

# Our Voices Count:

## The Potential Impact of Strength-Based Music Programs in Juvenile Justice Settings



**Dennie Palmer Wolf**  
**Steven Holochwost**  
**WOLFBROWN**

Research conducted in partnership with Carnegie Hall's Weill Music Institute in collaboration with New York City's Administration for Children's Services.

This project was supported in part by an award from the Research: Art Works program at the National Endowment for the Arts: Grant# 13-3800-7014.



**CARNEGIE HALL**  
Weill Music Institute

# Acknowledgments

We wish to acknowledge the following collaborators who have supported the design, data collection, and development of our findings:

- **Project advisors:** Dr. Tina Maschi, Associate Professor, Fordham University Graduate School of Social Service; and Margaret diZerega and Ryan Shanahan of the Family Justice Program, Vera Institute of Justice
- **Songs of Solomon choir:** Chantel Wright, Director, and choir mentors
- **The research team of the Administration for Children's Services,** particularly Sara Workman and Michael Fanelli
- **Colleagues in the field:** Maud Mary Hickey, Sara Lee, and Lea Wolf
- **The staff of the Musical Connections program at Carnegie Hall's Weill Music Institute,** especially Sarah Johnson, Ann Gregg, Manuel Bagorro, Elizabeth Ferguson, Jacqueline Stahlmann, and Alvin Taylor



Special thanks to the National Endowment for the Arts for its award of research funding.

The opinions expressed in this paper are those of the author(s) and do not represent the views of the Office of Research & Analysis or the National Endowment for the Arts. The NEA does not guarantee the accuracy or completeness of the information included in this report and is not responsible for any consequence of its use.

Photography of Musical Connections ACS Choral Project at Horizon Juvenile Center by Julien Jourdes. Participant faces are not shown to protect confidentiality.

# Table of Contents

Page	
1	<b>Executive Summary</b>
6	<b>I. Setting the Context: Contemporary Juvenile Justice</b>
7	A. The Need for Reform
8	B. Reform Towards What? A Strength-Based Approach
9	C. Music as a Strategy: The Promise and the Limitations
11	<b>II. The Project</b>
12	A. The Setting: The Larger System and Secure Detention Facilities
13	B. Implementing a Strength-Based Approach: The Musical Connections Songwriting and Choral Performance
16	<b>III. The Design of the Evaluation Study</b>
17	A. The Participants
18	B. Data Collection
18	C. The Measures
20	<b>IV. Findings</b>
21	A. Evidence of What Young People Bring
22	B. Evidence of Effort and Engagement: Persistence, School Credit, Informal Music Activity, and Musical Contributions
23	C. Evidence of Mutuality: Collaboration and Views of Others
24	D. Evidence of Changes in Personal Conduct
25	E. Evidence of Changes in Participants' Externalizing Behaviors
25	F. Evidence of a Changed Sense of Self
27	G. Evidence of Impact at the Two Facilities: Understanding the Contextual Nature of Change
29	H. Evidence of the Effects of the Residencies on Facilities Data
30	<b>V. Discussion and Implications</b>
31	A. Limitations of the Study
32	B. Implications for Future Work at the Intersection of Juvenile Justice and the Arts
34	<b>VI. Conclusion</b>
35	<b>VII. Bibliography</b>
39	<b>VIII. Technical Appendix</b>

# Executive Summary





There are more than two million youth in US juvenile corrections, 95% of whom have been detained or arrested for non-violent crimes. In fact, the United States incarcerates more youth than any other developed nation and for longer periods of time with no evidence that these efforts at correction make a difference (Gopnik, 2012; Hazel, 2008; OJJDP, 2008, n. d., a and b; Sickmund, 2010; Sickmund, Sladky, & Kang, 2011; Southern Education Foundation, 2014; Synder & Sickmund, 2006). Statistics from every state that collects data show that the system fails to increase public safety since as many as 75% of incarcerated youth reoffend after being released (Wilson, 2007). Moreover, time in the system has lifelong negative consequences for young people even beyond reoffending, such as school failure and unemployment, as well as intensified mental health issues and levels of substance abuse (New York State Paterson Task Force, 2009). Finally, given that so many young people who are arrested are poor and minority youth from resource-poor communities, the system multiplies their pre-existing vulnerabilities and erodes their chances to thrive (Alexander, 2010; OJJDP, 2008, n. d., a and b).

In the face of these sobering facts, many states and cities are seeking to reform their juvenile justice systems in ways that focus on a more positive, strength-based approach that addresses the current needs and future potential of the young people whom such systems should serve, not merely sentence. Proponents of these strength-based approaches argue that the current juvenile justice system cannot clone the adult prison system and expect to rehabilitate youth. Instead, they argue that the system has a responsibility to support, not stunt, young people's growth towards successful adulthood (Butts, Bazemore, & Meroe, 2010).

Increasingly, arts organizations have stepped forward to act as partners in bringing positive youth development projects to juvenile justice

settings. Their shared emphasis on agency and youth voice, combined with ensemble work toward a shared future goal, have been the source of promising practices and results for participating youth. This work, and its evaluation, has been particularly strong in the field of music (Daykin, De Viggiani, Pilkington, & Moriarty, 2013; Hickey, in preparation; Wolf & Wolf, 2012). However, given the small numbers of self-selected participants without comparison or control groups, the reliance on qualitative measures, the widespread use of self-report data, and the short-term nature of many of the projects, the results fall short of what public agencies require in order to recognize programs or strategies as evidence-based and thus worth supporting with public dollars or applying widely in programs designed to rehabilitate young people.

In the spirit of building the needed evidentiary base, this study reports results from a collaborative project between the Administration for Children's Services (ACS) in New York City and Carnegie Hall's Musical Connections program that addresses some of these design challenges. For 12 sessions over the course of two weeks, youth in two secure detention facilities participated in a choir in which they learned to perform traditional repertoire and also how to write original songs and lyrics. A choir director, six of her young adult vocalists, and two instrumentalist-songwriters supported the choir's musical and ensemble development, setting high expectations for both. In each facility, nearly one third of the residents

**Increasingly, arts organizations have stepped forward to act as partners in bringing positive youth development projects to juvenile justice settings. Their shared emphasis on agency and youth voice, combined with ensemble work toward a shared future goal, have been the source of promising practices and results for participating youth.**

participated, with the majority persisting to the final performance. Throughout, the youth engaged in discussion and reflection, keeping personal journals. The residency culminated in two performances, one for the entire facility and one to which families were invited. Thus, the program used an ensemble vocal music experience to translate the broad principles of strength-based approaches to youth justice into concrete and replicable practices.

Using a mixed-methods design featuring pre- and post-residency assessments, researchers explored whether or not intensive engagement in ensemble music-making yielded a range of positive youth development outcomes. In contrast to the deficit models frequently applied to court-involved youth, many of the measures focused on the growth of young people's engagement and pro-social behaviors. The evaluation asked: 1) whether high-quality, ensemble-based music could create a more positive and mutual environment inside the high-stress, uncertain worlds of secure detention facilities and 2) whether that environment results in positive outcomes for young people, including stronger social relations, more constructive behavior, and a changed sense of self.

Hierarchical linear modeling of pre- and post-residency data demonstrated that staff reports of young people's externalizing, or acting-out, behaviors were significantly lower following the residency at both facilities ( $\beta = -9.59, p < .001$ ). In addition, across facilities, 75% of young people completed the music residency and earned the half-course credit toward high school graduation from their on-site or future New York City high school. Nearly two thirds of young people reported spending one to two hours between sessions working on their music in their own free time, acting as agents to set and work towards a longer-term goal. More than two thirds of residents reported working with other young people, professional artists, and facility staff, not only in

rehearsals, but also in music-related free time activities. Finally, nearly half of the participants reported they experienced change in multiple areas of personal well-being (e.g., positive emotional state, sense of achievement, self-esteem, self-confidence, etc.).

In comparing the results across the two participating facilities, the data revealed that participants at one of the sites had statistically higher rates of earning high school credit ( $t(51) = 2.04, p = .047$ ), built stronger social networks around music ( $\beta = 19.1, p = .002$ ), were more likely to complete the entire residency, and exhibited lower levels of disengaged or disruptive behaviors ( $\beta = -1.73, p < .001$ ). Probing these results revealed that the facility where youth showed these additional gains had steadily reduced the use of involuntary room confinements and physical restraints in the year preceding the residency, while the use of these measures was markedly higher at the second facility over the same period.

These results suggest that it is possible to use the creation, rehearsal, and performance of choral music to create a distinctive microenvironment that fosters positive and mutually supportive behavior even within the high-stress, uncertain environment of secure detention facilities. Potentially, the choirs created ecologies where it was both adaptive and safe to let go of isolated, vigilant, or aggressive behaviors, and try out mutuality, engagement, and the vulnerability of creating and performing in public. At the same time, the variability in results across facilities underscores how sensitive these outcomes are to the institutional contexts in which they occur.

**Data demonstrated that staff reports of young people's externalizing behaviors were significantly lower following the residency at both facilities ( $\beta = -9.59, p < .001$ ).**

Thus, there is compelling preliminary evidence for the possible role that ensemble music-making can play in creating environments where positive

**The choirs created ecologies where it was both adaptive and safe to let go of isolated, vigilant, or aggressive behaviors, and try out mutuality, engagement, and the vulnerability of creating and performing in public.**

behavioral change is possible, safe, and attractive for young people. But these findings are provisional. Given the artists' and staff's goals to involve all interested residents, the evaluation did not include randomized assignments to control and treatment groups. In addition, given that residents volunteered, the participants may not be fully representative

of the population of young people who enter secure detention facilities. The program lasted two weeks and the final measurements of young people's behavior were coincident with the end of the program. Given these and other limitations, we cannot argue conclusively that young people's musical experiences caused the observed changes in their behavior or that the experience had lasting impact.

At the same time, this work opens up a set of issues that cultural organizations, researchers, and their partners in public agencies face in building a stronger evidential base for the potential role of arts-based youth programs in the juvenile justice system. We need to:

- Harvest and apply what projects like this choral residency tell us about the features of compelling and effective programs for incarcerated youth. What is the role of a charismatic artistic leader? What role did the young choral mentors play? Did it matter that they "were only two or three decisions away" from the young people they were teaching? How important was the aspirational and culturally relevant content of the songs? Only

if young people are attracted and persist can programs have an effect. Only if staff and peers respect the work and support it in "off-hours" does a program have its full impact.

- Improve the quality of education in the juvenile justice system through the inclusion of the arts. Impoverished education ranks high among the factors that deter youth development in the juvenile justice system (Southern Educational Foundation, 2014). The relatively high rates of residency completion suggest that the active, participatory nature of the performing arts, and the expressive opportunities embodied in all art forms, attract and sustain young people who may have a checkered history with formal instruction. This speaks to the need for arts and arts-integrated instruction in on-site schools and tutoring programs for students in the correctional system. Potentially, these experiences could be used to establish a new or renewed sense of academic or artistic identity.
- Create pathways in arts programs that begin in detention, bridge to probation, and continue in the schools and communities that young people re-enter. Only if there are continuous and attractive opportunities do young people experience enough dosage and duration that it is reasonable to ask whether sustained arts engagement can help young people reach goals like surviving to adulthood, graduating from high school, or not re-offending.

Second, as a research community, we need to:

- Address the frequent tensions between supporting youth development and pursuing rigorous research design. For instance, how can we resolve the conflict between serving a maximum number of young people, all of whom want or need to participate, and the

random assignment to treatment and control groups required for testing a program's effectiveness?

