierski, Matt and I constructed a low-cost, four and one-third octave “sustainable marimba” (Figure 12).

Figure 12: The Michigandered Marimba (Left to right: Victor Marquez Barrios, Alex Smith, and Kelsey Tamayo)



This instrument is primarily comprised of naturally felled Michigan woods and resources, including Michigan sassafras marimba bars, constructed in an attempt to provide a local

and suitable alternative to rosewood-bar instruments.¹³ Upon the instrument's completion I compiled a short video documentary about the project, entitled *The Michigandered Marimba*, which also features the music of Michigan artists and the work of Matt Kazmierski.¹⁴ In an attempt to situate the unique sound of this instrument within its own musical context, the Michigan-based percussionist Kelsey Tamayo premiered the composition entitled *The Fallen Tree*, written specifically for the instrument by a composer from St. Lawrence University, Victor Marquez Barrios.¹⁵ In the sections below I will draw from written accounts by Kelsey and Victor in order to show their method and experiences creating the musical context of this instrument through the composition and performance of *The Fallen Tree*.

Establishing the musical context for the Michigandered Marimba

Composer-performer collaborative experimentation with the Michigandered Marimba's acoustic properties established the sonic palate that would be used in *The Fallen Tree*. For example, Victor and Kelsey began by experimenting with different mallets, extended techniques, and striking the bars and other parts of the instrument in unconventional places to determine a multitude of sounds that the instrument could produce. Those sounds were then considered in terms of how they might be repurposed into a composition. Both Kelsey and Victor immediately made the observation of the instrument's most striking quality. According to Victor, "Out of the many particularities

¹³ My process of testing bar material alternatives to rosewood is still ongoing. After a few years of experimenting with a variety of woods it seems that domestic options might need more regular maintenance in terms of their tuning. However, more testing is needed to confirm this and other questions surrounding domestic woods for marimba bars.

¹⁴ *The Michigandered Marimba*, directed by Alex Smith, Michigan State University, 2013, online documentary, <https://vimeo.com/80535177>.

¹⁵ *The Fallen Tree*, Victor Marquez Barrios, Alex Smith, and Kelsey Tamayo, Michigan State University, 2014, online video performance, <https://vimeo.com/84087203>.

of Alex and Matt's marimba, perhaps the one that struck me the most was the dry, raw wood sound it features."¹⁶ Kelsey articulated similar observations in relation to the instrument's properties of sustain, however she also noticed that the tone was of a "light" sound quality. According to Kelsey, this lightness facilitated the ability to produce a wide dynamic range while performing on the instrument.¹⁷

These idiomatic sounds of the Michigandered Marimba would largely guide composition and performance. For Victor, the instrument's "lack of resonance" was a quality that he intended to exploit, an idea he attributes to his compositional interest in the use of "... silence as a thematic element."¹⁸ Kelsey reflects on the ways the theme of sustain was incorporated into the work:

Sustain became an important element to the piece. Since the marimba could not sustain, we found a variety of ways to mimic it. For instance, Victor asks to "echo" a certain passage. This is achieved by repeating a note or notes in a way to hear decay.¹⁹

These idiomatic qualities also presented considerations for performance as well. Because of the instrument's unique material makeup and design compared to the more mainstream instruments in the marimba market today, Kelsey had to work extensively on developing a technique for playing it:

In order to fully bring Victor's piece to life ... I had to spend a lot of time developing a technique with this marimba. The bars do not have the same rebound as a conventional marimba. In many ways, I felt like I had to over-phrase passages in order for the listener to hear the larger musical idea I wanted to create.²⁰

¹⁶ Marquez, Victor, Alex Smith, and Kelsey Tamayo, "Music Made-In-Michigan: Three Perspectives," *Where Are We Now?* February 27, 2014, <http://wherearewenowmusic.com/2014/02/27/music-made-in-michigan/>.

¹⁷ Tamayo, "Music Made-In-Michigan."

¹⁸ Barrios, "Music Made-In-Michigan."

¹⁹ Tamayo, "Music Made-In-Michigan."

²⁰ Ibid.

Whether in a compositional or performance sense, this setting is an example of the ways musical instruments are musically active. The Michigandered Marimba's sounds largely guide the musical parameters of the *The Fallen Tree*.

Composers and performers that are creatively invested in these ways can have strong and meaningful understandings for the music they make and the instruments they play. For example, in Kelsey's account she discusses feeling more emotionally connected with the Michigandered Marimba and having a greater understanding for its sound aesthetics than with other percussion instruments she plays on a daily basis. She attributes this to her intensive involvement in developing its musical voice.²¹ This connection and understanding acquired through her experiences allowed for a greater awareness of her community's consumptive culture that might ordinarily go overlooked:

In a sense, I was aware of the depletion of rosewood. However, as a percussionist, it is easy to turn a blind eye to the way our choices effect the environment. Our need to have access for equipment masks the effects of our consumption of materials. Many of the percussion instruments we play only have a label stating a 'generic' birthplace. Being involved with this project has made me question the origins of instruments, the people who help carve their existence, the areas of the world instruments come from, and my personal involvement with these connections.²²

Not only does this passage represent Kelsey's heightened awareness, but it also expresses the value she places in actually using a more sustainable alternative.

Kelsey and Victor's composition and performance of *The Fallen Tree* provides a musical context for the Michigandered Marimba. Though some of the instrument's sound aesthetic features might traditionally be considered weaknesses in comparison to rosewood-bar instruments (ex: short resonance and lighter tone), here they are emphasized and valued; in fact, the piece is constructed with this in mind. In essence, The

²¹ Ibid.

²² Ibid.

Michigandered Marimba has an entirely unique sound, and when situated within its own musical context, that uniqueness is also value. Additionally, in settings such as this composers and performers can gain meaningful understandings of the music they make and the instruments they play because of their heightened involvement in the creative process.

CONTEXT II: GLASS MARIMBAS

During the summer and fall of 2014 the Michigan-based percussion sextet Los Banditos composed for and performed on the instruments we made from mostly sustainably sourced, recycled, and reused resources. By mid August the primary instruments of this project were completed. These consisted of two glass marimbas separated by a quartertone. Los Banditos also constructed a cajón, an electronic Malletkat²³ instrument comprised of sampled sounds from the glass marimbas, a copper pipe glockenspiel, and a wooden-bar auxiliary marimba. This final instrument experiments with the usage of osage orange for the bars, one of the hardest and most dense woods in North America that might serve as another domestic and more sustainable alternative to endangered rosewood.

The musical context for these instruments was established by two pieces that were written specifically for them. *Um Quarto é Mais* was the first of these pieces, and was written by Los Banditos for all the instruments we made.²⁴ The second piece entitled *Dharmas in Solitude: For Quartertone Glass Marimbas and Interactive Electronics* was premiered by Steve Wulff and composed by Doug McCausland. In the sections below I

²³ A Malletkat is a midi controller that is played like a percussion keyboard instrument.

²⁴ *Um Quarto é Mais*, Los Banditos, Michigan State University, 2014, online video performance, <https://vimeo.com/112860277>.

will draw from composer, performer, and listener in-depth, semi-structured interviews associated with this musical context to show the ways these actors used, experienced, and valued the unique sound aesthetics of these instruments.

Establishing the musical context for the glass marimbas

The actors of this musical context were immediately drawn to the timbre of the glass marimba. Over the course of the summer and fall of 2014 the glass marimbas were constructed and then reconstructed in several different ways to discover a method that maximized the bar sustain. In November we reconstructed the instruments for the final time yielding the most resonant product to date. Upon completing this last revision, all of the members of Los Banditos expressed appreciation for the glass marimba sound in terms of its resonance and uniqueness. Composer Doug McCausland expressed similar appreciation for the instruments' sonic properties:

... the sonic nature of the glass is so interesting, and its so almost, I mean, its not alien because its still related to what you would expect the marimba to sound like; but its just different enough, just "out there" enough, that it sonically lit that mental fire ... I think in a way the piece ended up being a meditation on the sound of the instrument itself.²⁵

Like the context for the Michigandered Marimba, the pieces for this context by Los Banditos and Doug are similarly constructed in that the sonic properties of the instruments served as musical inspiration. What is different, however, is that the unique sound quality of the glass marimbas provoked an overall more immediate and enthusiastic reception by composers, performers, and listeners alike. Joel Block, a member of Los Banditos, expressed a concern for the ways their sounds were being received.

²⁵ Doug McCausland, interview by author, East Lansing, MI, January 20, 2014.

As a music-making implement, they seem a little novel. And I think that's because I've never heard a glass marimba before. I've never heard a piece of music written for glass marimba before. So once we have music written for it, and my ears, or our ears, get adjusted to the timbre that the glass marimba produces, it will definitely sound more, normal.²⁶

In considering Joel's concern, Los Banditos wanted our listeners to experience more than purely timbre-related valuations of the glass marimbas at the performance of *Um Quarto é Mais*. As a result, the production of a strong musical context for the instruments became of utmost importance for Los Banditos. After experimentation with several musical ideas over the course a couple months, our completed composition featured a soundscape of resonant, evolving sound masses constructed from independent ostinatos that might allow for multiple perceptions of rhythm and harmony. Listener informants were able to discuss their opinions related to the composition and performance of *Um Quarto é Mais* in addition to the glass marimba timbre.