- Challenge the emphasis on deficit-based measures in tracking youth behavior and the effectiveness of staff and programs. It is important to know whether fighting, acting out, and self-harm decline. But it is equally important to understand whether positive social relations, help-seeking, collaboration, and constructive extra-curricular activity increase during such experiences, and if subjects persist in pursuing them.
- Finally, we have to move beyond investigating short-term interventions to increasingly longitudinal inquiry. We know at-risk youth best in moments of crisis like arrest and sentencing. But we know much less about what deters risky behavior, what allows a young person to seek help or new skills while in detention, or what skills and relationships make it possible for a young person to re-enter her community, return to school, and never return to the correctional system.

Dennis Saleebey, a long-time proponent of strength-based social interventions, wrote, "Every individual, family, and community has an array of capacities and skills, talents and gifts, wiles and wisdom that, in the end, are the bricks and mortar of change" (2000, p. 127).

In that spirit, the work reported here suggests that activities like ensemble music-making may allow youth to discover and act on their strengths. As one choir member admitted, "I had fear in my heart, but I had to sing through it." Correspondingly, it is time for cultural organizations and researchers to match that bravery by developing robust strength-based programs, along with the research designs and measures that will help to articulate if, why, and under what conditions the arts recognize, build, and sustain young people's talents and resources.

**One choir member admitted, "I had fear in my heart, but I had to sing through it."**



# I. Setting the Context: Contemporary Juvenile Justice



## A. The Need for Reform

There are more than two million youth in US juvenile corrections, 95% of whom have been detained or arrested for non-violent crime. In

**In direct relation to the amount of time they spend in the correctional system, most youth experience increasingly serious negative consequences, including persistent substance abuse, mental health issues, and difficulty completing high school or training programs, making it hard for them to ever thrive as older adolescents or adults**

fact, the United States incarcerates more youth than any other developed nation (Sickmund, 2010) and for longer periods of time (Gopnik, 2012), with no evidence that these efforts at correction make a difference. Despite this investment in a youth correctional system, there is a growing recognition that spending time in the justice system fails to provide young people with the skills they need for making more productive life choices. Tragically, approximately 75% are re-arrested within a year, with estimates suggesting they

may have committed as many as 12 offenses in that period, damaging persons, property, and the communities they re-enter, as well as their own futures (vanPoortvliet, Joy, & Nevill, 2010). Just as troubling is the evidence that youth who have been detained are more likely to become increasingly involved in juvenile and adult justice systems (Bernburg & Krohn, 2003; Huizinga, Schumann, Ehret, & Elliot, 2003; Sampson & Laub, 1997; Survey, Huizinga, Esbensen, & Weiher, 1991; Vitaro, Tremblay, & Bukowski, 2001). In direct relation to the amount of time they spend in the correctional system, most youth experience increasingly serious negative consequences, including persistent substance abuse, mental health issues, and difficulty completing high school or training programs, making it hard for

them to ever thrive as older adolescents or adults (New York State Paterson Task Force, 2009). Moreover, given that a disproportionate number of incarcerated youth are young people of color, such consequences amplify the pre-existing stresses of poverty, exposure to violence, and racism that many of these young men and women encounter (OJJDP, 2008, n. d., a and b; Sickmund et al., 2011). In short, a young person's involvement with the current juvenile justice system leaves them more vulnerable, rather than stronger.

For more than a century, advocates have sought alternatives to incarceration as the dominant response to delinquency, working to establish prevention and diversion programs. Additionally, advocates have worked to ensure that when a young person must be placed with the city or state, the placement programs provide an opportunity for young people to access services, gain skills, and then re-enter their communities as quickly as possible, while still maintaining public safety. At this time, many states and municipalities are engaged in major attempts to reform their juvenile justice systems to reflect positive youth justice principles that stress youth development and rehabilitation over punishment (Butts, Bazemore, & Meroe, 2010; New York City, 2014; Schwartz, 2000).

## B. Reform Towards What? A Strength-Based Approach

Historically, the study of human behavior has been dominated by efforts to identify and cure disease and difficulty, with a focus on diagnosis, intervention, and the restoration of “normal” health (Seligman & Csikzentmihalyi, 2000). Recently, researchers and practitioners have argued that this view, while it identifies needs and develops treatments, leaves out the entire positive hemisphere of human behavior, notably the ways in which hope, motivation, aspiration, effort, or positive effects shape human development and require understanding and propagation. Research on individuals who survive traumatic stress (e.g., extreme poverty, family mental illness, or abuse) has demonstrated the powerful protective effect that internal processes (e.g., positive affect, or future orientation) and external systems (e.g., trusting relationships) can have on restoring mental health (Rutter, 2008; Ungar, 2004). From this body of work, a strength- or asset-based approach to changing patterns of human behavior has emerged. As articulated by Saleebey (2000):

... everybody (no exceptions here) has external and internal assets, competencies, and resources. These may be a realized part of a person’s life or they may be inchoate— unrealized and unused ... Every individual, family, and community has an array of capacities and skills, talents and gifts, wiles and wisdom that, in the end are the bricks and mortar of change (p. 127).

The allied field of positive youth development (Benson & Pittman, 2001; Pittman, Irby, & Ferber, 2001) takes a strength-based and resilience-oriented perspective on adolescent behavior. This approach stresses how the years between 12 and 24 can be a time when individual young people realize their talents and competencies and cultivate their ability to attach to and empathize with others if they

experience positive connections with pro-social adults, continuous learning, and engagement in tasks related to community leadership and adult responsibilities. In addition, this perspective raises questions about conventional indices of adolescent health that focus chiefly on declining pregnancy, crime, and suicide rates, and calls for positive measures of development, especially for youth who are viewed as dangerous or “deviant”—such as court-involved young people. Historically, the measures of their success or development have been deficit-focused: fewer infractions in custody, not being re-arrested, or staying free. While no one debates the importance of reducing destructive behaviors, the exclusive focus on a deficit model leaves positive change unmapped. Partially as a result, there are few guidelines for supporting incarcerated young people’s development towards an adult future (Griffin, 2012; National Research Council, 2013.). In many situations, court-mandated detentions or sentences place young people into holding patterns or worse. In a reforming system, the question has to become, “How do young people in detention or prison get the resources they particularly need to grow and change?” Translated into juvenile justice terms, this approach would lead to a set of practices that:

- Recognize that youth are frequently placed at risk by circumstances over which they have no control and to which they will return. A major focus of their time in the system has to be the development of strategies that help them and people close to them be agents for better outcomes.
- Acknowledge that youth are still developing, and have the right to emotional, social, academic, and life-skills support that will give them the skills to make different life choices.
- Identify the assets, talents, and aspirations that can anchor young people’s future lives and potentially outweigh their past behaviors and current problems.

- Align education, elective programs, staff training, and work with families to have positive effects.

However, principles are not enough. As advocates for more positive forms of youth justice design and implement reforms, they must prove that the rehabilitative approaches they endorse, and the interventions that support those approaches, are feasible and effective. In short, if reform is to be sustained and supported, it requires strong and convincing evidence that it works.

## C. Music as a Strategy: The Promise and the Limitations

Arts programs have a long history in justice systems as tools of and partners in rehabilitation (Djurichkovic, 2011;

Johnson, Keen, & Pritchard, 2011), based on the premise that “the arts can play an important part in changing individual, institutional, and social circumstances which sponsor criminal behavior” (Hughes, 2005, p. 9). Research

shows that incarcerated adults who participate in arts programs exhibit: 1) positive changes in self-esteem and confidence (Miles & Clarke, 2006), 2) increases in self-control and reductions in impulsive behavior (Clawson & Coolbaugh, 2001; Hillman & Warner, 2004; Miles & Clarke, 2006; Ross, Fabiano, & Ross, 1988), and 3) increases in ability to manage interpersonal conflict resulting in concomitant decreases in the levels of prison violence (Durland, 1996; Manen, 1991; Piazza, 1997; Szekely, 1983).

A complementary set of studies shows that arts programs are also effective with adolescents, leading to similar changes in both internal states and external behaviors including: 1) improvements in self-esteem based on higher levels of engagement and achievement (Clawson & Coolbaugh, 2001; Cox & Gelsthorpe, 2008; Lovett, 2000; Silha, 1995; Vasudevan, Stageman, Rodriguez, Fernandez, & Dattatreyan, 2010; Wilson & Logan, 2006), 2) greater self-control (Center for the Study of Art and Community, 2007; Clawson & Coolbaugh, 2001; Lovelace, 2003; Reiss, Quayle, Brett, & Meux, 1998; Silha, 1995; Wilson, Atherton, & Caulfield, 2009), and 3) increased interpersonal skills (Arts Council England, 2006; Baker & Homan,

**“The arts can play an important part in changing individual, institutional, and social circumstances which sponsor criminal behavior” (Hughes, 2005).**



2007; Hughes, 2005; Lovett, 2000). Composing, rehearsing, and performing are associated with gains in mutuality or an openness to constructive interpersonal exchange and social bonding (Putnam, 2000), allowing participants to practice and refine the skills of interpersonal interaction (Anderson & Overy, 2010) and conflict resolution in favor of larger shared goals like putting on a great performance or making a recording. In sum, prior research suggests that ensemble musical activity can support the development of key emotional and social skills, which in turn may change the nature of social interactions and possibly even “lower the temperature” in correctional facilities, allowing staff and participants alike the chance to focus on developing and acknowledging youths’ assets rather than deficits, and on the growth of internal control and responsibility rather than coercion and punishment (Anderson & Overy, 2010; Ezell & Levy, 2003; Hillman & Warner, 2004; Watson, Bisesi, Tanamly, & Mai, 2003).

At the same time, caution is merited. Many of the studies of music in prisons have small sample sizes comprising interested volunteers, rely largely on qualitative measures (particularly self-report data), and have not had the resources or

the institutional partnerships to include control populations, or long-term follow-ups to test how robust observed changes were. Thus, compelling as the personal stories are from participants, artists, and staff, the results fall short of what public agencies require in order to recognize programs or strategies as evidence-based and thus, worth supporting with public dollars or applying widely in programs designed to rehabilitate young people.

Therefore, the purpose of the current study is to build on the current literature about the potential effects of music in juvenile justice by evaluating an intensive choral program for larger numbers of youth in secure detention using a pre- and post-residency mixed methods design that features both quantitative and qualitative measures, some drawn from the existing youth development literature and some of them designed to capture the unique outcomes of this work. As a result, the evaluation results can speak to whether participation in this kind of musical residency can affect a range of outcomes for young people: their sustained participation, their work towards high school credit, their behavior, and their self-concept.

## II. The Project



## A. The Setting: The Larger System and Secure Detention Facilities

Nationally, the juvenile justice system still serves significant numbers of youth in non-secure group homes, youth under 18 in secure detention awaiting trial, and those ages 18–24 in youth divisions of adult prisons. It is a system working to overcome the prison-like practices that were deemed appropriate once the concept of youth “super predators” (DiIulio, 1995) entered the national discourse (Fagan, 2010; Wolf & Wolf, 2012). Every day, staff balance the need for public and personal safety with the effort to create environments where young people are not only held, but also helped (Butts, Bazemore, & Meroe, 2010; Griffin, 2012).

Like many cities and states, New York City is working to reform its juvenile justice system. In 2010, the city’s standalone Department of Juvenile Justice was integrated into the Administration for Children’s Services (ACS), the city’s agency also responsible for providing child welfare and early care and education services. This new division within ACS, called the Division of Youth and Family Justice, was created to provide services that are informed by supportive and developmental, rather than adult correctional frameworks. The division facilitates long-term planning for the young people and their families with a focus on placing youth on the path toward school, work, and successful adulthood through a continuum of services and programs. Other reforms include the development and use of a risk-assessment tool that provides decision-makers with scientifically validated information about which youth they can safely release back into the community and who they should detain. The city has expanded the range of alternatives-to-detention for youth, reducing the numbers of youth placed out-of-home. In addition, through the Close to Home Initiative launched in

2012, New York City youth who have committed a delinquent act are placed in supportive residences in or close to their communities, rather than in distant upstate facilities.

In New York City, secure detention is composed of the custodial venues that hold adolescents who have been arrested for crimes before their 16th birthday. Additionally, it may be used to house youth awaiting adjudication up until their 18th birthday. Youth may be remanded to secure detention, either because of the risk they pose to public safety or the substantial probability the youth won’t appear in court. Given their function, these facilities concentrate some of the most troubled youth in the city. Many of the young people who enter these facilities have complex personal histories that predate their arrests: school failure, mental health diagnoses, and abuse that are the by-product of conditions of poverty, poor schools, unemployment, and racism in their neighborhoods. Even so, the young people detained at these facilities have very different involvement with delinquency and crime: some have been caught up in impulsive acts, others have robbed convenience stores or sold drugs, and still others have planned and committed violent crimes. For some this is the first time they have been arrested, others have a long history in the juvenile justice system.

These facilities provide individual rooms, common spaces, an on-site school, a gym and yard, a cafeteria, a clinic, and family-visiting facilities. Program coordinators provide as many support services as budget and staff allow: counseling, athletic programs, religious services, and as many extracurricular activities as partner organizations or volunteers offer. Regardless of these support services, secure detention is an enforced stay in a closed facility with strict surveillance, uniforms, and restricted movement (e.g., hands behind your back when you move single file from one part of the facility to another). Young men and women

who may have longstanding beefs or gang rivalries with other residents see each other daily making darting attention, vigilance, and mutual mistrust adaptive behaviors. Telephone calls and family visits are regulated and some families find it challenging to organize time with their children, making weekends and holidays difficult when on-site schools are not in session and residents know that their peers and families are busy.

Secure detention is a world shaped by uncertainty. In the processing phase, young people wait to hear about whether they will be released, held, or transferred; longer-term residents wait for their cases to be heard and then for judges' decisions; and as residents approach their 18th birthday, they wait to learn which adult jail they will be transferred to. While the average stay was approximately 29 days at the time of the project, individual residents might be "inside" for as short as one night or as long as several years if their cases are not resolved quickly. Given these realities, a pressing question for policy makers, staff, and advocates alike is "How could the prevailing framework and the daily practices in secure detention focus on helping young people to think about their choices, take responsibility for their behavior, trust and work with others, and experience possibility and accomplishment?"

## B. Implementing a Strength-Based Approach: The Musical Connections Songwriting and Choral Performance

Drawing on strength-based approaches to juvenile justice and supported by major city and state efforts to rethink juvenile justice, Carnegie Hall's Weill Music Institute has supported songwriting and choral workshops in New York City's two secure detention facilities since 2009. As the partnership matured, these workshops evolved: youth were able to use equipment to practice and record their songs, youth were offered one half credit for an elective on their high school transcript, family members were invited to the concerts, and youth performed in street clothes instead of detention uniforms.

In the 2012–2013 season the program expanded again, becoming a 12-session, two-week choral project that was open on a voluntary basis to as many as 25–30 participants at each facility. This change in format and scope represented a substantial rise in mutual trust. Staff members at secure venues are understandably careful about convening large groups of both young men and young women in semi-structured activities like musical rehearsals. The sheer size of the participant group (nearly a third to a half of the total number of residents at the time) meant that the project included young people from a range of behavior modification levels that the facility staff use to hold residents accountable and

**Drawing on strength-based approaches to juvenile justice and supported by major city and state efforts to rethink juvenile justice, Carnegie Hall's Weill Music Institute has supported songwriting and choral workshops in New York City's two secure detention facilities since 2009.**



motivate them to improve. Facilities staff opened up participation by announcing the program ahead of time and urging interested young people to sign up for the program. As compared to earlier residencies, interest and the willingness to sign a behavioral contract, not high behavioral ratings, were the only criteria to enter.

in rehearsals, following directions quickly, and jumping into the choreography of a song). The repertoire featured songs focused on the human capacity for resilience (e.g., R. Kelly’s “The World’s Greatest,” Stevie Wonder’s “City,” and the traditional tune “This Little Light of Mine”) and the possibility of social change driven by personal responsibility and mutual support (e.g., “Wake Up Everybody”):

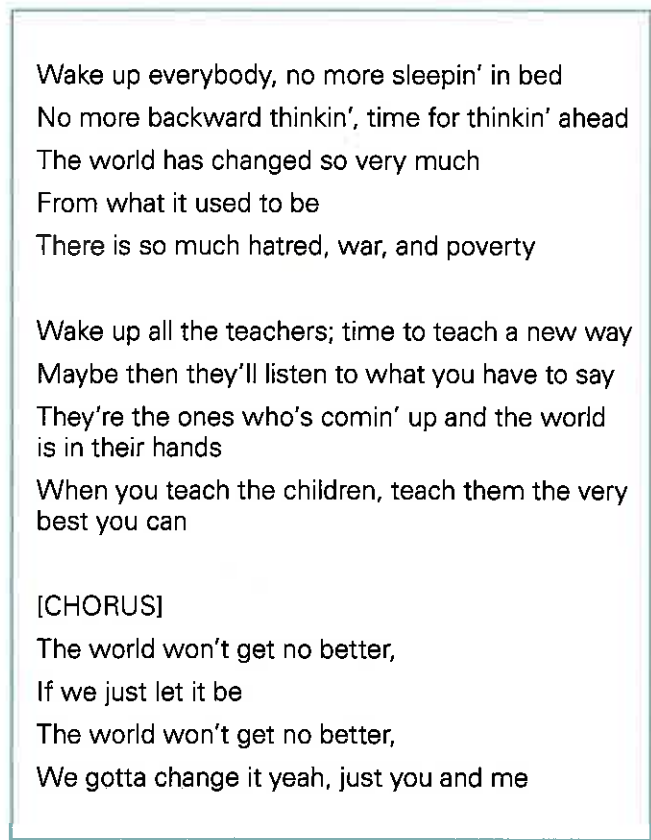
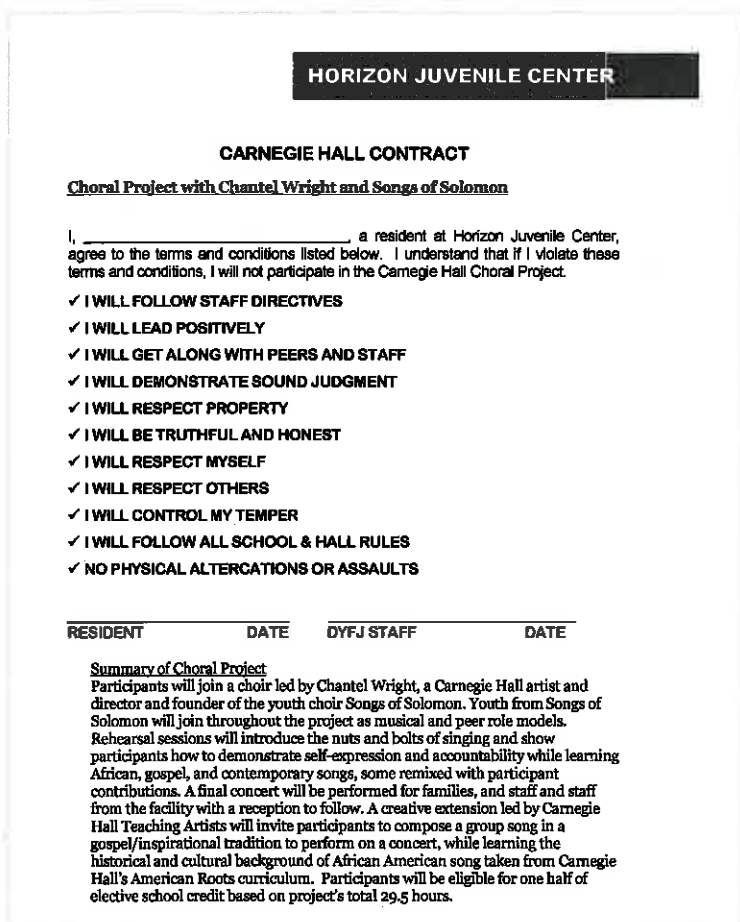


Figure 1: Residents’ Contract for Participation

Figure 2: Excerpted Lyrics from “Wake Up Everybody” by John Whitehead, Gene McFadden, and Victor Carstarphen

Chantel Wright, the founder and director of the Songs of Solomon choir in Harlem, was the artistic leader of both residencies. She was assisted by six of the senior members of her choir, young New Yorkers from neighborhoods and backgrounds similar to those of the residents. As one mentor noted, “It is good for us to be the ones here; we are just two or three decisions away from the young people, we know it and they know it.” The mentors acted as models (e.g., anchoring the pitch matching

In addition, two teaching artists from Musical Connections helped residents to compose original songs that grew out of and gave voice to their experiences as young people facing their pasts and wondering about their futures. These songwriting sessions were an opportunity for learning some of the basics of composition, as well as a chance for young people to reflect on their own histories and aspirations.

## Can't Let My Dreams Go

♩=180

Can't let my dreams go No I got - ta chase it

3  
If I keep try - in I know I'm gon - na make it

5  
My heart's all in it that's the ded - i - ca - tion

7  
Can't let my dreams go know I got - ta chase it

9

The musical score is written in 2/4 time with a key signature of one sharp (F#). It consists of five systems of music. Each system includes a vocal line in the treble clef and a piano accompaniment line in the bass clef. The lyrics are written below the vocal line. The score is numbered 1, 3, 5, 7, and 9 at the beginning of each system. The lyrics are: 'Can't let my dreams go No I got - ta chase it', 'If I keep try - in I know I'm gon - na make it', 'My heart's all in it that's the ded - i - ca - tion', 'Can't let my dreams go know I got - ta chase it', and a final system with no lyrics.

Figure 3: Original Song and Lyrics Composed by Workshop Participants with Teaching Artist Claudia Friedlander

The choir sessions were characterized by high and explicit expectations for personal conduct (e.g., eye contact and greetings when entering the rehearsal space, no low-slung pants, focused attention, and making an effort).

“There is just one thing in your life that you have absolute control over and that is your own behavior--what you do and how you respond to others. Take control of how you behave and you have the technology of change in your hands. The world can be yours. Refuse to take control and you are at the mercy of impulses.”

—Choir Director Chantel Wright to choir participants

There was an equal insistence on mutual support and respect for one another (e.g., a call for no laughing and mocking when boys whose voices had not changed yet were assigned to tenor parts). The musical standards were equally high (e.g., diction and vocal range exercises, and repeated work on the dynamics and choreography for specific songs).

“This is not about a group of kids who made mistakes getting to put on a show. Oh no. We are not going to perform unless what we can do is excellent. This is about you recognizing that if you work hard, what you produce is excellence.”

—Choir Director Chantel Wright to choir participants

In recognition of the artistic seriousness of the work, the residency closed with a final, full-band rehearsal, featuring additional professional musicians, a concert performance for the entire facility, and a performance and reception to which residents could invite their families. Thus, more explicitly than ever, the choral projects were designed to translate the broad principles of a strength-based approach into concrete, replicable practices.

# III. The Design of the Evaluation Study



Based on earlier research and the structure of the residency, evaluators designed an evaluation study focused on the following questions:

- How well can an externally developed music program translate the broad principles of a strength-based approach to youth development and carry it out in the environment of secure detention facilities?
- Can participation in a short but intensive ensemble-based choral music program improve incarcerated adolescents' behavior? Specifically, can these experiences promote positive peer-to-peer behavior, the frequency of engaged and constructive behaviors, and participants' sense of self?
- Can engaging a significant proportion of residents in ensemble music-making affect the behavioral climate in secure juvenile facilities? Specifically, given the high proportion of youth participating, will facilities' incident data show a more positive and productive overall climate, as compared to a comparable two-week period prior to the residency?