Listener valuations of the glass marimba context

The glass marimba timbre provided a large source of aesthetic value for listeners at the performance of *Um Quarto é Mais*. Most listeners at the premiere had never heard a glass marimba before; therefore, the most common and anticipated way in which the sound was valued was in relation to the sound's uniqueness. One of these informants was Robert Schmit, a former percussion student at Michigan State University and member of the MSU Drumline:

I mean, I don't even know if it should be classified as a marimba because it resonates so much. Like, it has the soft roundness of the marimba I'm used to, but then like [it also has] the [the extended resonance] and just a slightly different timbre.²⁷

²⁶ Los Banditos, interview by author, Lansing, MI, July 11, 2014.

²⁷ Robert Schmit, interview by author, East Lansing, MI, December 12, 2014.

Listeners with some sort of connection to either the academic percussion or academic music communities, like Robert, largely held these opinions perhaps due to their assessment of the sound in relation to rosewood-bar instruments. On the other hand, one outsider to these communities had a quite different experience listening to the glass marimbas:

I think the glass marimba ... sounded more natural? ... I'm not going to have wood around, ... If I hit glass, I know what glass sounds like. It's something that I experience everyday.²⁸

After listening to an entire concert with pieces that involved rosewood-bar instruments, this listener articulated that the glass marimba sound was in fact more “normal” due to her heightened familiarity with the material (ex: drinking glasses, flower vases, or other objects). I suggest that this experience is made possible because of a lack of social and cultural conditioning in relation to the norms of musical instrument materials that the insiders of these communities are normally subjected. I also suggest that this informant's experience demonstrates the ways that aesthetic preference is entirely subjective. As the percussion community continues to experiment with alternatives to traditional materials for musical instruments, the opinions of individuals from diverse musical backgrounds should be considered when assessing the aesthetics of those materials.

When listening to *Um Quarto é Mais* listeners were also able value and appreciate the process with which the instruments were crafted. Before the performance of the piece, listeners were made aware of the mostly sustainable methods and resources that were used in the making of the instruments. Knowing this, Clayton Batko, a biological anthropology major at MSU and member of the Spartan Marching Band, articulated that he enjoyed the performance visually in that he was able to look at a variety of materials

²⁸ Lauren Semrau, interview by author, East Lansing, MI, December 10, 2014.

to which he had assigned a previous identity (ex: pvc pipe, water bottle, etc.) and then experience them sonically. For Clayton, this idea could be applied to other instrumental areas for both environmental and aesthetic reasons:

I think [this idea] could [work for] other instruments, because people have this one standard that they set everything against and they try to make it like that, when its ok to make things different. Like you have enough recycled metal that you could make other instruments like brass instruments out of recycled metal, and it might not sound the same but that would be the beauty.²⁹

For Clayton, unconventional materials for musical instruments can be valued equally aesthetically because of their uniqueness. He, along with another listener informant, also suggests that this practice could be applied to other musical areas.³⁰ Finally, informants such as Robert Schmit suggest that this practice might present an interesting challenge for the music-making creative process.³¹ In using more sustainable materials in the making of musical instruments at a larger scale, composers and performers might be forced to more frequently deal with their sound aesthetics in entirely new ways requiring new forms of creative musical thought to emerge.³²

CONCLUSION

The Fallen Tree, Um Quarto é Mais, and Dharmas in Solitude: For Quartertone Glass Marimbas and Interactive Electronics provide two new musical contexts for sustainably made instruments with unique sound aesthetics. In each case the composers and performers developed new sonic rules for these contexts by cultivating the idiomatic sounds of the instruments in creative ways. Establishing the instruments within their own

²⁹ Clayton Batko and McKenzie Edgerton, interview by author, East Lansing, MI, December 10, 2014.

³⁰ Jane Sylvester, email interview by author, December 27, 2014; Batko and Edgerton, interview.

³¹ Robert Schmit, interview by author, East Lansing, MI, December 12, 2014.

³² Steve Wulff, email interview by author, January 23, 2014.

contexts away from culturally and socially constructed perceptions of sound aesthetic preference allowed for high levels of social capital to exist between the actors of the music-making experience.

In highly collaborative scenarios such as these, value can exist in a variety of ways. In addition to the sound aesthetics and music of these more sustainably made instruments providing a source of value, it can also result from the collaborative environment between the human and non-human actors of the music-making experience as they produce the voice of unique musical instruments. Value can also exist in the form of human appreciation for and connection to more sustainably sourced natural resources as they are used in the making of musical instruments.