The following section details how a strength-based approach was also applied to the design and conduct of the evaluation.

## A. The Participants

All of the young people in the choirs had been accused of crimes that merit detainment, either because of the risk they pose to public safety or the substantial probability the youth won't appear in court. In total, the residencies served N = 54 youth, 25 of whom were at Facility A and 29 of whom were at Facility B. These numbers represent approximately one third of the total population in each facility at the time. Thus, the choirs included residents at a range of behavioral levels to which staff assign them. Participation was voluntary and open to all interested residents, recognizing that interest may be one of the most fundamental assets young people have, and that engaging in a voluntary program may be a first step to change. The program had high retention rates for an elective 12-session program: at Facility A, 1 participant was transferred home, 7 of the 25 participants dropped out during the course of the residency, leaving 17 who completed the experience. At Facility B, of the 29 participants, 1 did not show, 1 was removed for a serious incident, and 3 dropped out, leaving 24 who completed the residency.

As shown in the table on page 18, 20 of program participants (37.0%) were female and 34 (63.0%) were male. At Facility A, 7 (28.0%) participants were female and 18 (72.0%) were male, while at Facility B, 13 (44.8%) were female and 16 (55.2%) were male. The difference in gender distribution by facility was not statistically significant ( $\chi^2(1) = 1.63, p = .202$ ). The average age of participants was 14.98 years (SD = .812), with a range from 14 to 17 years old. There was no significant difference in the age of children at Facility A (M = 14.92, SD = .759) and B (M = 15.03, SD = .865). Thus, demographically, participating youth at the two facilities were similar.



	Facility A		Facility B		Overall	
	n	Percent	n	Percent	N	Percent
<b>Gender</b>						
Female	7	28.0	13	44.8	20	37.0
Male	18	72.0	16	55.2	34	63.0
<b>Age</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>
	14.9	0.759	15.0	0.865	15.0	0.812
<b>Attendance</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>
	71.1%	29.6%	64.2%	21.5%	67.4%	25.6%
<b>School Credit</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>
	63.0%	49.5%	86.0%	35.1%	75.0%	43.4%

Table 1: Descriptive Statistics for Participants Disaggregated by Facility

## B. Data Collection<sup>1</sup>

Researchers used four clusters of measures focused on: 1) participants’ conduct, 2) the formation of social networks, 3) added effort and engagement, and 4) changes in sense of self. The conduct and network measures were administered according to a pre-intervention / post-intervention schedule, testing the hypothesis that ensemble music-making can support young people in taking responsibility for their behavior and in working together effectively. In addition, using facility-level data on the incidence of behavioral incidents prior to and during the workshops, it was possible to test the hypothesis that such large-scale choral projects can affect the overall climate in a secure facility.

These quantitative measures were enriched by qualitative data drawn from participants’ journal entries and reflection sessions involving staff and participants. These latter data were used to shed light on how the experience of ensemble music-making led to additional effort and engagement as well as participants’ sense of undergoing personal changes.

To ensure confidentiality, data were assembled using numerical identifiers to which none of the evaluators had the key.

## C. The Measures

In an effort to understand the effects of the choral residencies, as well as the processes that underlie those effects, evaluators employed a mixed methods design that used both quantitative and qualitative measures. The measures addressed the growth of a selected set of strengths that the residency was designed to amplify.

### Measures of Taking Responsibility for Personal Conduct

- Ratings of residents’ externalizing behaviors: Prior to the first session, staff members familiar with participants completed three scales drawn from Teacher-Report, School-Age Version of the Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2001)<sup>2</sup>: the attention problems scale, the rule-breaking behavior scale, and the aggressive behavior scale. That same staff member also completed these same subscales in the week immediately following the music residency.

<sup>1</sup> All data collection was based on an MOU between the Administration for Children’s Services and Carnegie Hall that respects the confidentiality of individual subjects and staff.

<sup>2</sup> The CBCL is a commonly used standardized measure of behavior that has been validated for use with diverse populations.

- **Behavioral observations:** For 5-minute intervals, a trained observer tracked the frequency of: 1) engaged, pro-social behavior (ranging from mild instances such as making room for someone in a circle to stronger instances such as working with another resident on their performance/lyrics), and 2) disengaged or conflictual behavior (ranging from mild instances like grabbing someone's pencil to stronger instances like name-calling or fighting). Each participant was observed for two intervals during the opening two sessions (pre-) and the final rehearsals (post-).

### **Measures of Social Networks (or Ensemble Behaviors)**

- **Eco-maps of potential musical relationships:** In the first session and final rehearsal, participants filled in a diagram in which they indicated who in the room could be a resource in several aspects of music-making (e.g., lyrics, beats, performing, listening, giving ideas) (Vera Institute, n. d.).
- **Time diaries of voluntary musical activity collaboration:** As a part of the journals they kept, young people reported how much time they spent in elective musical activities with other people (e.g., writing lyrics, rehearsing, listening to music, thinking about the upcoming performance) (Carpenter, Huston & Spera, 1989). They supplied this information for a designated evening and over the weekend between the two weeks of the residency.

### **Measures of Additional Effort and Engagement**

- **Persistence to completion of music residency:** This entailed regular attendance at sessions and completion of a digital learning portfolio, including a reflection journal.
- **Earning high school credit:** This entailed regular attendance, turning in a set of required written journal assignments, and completing a digital portfolio.

- **Time diaries of voluntary musical activity (effort):** Young people's time diaries were also coded as a measure of the added effort and engagement that residents voluntarily put into their preparations for the performance.

### **Measures of Residents' Sense of Change**

- **Written reflections:** Each participant completed a diagram showing how they experienced themselves "in" and "out" of music. These were coded for the areas of difference (e.g., emotional state, identity, etc.).
- **Reflection discussion:** Following each residency, participants met with musicians to reflect on their experience. Recordings of these sessions were coded for major themes.

### **Measure of Facility Incidents**

ACS research staff examined the individual behavioral incident data for each participant from each of the two facilities during the two weeks prior to the residency and the two weeks of the residency.

Additional qualitative measures employed in this evaluation are described below:

- **Musical history:** At the outset of the residency, youth filled out a profile of their past musical experiences.
- **Session notes:** These were running records of events kept by evaluators and trained Carnegie Hall staff.
- **Lyrics and melodies from the songs that residents wrote.**

The overall effort was to: 1) design a set of measures that focused on the development of young people's assets, and 2) collect data that, in and of themselves, might underscore young people's new capabilities and possibilities (e.g., inventories of participants' earlier musical history, personal journals and reflections).

# IV. Findings



## A. Evidence of What Young People Bring

To work from a strength-based perspective, a program's practices have to focus on the assets that young people bring coupled with strategies for underscoring and building those assets. As mentioned above, young people joined the residencies voluntarily. So, as a foundation, each of the participants brought the energy and interest to enroll in an extra-curricular program that would take up their evenings for two weeks running.

In the opening session, participants completed a sketch of their musical worlds. Of the 33 participants responding to where they made music, 30 (90.9%) indicated that their musical experiences included live music in homes, congregations, studios, and elsewhere. Of the 34 participants answering items about their creative activities, 22 (64.7%) had performed music previously and one (2.9%) had played and performed previously. Only a third of the participants (11 or 32.4%) indicated they had no previous active musical experience. These patterns of participation were common across the two facilities, with no noteworthy differences in the distribution of these responses.<sup>3</sup>

When asked about the presence of others in their musical lives, approximately the same number of participants answered. Across both facilities, young people identified family members as being active in their musical lives—speaking to the role that music plays in their homes, neighborhoods, and congregations. Across all participants, responses about peers and community members were significantly correlated ( $r(32) = .540, p = .001$ ), but responses to other items were not. However, the distribution of answers varied significantly by facility. Residents in Facility A reported higher levels for items

about peers ( $\chi^2(1) = 5.20, p = .023$ ) and community members' involvement ( $\chi^2(1) = 10.8, p = .001$ ), and this variation approached significance for items about family members' involvement ( $p = .122$ ).

These data enforce a key point: the young participants had active musical histories. Not only did they joke and riff off of hip-hop music during sessions; many of them also knew the choruses and messages of faith-based songs from their congregations. Participants varied in the depth and breadth of their musical experiences, but the majority of them had made live music in their families—singing, recording, or playing instruments. Whatever their current legal status, the young people brought musical interests and assets to the choir.

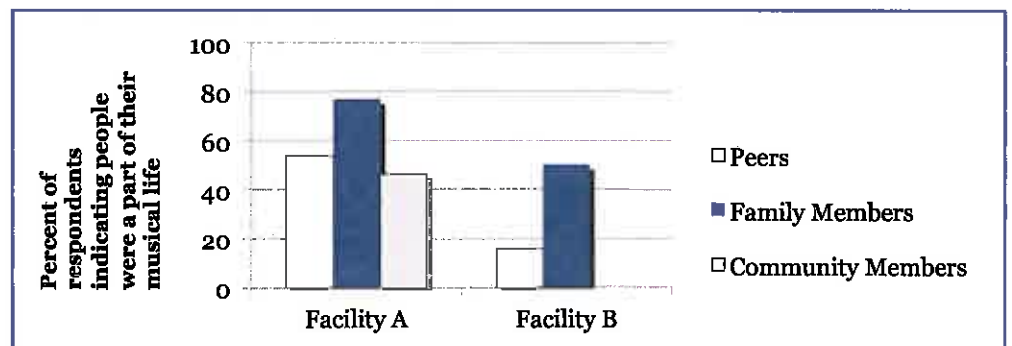


Figure 4: Participants' Musical Worlds

<sup>3</sup> Here and throughout the findings, the N for each measure varies depending on how many young people were present during a given session and how many of them chose to respond. (The issue of missing data is taken up in the technical appendix that accompanies this paper).



## B. Evidence of Effort and Engagement: Persistence, School Credit, Informal Music Activity, and Musical Contributions

One immediate indicator of growth, particularly in projects that are voluntary, is whether or not young people attend regularly. On average, participants attended 67.4% of sessions (these values ranged from 8.0% to 100%, with a SD = 25.6%), persisting across personal ups and downs, and as the challenge and risk of performing rises. There was no difference in the proportion of sessions attended by facility ( $p = .329$ ).

This project provided a second indicator of youth engagement: doing the necessary work to earn high school credit for the residency (which included regular attendance and participation, as well as the completion of a personal journal containing short reflections on the individual sessions). Seventy-five percent of participants earned high school credit (SD = 43.4%). Sixty-three percent of participants at Facility A completed the program (SD = 49.5%), while 86% of participants at Facility B did so (SD = 35.1%). This difference in rates of completion by program was statistically significant ( $t(51) = 2.04, p = .047$ ).

As a part of their journaling, young people recorded the amount of independent time they spent working on their music outside of the formal choral sessions. This might include private rehearsing or work with peers and staff on their new compositions or the quality of their performance. Of the 37 participants providing a response, young people indicated that they engaged in 2.65 musical activities on average (SD = 1.65), though responses ranged from 1 to 9 and were positively skewed ( $G_1 = 1.85, SE = .388$ ). Participants at Facility A ( $M = 2.00, SD = .966$ )

reported fewer types of activity, on average, than did participants at Facility B ( $M = 3.14, SD = 1.91, t(35) = 2.19, p = .035$ ). Sixty-one percent of the participants responding ( $N = 36$  or 61.1%) reported that they spent 1 to 2 hours between rehearsals engaged in voluntary musical activities related to the choir outside of the formal sessions. More than 20% of participants (22.2%) reported engaging in music for 3 to 4 hours outside sessions, while another 16.7% reported engaging in music more than 4 hours. Although the distribution of responses did not vary significantly by facility, a much larger proportion of students at Facility B (35.0%) reported engaging in music 3 to 4 hours than did students at Facility A (6.3%). Yet at Facility A, 25% of youth reported working more than 4 hours.

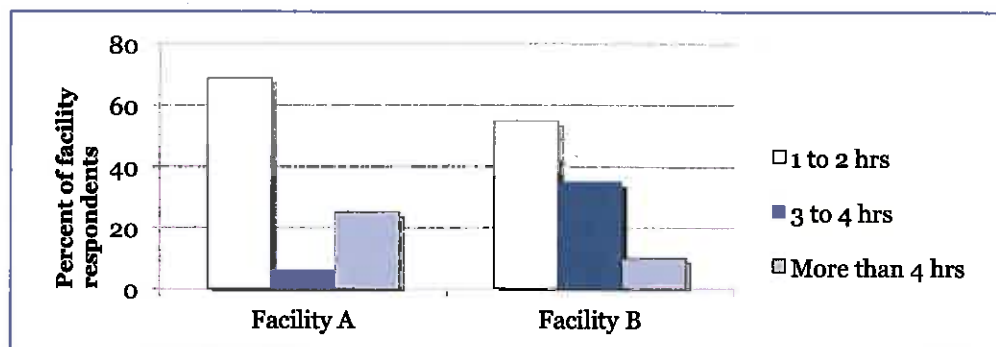


Figure 5: Engagement in Musical Activities Outside of Formal Sessions

The level of musical contributions (e.g., singing solos, rapping in small groups, composing new verses, etc.) was scored for 48 participants. Most of these (70.8%) participated in the program, but made no additional contributions. Small numbers of participants—all from the Facility A—made additional modest ( $n = 3$ ) or moderate ( $n = 2$ ) contributions. However, 18.8% of participants made major contributions, drawn in an approximately even fashion from across the facilities. Here there were no significant differences in the pattern of responses by facility.

## C. Evidence of Mutuality: Collaboration and Views of Others

As a part of their time journals, participants recorded with whom they worked during their voluntary free-time musical activity. Unlike rehearsals or classes, in this informal setting, the choice to work solo and collaboratively was entirely up to individuals. This makes it a telling indicator of whether musical activity promotes shared work. As shown in Figure 6, at both facilities, approximately one-third (30.6%) of the 36 respondents indicated that they worked solo. But two thirds of participants reported that during their own free time they chose to work on their music with others: a second third (36.1%) reported working with peers as well as solo, and the final third (33.3%) indicated that they worked solo, with peers, and with staff. For the 37 participants providing data, the average number of people involved in free-time music-making was 2.56 (SD = 1.34), though responses ranged from 0 to 5. There were no differences as a function of facility. Thus, for two-thirds of the participants across facilities, music provided a setting in which they elected to work with others.

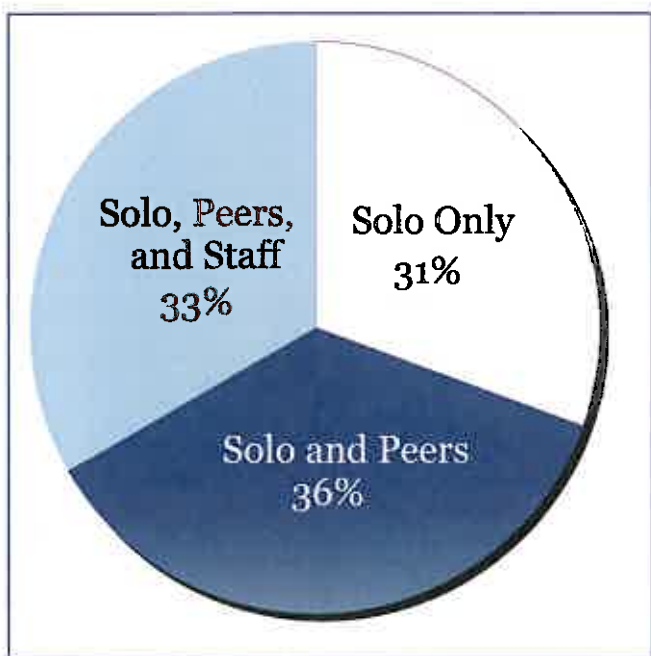


Figure 6: Musical Collaboration During Free Time

Both at the outset and at the conclusion of the residency, youth completed an eco-map, a diagram showing how many others in the group of peers they saw as being able to help them in various aspects of music making (e.g., songwriting, composing, performing, and producing). The resulting sketch displays the range of human resources the participant believes she or he has to draw on. Figures 7a and 7b below exemplify how a young person's sense of musical networks shifts over time.

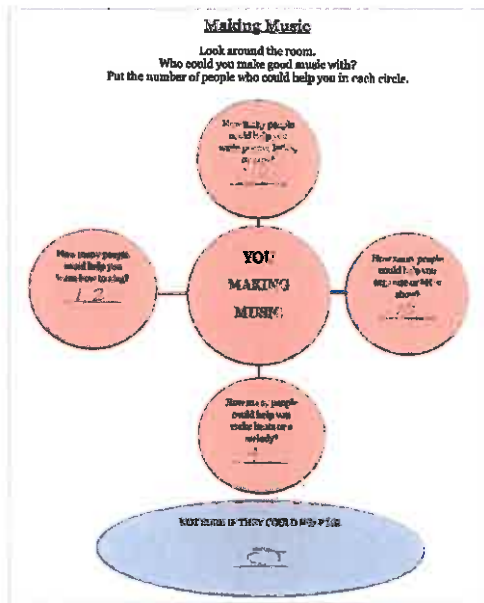


Figure 7a: Pre-Eco-Maps from an Individual Participant

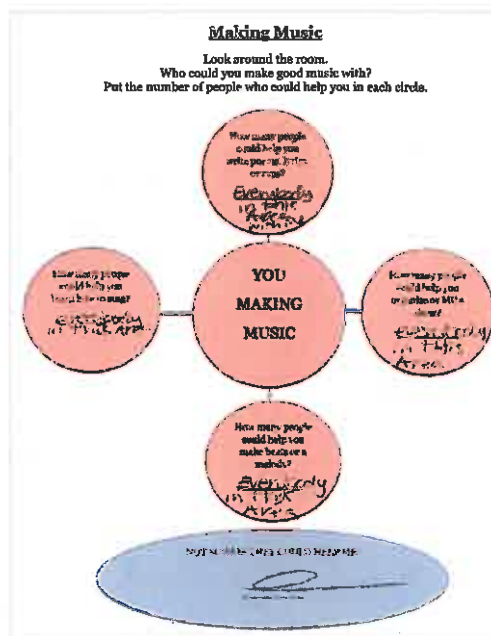


Figure 7b: Post-Eco-Maps from Same Individual Participant

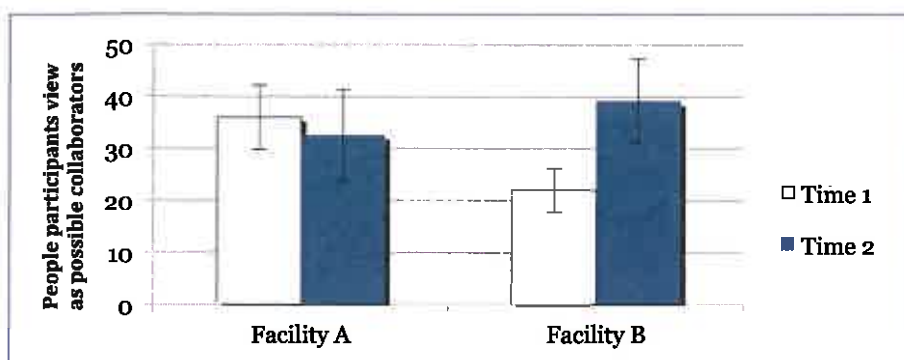


Figure 8: Participants' View of Peer Networks of Potential Musical Collaborators

Figure 8 shows how participants' views of their peers as fellow musicians change at Facilities A and B from the beginning to the close of the residency (with the solid bars depicting the average ratings, and the vertical lines representing the dispersion of their responses). Interestingly, residents in Facility A began with higher estimates of their peers as potential musical collaborators, but lost that optimism across the course of the residency. By contrast, at Facility B, youth's estimates of their peers as collaborators rose to much higher levels.

## D. Evidence of Changes in Personal Conduct

Trained observers collected running records of individual participants: 1) pro-social engagement (ranging from mild instances such as making room for someone in a circle to stronger instances such as working with another resident on their performance/ lyrics), and 2) disengaged or conflictual behavior (ranging from mild instances like ignoring requests to stronger instances like name-calling, talking back, or leaving the rehearsal). Two such records were collected in the first two days of the music residency (Time 1) and two additional records were collected in the closing two days of the residency (Time 2).<sup>4</sup> There was no significant effect for pro-social or engaged behaviors across Time 1 and Time 2. However, as shown in Figure 9, across both facilities, disengagement or conflict behavior declined. However, only at Facility B was this decline statistically significant (as indicated by the significant interaction effect between time and facility in predicting antisocial behaviors ( $\beta = -1.52$ ,  $SE = .586$ ,  $p = .011$ )).

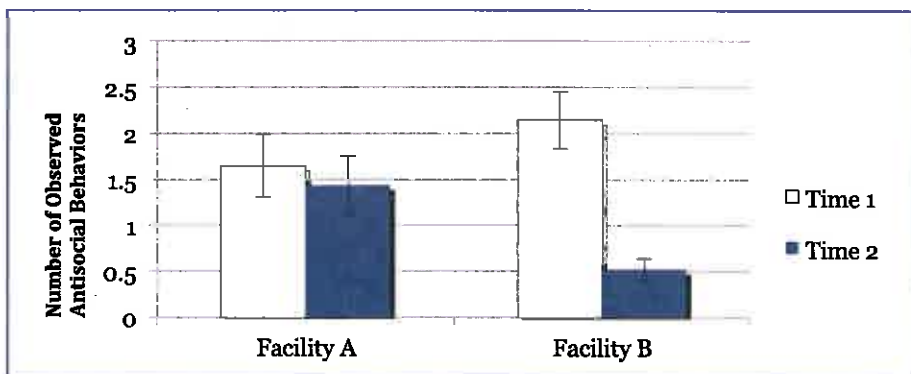


Figure 9: Observed Disengagement or Conflict Behaviors

<sup>4</sup> Raters scored these records independently, achieving an inter-rater reliability of 87%. Disagreements were resolved through discussion and rescored.

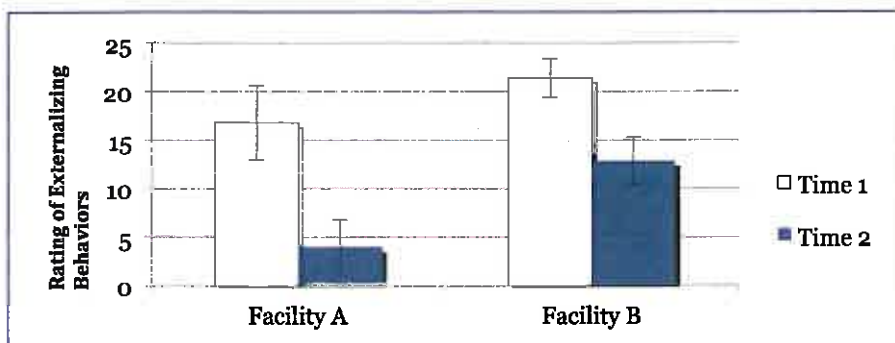


Figure 10: Staff Ratings of Participants' Externalizing Behaviors

### E. Evidence of Changes in Participants' Externalizing Behaviors

Staff scores for young people on the pre- and post-Child Behavior Checklist also showed significant patterns of change over time. At both facilities, total externalizing—or acting out—behaviors were lower after the music residency than prior to it.<sup>5</sup> As shown in Figure 10, there was a significant main effect of time on CBCL ( $\beta = -9.59, SE = 2.27, p < .001$ ) that was robust with respect to gender, age, and facility, indicating that, on average, staff scored participants as exhibiting approximately 10 points fewer externalizing behaviors after the program. Importantly, this is not due to the attrition of students with the most severe externalizing behaviors between the pre- and post-assessments: the lower level of post-residency CBCL data is unrelated to pre-residency CBCL scores ( $p = .228$ ). Finally, in this case, there was no significant interaction effect between time and facility.