The academic percussion community has an ecological footprint that results in ethical and environmental consequences. Creating musical contexts that maximize social capital between the musicians and listeners of sustainably made instruments with unique sound aesthetics is one way that musicians can address these concerns. Such practice requires a shift in previously established aesthetic preference and can begin to address ethical, environmental, economic, and aesthetic concerns, holding the potential for an overall more meaningful and creative music-making experience.

CONCLUSION

Musical instruments are objects with socio-cultural meaning and agency;¹ however, this relevance is often taken for granted when musicians have open and unquestioned access to them. According to Kevin Dawe, "... musical instruments are ... objects existing at the intersection of material, social and cultural worlds, as socially and culturally constructed, in metaphor and meaning, industry and commerce, and as active in the shaping of social and cultural life."² Similarly, Eliot Bates calls for consideration of musical instruments "... as neither a subject nor object, but as a source of action... ."³ Musical instruments, then, are both shaped by and have a hand in shaping the music and culture of their context. Clearly, a musician's ability to perform their trade, whether in terms of artistic expression, recreation, or music education, is reliant on the existence of musical instruments. In academic music, instrumental musicians need musical instruments to perform these tasks, tasks that ultimately lead to one's ability to establish and support themselves as professionals in their field.

But the social and cultural relevance of musical instruments extends far beyond their "completed" form for musicians to use in composition and performance. Throughout this thesis I have often used the term "natural resource" when referring to materials, mainly rare and endangered ones, used for the making of musical instruments. But, realistically, the idea of a "natural resource" is arguably flawed since it implies that

¹ Arjun Appadurai, *The Social Life of Things: Commodities in Cultural Perspective*, (Cambridge: Cambridge University Press, 1986).

² Kevin Dawe, "People, Objects, Meaning: Recent Work on the Study and Collection of Musical Instruments," *The Galpin Society Journal* 54 (2001): 221.

³ Eliot Bates, "The Social Life of Musical Instruments," *Ethnomusicology* 56, no. 3 (2012): 372.

nature is a resource to be consumed. The materials used to make musical instruments have their own life histories, societies, cultures, and meanings before they are incorporated in the making of musical instruments. These materials, resources, or living things, both in their natural state and as they exist in the form of musical instruments, deserve recognition, respect, and appreciation by those who use them.

The socio-cultural relevance of musical instruments also extends to the people and production processes required to make them. Like many facets of today's market economy, globalization often disconnects⁴ the production processes of musical instruments. This has led to a perception of instrument craftsmanship as being separate and a prerequisite to performance and composition.⁵ But instrument making *is* music making. It is a process that is not separate but that is intricately a part of the larger music-making experience. Considering it as such does not only lead to unique musical possibilities, but it also leads to environmental and ethical considerations of the making of musical instruments. Instruments are made with time, energy, and highly skilled people who steadily push the boundaries of craftsmanship. These people, like the natural resources that comprise musical instruments, also have lives, histories, and cultures that are meaningful. These people and the production processes they employ similarly deserve recognition, respect, and appreciation by those who use the instruments they make. Musical instruments, then, are not only socially and culturally relevant as musical objects, but also in terms of the equally significant and living natural materials that

⁴ Harvey, David, *A Brief History of Neoliberalism*, (Oxford [u.a.]: Oxford Univ. Press, 2009); Paul Robbins, *Political ecology: a critical introduction*, (Malden, MA: Blackwell Pub., 2004).

⁵ Koji Matsunobu, "Instrument-Making as Music-Making: An Ethnographic Study of Shakuhachi Students' Learning Experiences," *International Journal of Music Education* 31, no. 2 (2013): 190.

comprise them and the production processes, care, and expertise of the people that make them.

More sustainable music cultures⁶ can result from recognizing and reconnecting with these various actors. This thesis has shown the ways that reconnection is possible between the actors of the music-making experience through a more direct consumer participation in the making of musical instruments. Whether by way of supporting small-scale local craftsmanship or by actually making musical instruments themselves, musicians can gain stronger understandings and appreciations for musical instruments, the people that make musical instruments, the natural resources that comprise musical instruments, and the labor necessary to make them. These understandings can lead to heightened awareness of the environmental and ethical impacts of the instruments they use. They can also lead to strengthened relationships between the musicians that communally participate in the construction process.