### F. Evidence of a Changed Sense of Self

At the close of the residency, youth completed a short reflection about how they experienced themselves “in” and “out” of music. Workshop leaders asked them to write a simple list or even a short poem, choosing words to capture “who you are and what you are like when you are making music and when you are not.”

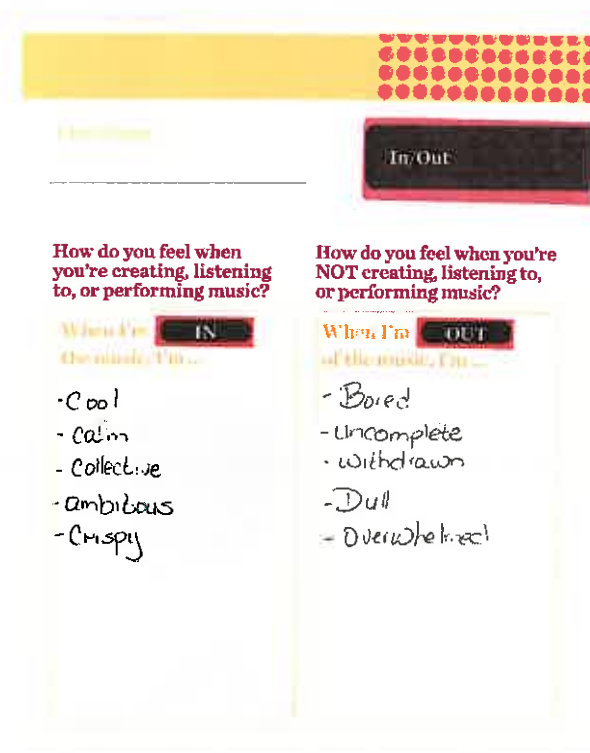


Figure 11: Example of Participant's “In and Out of Music” Comments

<sup>5</sup> In this case, the total of externalizing behaviors, as indexed by the CBCL, was higher at Facility B than at Facility A post-residency ( $t(34) = 2.53, p = .016$ ), indicating how variable, even volatile, patterns of behavior can be in secure detention facilities.



Participants' statements open a window on the internal experiences of ensemble music-making that may underlie the changes in young people's behavior. Participants suggest that while "in" music they have a different sense of themselves as part of a larger group where they can be openly engaged, focused, and energetic.

Young people's reflections were scored using four thematic categories of change (emotional state, level of engagement, sense of achievement, and self-esteem).<sup>6</sup> Scored instances were examined for the total number of positive changes associated with

**Nearly half (47.0%) of the 34 participants who responded reported positive changes in two or more dimensions of self-concept.**

music minus any negative change. On average, participants reported positive change associated with making music in 1.26 domains, though values ranged from -1 (indicating negative overall change) to 3. Nearly half (47.0%) of the 34 participants who

responded reported positive changes in two or more dimensions of self-concept. There were no differences by facility.

These data were enriched by comments young people made in their reflection session when they spoke about how they had changed during the two weeks of singing:

"I had fear in my heart, but I had to sing through it."  
"I gained a little bit of discipline; it made me work at it."  
"I had a reason to step up."  
"I felt famous."

Regarding the experience of performing, young people also describe their changing selves in the presence of others, both peers and family:

"We was tight. I was proud of my friends for finishing."  
"Someone I had a beef with said it was big."  
"My mother said she saw a different person."

The choir mentors witnessed these changes session by session. One of them described what he saw as a cycle of consequences:

"When they see and hear their families celebrating the good that they are doing, that celebration causes them to blossom. It is like the façade that they put up of toughness and defensiveness falls away as they are being celebrated. Just that feeling, the recognition of the good in you, kind of causes you to open up and give a little more and new possibilities begin all over again."

<sup>6</sup> Two trained raters independently scored the reflections for theme and whether the change was in a positive or negative direction, achieving a level of 84% reliability, and resolving disagreements through discussion.

## G. Evidence of Impact at the Two Facilities: Understanding the Contextual Nature of Change

As discussed, the choral residences were implemented in two secure detention facilities (Facility A and Facility B), one in November 2012 and one in January 2013. While the facilities serve similar numbers of youth with similar histories and demographics, in many ways the impact of the program was greater at Facility B. At Facility B, more participants persisted from start to finish. Moreover, they had statistically higher rates of earning high school credit ( $t(51) = 2.04, p = .047$ ), built stronger social networks around music ( $\beta = 19.1, p = .002$ ), and exhibited lower levels of disengaged or disruptive behaviors ( $\beta = -1.73, p < .001$ ). Though this was an unanticipated finding, potentially it speaks to the conditions under which musical interventions can have maximum impact.

Upon examining historical data for the two facilities, it was clear that each had a distinctive

history prior to the time of the residencies (Quarter 2, FY 2012 through Quarter 2, FY 2013). Using the data that ACS collects on incidents in the system, Figures 12–14 below display the number of incidents by facility for the year leading up to the residencies, which occurred in Quarter 2 of FY 2013 (Administration for Children’s Services, 2014). Trends were similar for incidents per population. As Figures 12 and 13 indicate, Facility A had a history of overall higher frequencies of the use of restraints and room confinement. These strategies, while sometimes necessary, represent a pattern of staff choices in responding to what they see as dangerous behavior in residents. By contrast, at Facility B, there were lower rates of both physical restraint and room confinement, suggesting either a less challenging population or a more controlled or negotiated approach to acting-out behaviors. As the figures indicate, later in FY 2012, through concerted attention to staffing and program improvements, Facility A saw a steady decline in physical restraints, and a more gradual decline in room confinements. But this trajectory was only just taking hold at Facility A at the time of the residencies. Data in each figure are reported in terms of the average daily population (ADP) at each facility.

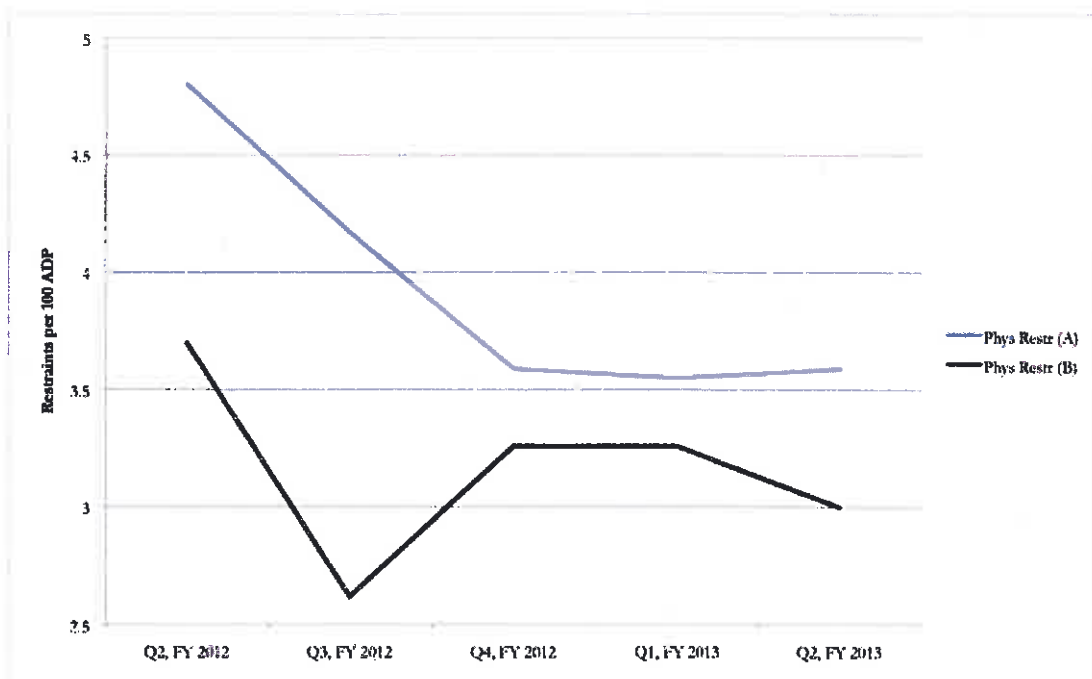
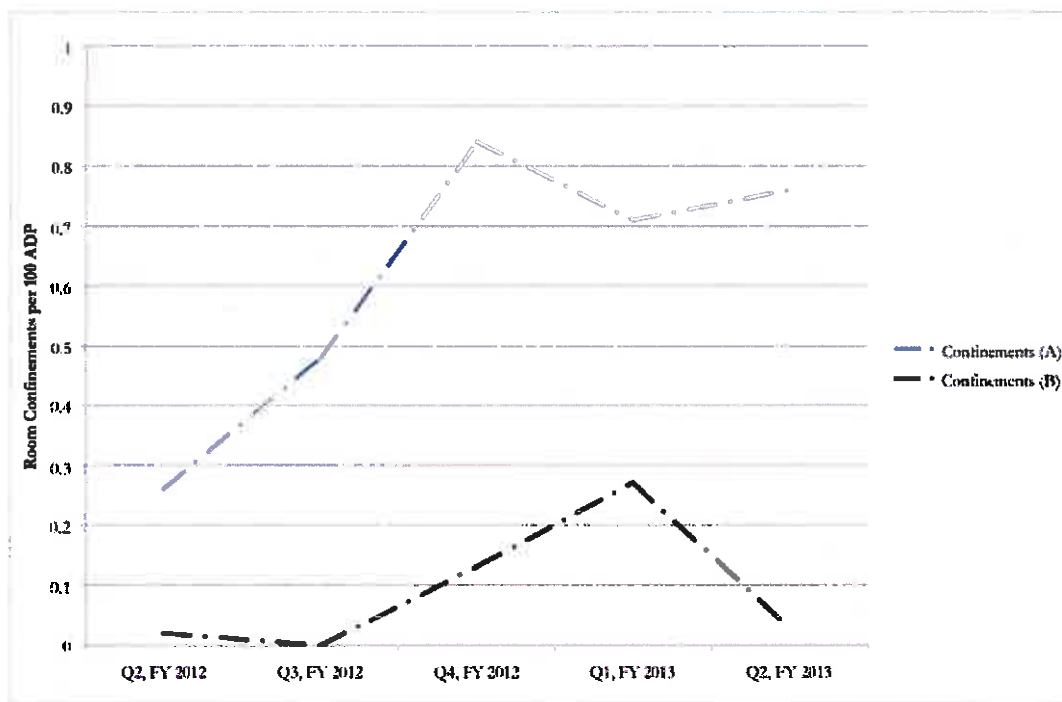


Figure 12: Frequency of Physical Restraints at the Two Participating Facilities



Figures 13: Frequency of Room Confinements at the Two Participating Facilities

Figure 14 shows the incidence of fights and injuries at the two facilities for the same period. While Facility A shows a higher incidence in Quarters 2 and 3 of 2012, that is followed by an overall steady decline through the first quarter of FY 2013. During the

same period, Facility B shows a more erratic pattern of incidents over time, illustrating how volatile the climate of secure detention can be, even as staff work to implement developmentally appropriate and supportive behavior-management strategies.

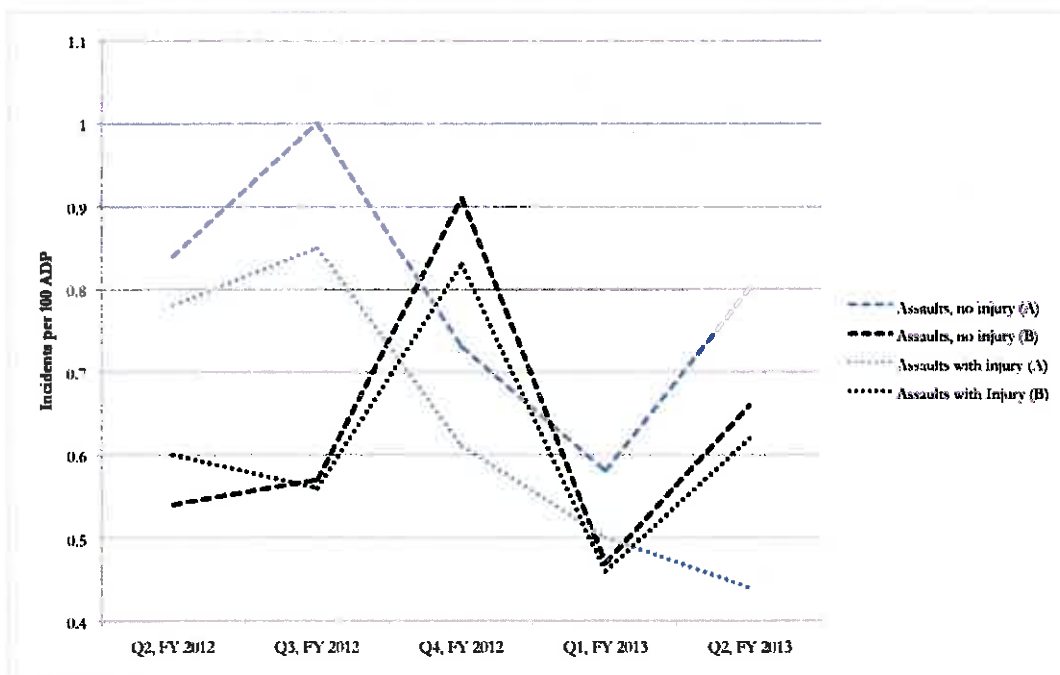


Figure 14: Frequency of Fights and Injuries at the Two Participating Facilities

To understand these patterns better, researchers interviewed staff at both facilities for their insights. As part of a group discussion, ACS staff shared their efforts to change the climate at Facility A by creating a number of new staff positions. While an important investment in the long term, an immediate consequence was that a number of the adults at Facility A were new to the musical residency program and still learning how to help young people meet the high behavioral and social expectations the choir presented. By comparison, at Facility B, many key staff had worked with the program in previous years, knew what to expect, and could actively help participants to set goals for themselves, work on their music in free time, persist even when the demands of solos or choreography made youth feel vulnerable, and encourage young people to reach out to their families to attend the final concert. While these are post-hoc descriptions, these on-the-ground observations point to the kind of partnership between facility and program that may enhance impact: a climate where youth can let down their guard, staff who know and respect the program and who step forward to support it 24/7.

---

## H. Evidence of the Effects of the Residencies on Facilities Data

One additional hypothesis going into the evaluation was that given the numbers of residents involved and positive effects on individual behavior, the overall frequency of reported incidents (e.g., the use of restraints and room confinements, fights, and injuries) would decline relative to pre-residency levels. However, when these data were compared for participants for two-week periods prior to and during the residency, there were no discernable differences. In both periods, very few participants were involved in assaults, altercations, or were placed in restraints or assigned to room confinement. While these data are an important indication of the change at the two facilities, they do not show any impact from the residencies. Conceivably, the most challenging youth chose not to participate in the residency. Alternatively, these broad measures of disruption are not sensitive to more subtle declines in acting out that observational and staff-report measures capture. Whatever the case, these findings point out that currently facilities (and the

youth in them) are monitored chiefly through these broad measures of response to disruption. If juvenile justice facilities are to adopt a youth development framework, then young people, staff, and organizations that partner with the system need a set of system-level measures that index positive developments as well. The choral residency suggests a number of possible indicators: the number of young people who participate in elective opportunities, complete those opportunities, make special contributions, or earn high school credits through programs. Such strength-based measures could help to create an institutional climate that acknowledges strengths and positive growth.

**If juvenile justice facilities are to adopt a youth development framework, then young people, staff, and organizations that partner with the system need a set of system-level measures that index positive developments.**



# V. Discussion and Implications



Using a set of quantitative and qualitative measures, this evaluation study focused on charting changes in young people during a two-week choral residency that was designed to acknowledge and build their strengths. The results show:

- There is initial evidence that a high-quality, high-demand musical residency can affect residents' levels of acting-out behaviors, across two different facilities.
- There is equally important evidence for an interaction between facility and the effects on young people's behaviors. In the facility with a calmer history and a longer association with the musical program there is additional evidence of statistically significant effects on residents' levels of engagement, social networks, and personal conduct.

## A. Limitations of the Study

However, it is important to be cautious. Given the goals of the program to involve all interested residents, the evaluation did not include randomized assignment to control groups. While the participants at Facilities A and B are matched for age and gender, they may vary in their past histories, the physical and mental health needs they have, the seriousness of their offenses, and other variables. While it is clear that the two facilities had different incident histories, it is not clear why that is, and thus, what factors make the effects of the two residencies as different as they are.

Accordingly, we cannot argue conclusively that it was young peoples' musical experiences that

caused the observed changes in their behavior or that it was the climate at the two facilities (as compared to differences in populations, practices, or staff training) that is responsible for the varying pattern of outcomes. Instead, we argue that the findings demonstrate that it is both possible and productive to design strength-based programs and evaluations in settings like secure detention that have long been characterized by an emphasis on control, correction, and the suppression of negative behaviors.

At the same time, the evaluation points to a critical interaction between participants, program, and contexts. Far from being passive, youth actively calibrate their behavior in response to what will help them survive and thrive in a given context (Bertalanffy, 1969). In this sense, what occurred in Facility B in the context of supportive climate and staffing shows that a choral residency can create a distinctive micro-environment where it is adaptive, even rewarding, to make an effort, collaborate, take positive risks, and to forego other isolating, disengaged, or vigilant behaviors. As a result, residents appear to take control of their acting out, persist, earn high school credit, and experience changes in themselves and how others see them.



## B. Implications for Future Work at the Intersection of Juvenile Justice and the Arts

While preliminary, these results have much to say about how we build effective programs that can support the reform of juvenile justice and how we build the evidence for strength-based approaches to juvenile justice. Where programs are concerned, we need to:

- **Harvest and apply what projects like this choral residency tell us about the features of compelling and effective programs for incarcerated youth.** What is the role of a charismatic artistic leader? What role did the young choral mentors play? Did it matter that they “were only two or three decisions away” from the young people they were teaching? How important was the aspirational and culturally relevant content of the songs? Only if young people are attracted and persist can programs have an effect. Only if staff and peers respect the work and support it in “off-hours” does a program have its full impact.
- **Improve the quality of education in the juvenile justice system through the arts.** Impoverished education ranks high among the factors that deter youth development in the juvenile justice system (Southern Educational Foundation, 2014). The relatively high rates of residency completion suggest that the active, participatory nature of the performing arts, and the expressive opportunities embodied in all art forms, attract and sustain young people who may have a checkered history with formal instruction. This speaks to the need for arts and arts-integrated instruction in on-site schools and tutoring programs for students in the correctional system. Potentially, these experiences could be used to establish a new or renewed sense of academic or artistic identity.

- **Build pathways for continued growth across systems.** As youth re-enter their communities, they often return to schools and neighborhoods with few programs for creative learning and few supports for locating such opportunities (Vera, 2011). What would happen to young people’s rates of re-offending if there were “through-the-gate” arts opportunities, where successful completion of training and mentoring programs led to wiping clean youth’s records, high school credit, or internships? Until there are more than isolated opportunities to do creative work, the arts as a potential force for sustained change will never be fully realized.

Realistically, to gain support, these programs will require evidence of impact. For this to occur, researchers working in the fields of the arts and juvenile justice have to:

- **Address the frequent tensions between supporting youth development and pursuing rigorous research design.** For instance, how can we resolve the conflict between serving a maximum number of young people, all of whom want or need to participate, and the random assignment to treatment and control groups required for testing a program’s effectiveness?
- **Challenge the reliance on deficit-based measures and contribute to the development of measures of positive change.** It was challenging to frame and conduct this evaluation as an investigation into youth development through music. Most widely used measures in the juvenile justice field reflect the deficit-and disease-based models, in which progress is defined as the decline in negative behaviors (e.g., the Child Behavior Checklist used in this evaluation). Youth in juvenile justice settings are deemed successful if they don’t lapse during parole, re-enter the system, return to drug use, or fail

high school. We have fewer tools to capture the presence, onset, or development of youth assets. Yet these types of measurement—both quantitative and qualitative—are necessary for feedback to youth and families, for charting the success of services and facilities, and for capturing the effects of programs such as Musical Connections.

- **Conduct finely tuned work.** Given the increasing call for results, this pressure should not drive partners to working in settings where impact is easiest to come by. While Facilities A and B are the “same” type of juvenile justice facility and serve the “same” youth population, the two sites had quite different histories. This raises the question of how to “tune” programs so that they work well *in situ*. For instance, would another week, more collaboration with staff, and a group of youth leaders from inside the facility have amplified the effects of either residency?
- **Move beyond investigating short-term interventions to increasingly longitudinal inquiry.** We know at-risk youth best in moments of crisis like arrest and sentencing. But we know much less about what deters risky behavior, what allows a young person to seek help or new skills while in detention, or what skills and relationships make it possible for a young person to re-enter her community, return to school, and never return to the correctional system.

As the results make clear, the effects of any program occur at the intersection between the environment and the offering. The Administration for Children’s Services in New York City has undertaken its own steps to improve the climate in its secure facilities. ACS has:

- Implemented an intervention model that emphasizes relationships, structure, and de-escalation techniques and minimizes the use of restraints and room confinements as much as possible.
- Enhanced and expanded recreational, cultural, and educational programming at each detention facility, partnering with a range of arts and youth development organizations (Voices UnBroken, Manhattan Theater Club, The Animation Project, Girl Scouts Council of Greater New York, Columbia University, Yoga for Yoga, Row New York, and others.)
- Partnered with Bellevue Hospital as part of a federal grant to bring trauma-informed care and skill workshops to youth in detention.

Exactly as youth proclaimed in the chorus of “Wake Up Everybody”:

The world won’t get no better,  
If we just let it be  
The world won’t get no better  
We gotta change it, yeah, just you and me.

The reform of juvenile justice is mutual work.



# VI. Conclusion

One of the songs residents performed in their final concert was “Unwritten” by Natasha Bedingfield. It was an invitation to young people to speak out, narrating a new chapter in their lives:

No one else, no one else  
Can speak the words on your lips  
Drench yourself in words unspoken  
Live your life with arms wide open  
Today is where your book begins  
The rest is still unwritten.

But the lyrics speak to artists, cultural institutions, and researchers just as clearly. The book of reframing juvenile justice in developmental rather than correctional terms remains unwritten. Public agencies, schools, cultural organizations, and their research partners have to work together “with arms wide open” to write those pages.



# VII. Bibliography

Achenbach, T. M. & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Administration for Children's Services. Retrieved February, 2014 from [http://www.nyc.gov/html/acs/html/statistics/statistics\\_links.shtml](http://www.nyc.gov/html/acs/html/statistics/statistics_links.shtml).