Reconnecting with the natural materials and production processes of musical instruments can also lead to unique conceptions of musical artistry. For example, supporting small-scale local craftsmanship can yield collaborations between the producers and consumers of musical instruments. These collaborations often lead to artistic and innovative products that would not be possible with more large-scale options. Additionally, when craftsmanship is actually incorporated into the music-making experience it can freely and actively negotiate with composition. Musicians who make their own instruments are able to experiment with instrument design and unconventional

⁶ Aaron Allen and Laurence Libin, “Ecomusicology,” in *The Grove Dictionary of American Music*, 2nd ed., edited by Charles Hiroshi Garrett, (New York: Oxford University Press, 2014).

materials, both of which can inform and be informed by negotiations between craftsmanship and composition. Finally, the usage of more sustainable and unconventional materials in the making of musical instruments can lead to new musical contexts with unique sound aesthetics. In such cases, craftsmen, composers, performers, and the musical instruments themselves can creatively work together to develop the musical voices of these more sustainable instruments.

This thesis largely contributes to the emerging field of ecomusicology by providing the first examination of musical instruments within academic percussion. It suggests that reconnection between the actors of this music-making experience is a prerequisite to more sustainable music cultures. It is possible that this idea might be applicable to other musical contexts. Also, this thesis contributes to the discussion of “aesthetics” as being a component of sustainability⁷ through a discussion of a variety of ways that more sustainable production of musical instruments both informs and is informed by musical artistry.

Future research should consider if and how musicians who have experienced an initial reconnection through a form of more direct participation in the making of their instruments continue to pursue similar and more sustainable music-making experiences, testing the longevity of the impact. The individuals who participated in this project were novices at instrument building. Examining the ways these musicians continue to pursue more sustainable music-making experiences could show whether or not their behaviors toward sustainability have been transformed. Additionally, it will help to understand how

⁷ Aaron Allen, “Sustainability and Sound: Ecomusicology Inside and Outside the Academy,” *Music and Politics* 7, no. 2 (2014): 10-11.

musicians value the musical artistry of more sustainable music-making experiences compared to more conventional forms of music making.

Future research should also consider the existence of additional actors within the music-making experience. This thesis has served to provide a more expansive catalog of these actors beyond composers and performers to include the natural materials that comprise musical instruments and the people and production processes that make musical instruments. However, this list of actors is still limited. For example it does not include the surrounding natural environment of musical instrument materials, the harvesters of natural materials, indigenous populations that use natural materials for non-musical purposes, the tools used to make musical instruments, transporters of musical instruments, the fossil fuels and devices used to transport musical instruments, and beyond. The production-consumption chain of musical instruments is vast; therefore, in order to achieve a more complete assessment of the sustainability of musical instruments these various actors should be identified and examined to determine how the consumption of instruments might lead to environmental and ethical impacts.

Reconnection is the starting point for achieving this even more expansive consideration of actors involved with music instrument production. This thesis shows how musicians can be considerate environmentally and ethically while potentially enhancing and creating new forms of musical artistry. Applying this model to music-making experiences at a larger scale can lead to rewarding and sensitive musical products. Sustainability can begin to be achieved when musicians understand and appreciate the life that is required to make the instruments they use.

APPENDIX

APPENDIX

Figure 13: Permission Letter For Use of Copyrighted Material

808 Sparrow Avenue
Lansing MI 48910

March 18, 2015

Matt Kazmierski and Planet Marimba
295 Burroughs St.
Plymouth, MI 48170

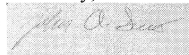
Dear Mr. Kazmierski

I am completing a Masters Thesis at Michigan State University entitled "Reconnecting the Music-Making Experience: Avenues for Sustainability and Musical Artistry in Academic Percussion." I would like your permission to reprint photographs from your website, *Planetmarimba.com*, in my thesis. These include:

- Photograph: "Trestle Marimba Frame"
- Photograph: "All-Wooden Posts"
- Photograph: "Matt Kazmierski and Concert Bass Marimba"
- Photograph: "Flagship"

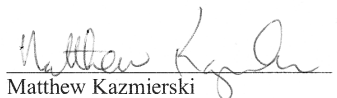
The requested permission extends to any future revisions and editions of my thesis, including non-exclusive world rights in all languages, and to the prospective publication of my dissertation/thesis by ProQuest Information and Learning (ProQuest) through its UMI® Dissertation Publishing business. ProQuest may produce and sell copies of my thesis on demand and may make my thesis available for free Internet download at my request. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you and your company own the copyright to the above-described material. If these arrangements meet with your approval, please sign the letter where indicated below and return it to me in the enclosed return envelope. Thank you very much.

Sincerely,



John Alexander Smith

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:


Matthew Kazmierski

Date: 3-19-15

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