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA, US: Sage Publications, Inc.

Alexander, M. (2010). *The new Jim Crow. Mass incarceration in the age of colorblindness*. New York: The New Press.

Allison, P. D. (2009). Missing data. In R. E. Millsap & A. Maydeu-Olivares (Eds.), *The Sage handbook of quantitative methods in psychology*, 72–89. Thousand Oaks, CA: Sage Publications Ltd.

Anderson, K. & Overy, K. (2010). Engaging Scottish young offenders in education through music and art. *International Journal of Community Music*, 47–64.

Arts Council England (2006). *What's the point? Using drama to engage young people at risk*. Retrieved September, 2011 from <http://tipp.org.uk/cms/documents/document8.pdf>.

Baker, S. & Homan, S. (2007). Rap, Recidivism and the Creative Self: A Popular Music Programme for Young Offenders in Detention. *Journal of Youth Studies*, 459–476.

Benson, P. L., & Pittman, K. J. (2001). *Trends in youth development: Visions, realities, and challenges*. Boston: Kluwer Academic Publishers.

Bernburg, J. & Krohn, M. (2003). Labeling, life chances, and adult crime: The direct and indirect effects of official intervention in adolescence on crime in early adulthood. *Criminology*, 1287–1318.

Bertalanffy, L. (1969). *General system theory: Foundations, development, applications*. New York: George Braziller.

Butts, J. A., Bazemore, G., & Meroe, A. S. (2010). *Positive Youth Justice—Framing Justice Interventions Using the Concepts of Positive Youth Development*. Washington, DC: Coalition for Juvenile Justice.

Carpenter, C. J., Huston, A. C., & Spera, L. A. U. R. A. (1989). Children's use of time in their everyday activities during middle childhood. *The ecological context of children's play*. Norwood, NJ: Ablex Publishing Corporation.

Center for the Study of Art and Community (2007). *Evaluation of Mississippi Core Arts Program*. 1999–2007.

Clawson, H.J., Coolbaugh, K., & United States (2001). *The youthARTS development project*. Washington, DC: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.

Cox, A. & Gelsthorpe, L. (2008). Beats & Bars, music in prisons: an evaluation. *Institute of Criminology, University of Cambridge*.

Daykin, N., De Viggiani, N., Pilkington, P., & Moriarty, Y. (2013). Music making for health, well-being and behaviour change in youth justice settings: a systematic review. *Health promotion international*, 197–210.

- DiIulio, J. (1995). The coming of the super-predators. *Weekly Standard*, 23–29.
- Djurichkovic, A. (2011). Art in prisons: a literature review of the philosophies and impacts of visual arts programs for correctional populations. *UTS Shopfront Student Series*, 3, Art Access Australia, 2011. Retrieved October, 2011 from <http://www.shopfront.uts.edu.au>.
- Durland, S. (1996). Maintaining humanity: Grady Hillman talks about arts in correctional settings. *High Performance*, 71, 35–39.
- Ezell, M., & Levy, M. (2003). An evaluation of an arts program for incarcerated juvenile offenders. *Journal of Correctional Education*, 108–114.
- Fagan, J. (2010). The contradictions of juvenile crime and punishment. *Daedalus* 139, 43–61.
- Gopnik, A. (2012). What's wrong with the teenage mind? *Wall Street Journal*, 1/28/12.
- Griffin, P. (2012). Interview quoted in Wolf, L., & Wolf, D. (2012). *May the Songs I Have Written Speak for Me: An Exploration of the Potential of Music in Juvenile Justice*. Retrieved June, 2013 from [http://wolfbrown.com/images/articles/May\\_the\\_Songs\\_I\\_Have\\_Written\\_Speak\\_for\\_Me.pdf](http://wolfbrown.com/images/articles/May_the_Songs_I_Have_Written_Speak_for_Me.pdf).
- Hazel, N. (2008). *Cross-National Comparison of Youth Justice*, London: Youth Justice Board, 3
- Hickey, M. (In preparation). *Music education and the invisible youth: A summary of research and practices of music education for youth in detention centers*. Evanston, IL: Northwestern University.
- Hillman, G. & Warner, S. (2004). *Arts Programs for Juvenile offenders in Detention and Corrections: a Guide to Promising Practices*. J. Shute (Ed.). National Endowment for the Arts.
- Hughes, J. (2005). *Doing the Arts Justice: a review of literature, practice, and theory*. Research into Arts and Criminal Justice Think Tank (REACTT), United Kingdom.
- Huizinga, D., Schumann, K., Ehret, B., & Elliott, A. (2003). The effect of juvenile justice system processing on subsequent delinquent and criminal behavior: A cross-national study. *Final report to The National Institute of Justice*, Grant, (1999IJCX0037).
- Jelicic, H., Phelps, E., & Lerner, R. M. (2009). Use of missing data methods in longitudinal studies: The persistence of bad practices in developmental psychology. *Developmental Psychology*, 45, 1195–1199.
- Johnson, H., Keen, S. & Pritchard, D. (2011). *Unlocking Value: the economic benefit of the arts in criminal justice*. New Philanthropy Capital. Report commissioned by Arts Alliance. Retrieved April, 2012 from [http://www.philanthropycapital.org/publications/community/unlocking\\_value.aspx](http://www.philanthropycapital.org/publications/community/unlocking_value.aspx).
- Lovelace, A. (2003). Art Changes. Keynote speech at the conference The Arts of Juvenile Justice: Innovative Practices for Transforming Youth, *Motion Magazine*, 1/11/2003. Retrieved August, 2011 from [http://www.inmotionmagazine.com/ac04/al\\_artch.html](http://www.inmotionmagazine.com/ac04/al_artch.html).
- Lovett, A. (2000). *Arts programs for juvenile offenders in corrections—Why? How? So what?* Gainesville, TX: Gainesville State School.
- Manen, C.V. (1991). Drama-imagery processes as socialization: An interdisciplinary perspective. *Journal of Mental Imagery*, 243–293.
- Miles, A. & Clarke, R. (2006). *The Arts in Criminal Justice: A Study of Research Feasibility*, Manchester: Centre for Research on Socio-Cultural Change, University of Manchester.
- National Research Council, Bonnie, R.J., Johnson, R.L., Chemers, B.M., & Schuck, J. (Eds.). (2013). *Reforming juvenile justice: a developmental approach*. Washington, DC: The National Academies Press.
- New York City (2014). *Building on Success: Next Steps in New York City Detention Reform*. Retrieved February, 2014 from [http://www.nyc.gov/html/acs/downloads/pdf/detention\\_reform\\_plan.pdf](http://www.nyc.gov/html/acs/downloads/pdf/detention_reform_plan.pdf).

- New York (State). Task Force on Transforming Juvenile Justice, & Travis, J. (2009). *Charting a new course: a blueprint for transforming juvenile justice in New York State*. Governor David A Paterson's Task Force on Transforming Juvenile Justice. Retrieved May, 2011 from <http://www.vera.org/download?file=2948/Charting-a-new-course-Executive-summary-recommendations.pdf>.
- Office of Juvenile Justice and Delinquency Prevention. (2008). *Annual Report 2008*. Retrieved September, 2011 from <https://www.ncjrs.gov/pdffiles1/ojjdp/225036.pdf>.
- Office of Juvenile Justice and Delinquency Prevention. (a). (n.d.). *Statistical Briefing Book* <http://www.ojjdp.gov/ojstatbb/default.asp>. (In use 9/2011–4/2012)
- Office of Juvenile Justice and Delinquency Prevention.(b). (n.d.). *Correctional Facilities*. Retrieved September, 2011 from <http://www.ojjdp.gov/mpg/progTypesCorrectional.aspx>.
- Piazza, M. (1997). Members only: from the Art Institute of Chicago to the Cook County Juvenile Detention Center. *New Arts Examiner* 24, 32–35.
- Pittman, K., Irby, M., & Ferber, T. (2001). Unfinished business: Further reflections on a decade of promoting youth development. In *Trends in youth development*. Springer US. (3–50).
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, 31, 437–448.
- Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.
- Reiss, D., Quayle, M., Brett, T. & Meux, C. (1998). Dramatherapy for mentally disordered offenders: changes in levels of anger. *Criminal Behaviour and Mental Health*, 139–53.
- Ross, R.R., Fabiano, E., & Ross, R. 1988. (Re) Habilitation through education: A cognitive model for corrections. *Journal of Correctional Education*, 44–47.
- Rutter, M. (2008). “Developing concepts in developmental psychopathology,” in J.J. Hudziak (ed.), *Developmental psychopathology and wellness: Genetic and environmental influences*. Washington, DC: American Psychiatric Publishing, 3–22.
- Saleebey, D. (2000). Power in the people: Strengths and hope. *Advances in social work*, 127–136.
- Sampson, R. J., & Laub, J. H. (1997). A life-course theory of cumulative disadvantage and the stability of delinquency. *Developmental theories of crime and delinquency*, 7, 133–161.
- Schwartz, R. (2000). Juvenile justice and positive youth development. Gary Walker (Ed.) In *Youth Development: Issues, Challenges, and Directions*. Philadelphia: Public/Private Ventures. Retrieved June, 2011 from [http://ppv.issuelab.org/resource/youth\\_development\\_issues\\_challenges\\_and\\_directions](http://ppv.issuelab.org/resource/youth_development_issues_challenges_and_directions).
- Seligman, M. & Csikszentmihalyi, M. (2000). *Positive psychology: An introduction*. American Psychologist, 5–14.
- Sickmund, M. (2010). Juveniles in residential placement, 1997-2008. Washington, DC: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention. Retrieved June, 2011 from <http://www.ncjrs.gov/pdffiles1/ojjdp/229379.pdf>.
- Sickmund, M., Sladky, A., & Kang, W. (2011). Easy Access to Juvenile Court Statistics: 1985–2008. Online. Available from <http://www.ojjdp.gov/ojstatbb/ezajcs>.



Silha, S. (1995). *Young at art: Artists working with youth at risk*. Boise, ID: Idaho Commission of the Arts. Retrieved October, 2011 from <http://www.eric.ed.gov/PDFS/ED407326.pdf>.

Southern Education Foundation. (2014). *Just learning: The imperative to transform juvenile justice systems into effective education systems*. Retrieved May, 2014 from <http://www.southerneducation.org/cmspages/getfile.aspx?guid=b80f7aad-405d-4eeda966-8d7a4a12f5be>.

Survey, D.Y., Huizinga, D., Esbensen, F.A., and Weiher, A.W. (1991). Are there multiple paths to delinquency? *Journal of Criminal Law & Criminology*, 83–118.

Synder, H. N. & Sickmund, M. (2006). *Juvenile Offenders and Victims: 2006 National Report*. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Szekely, G. (1983). Art education in correctional settings. *Journal of Offender Counseling, Services & Rehabilitation*, 5–28.

Ungar, M. (2004). A constructionist discourse on resilience: Multiple contexts, multiple realities among at-risk children and youth. *Youth and Society*, 341–365.

van Poortvliet, M., Joy, I., & Nevill, C. (2010). Trial and error: Children and young people in trouble with the law. *New Philanthropy Capital*.

Vasudevan, L., Stageman, D., Rodriguez, K., Fernandez, E., & Dattatreyan, E. (2010). Authoring new narratives with youth at the intersection of the arts and justice. *Perspectives on Urban Education*, 54–65.

Vera Institute of Justice. (2011). *A Proposal to Expand the Impact for Court-Involved Youth Through the Arts*. New York, NY: Commissioned by Carnegie Hall.

Vera Institute of Justice. (n.d.) Ecograms: A tool for looking at social networks.

Vitaro, F., Tremblay, R. E., & Bukowski, W. M. (2001). Friends, friendships and conduct disorders. *Conduct disorders in childhood and adolescence*, 346–378.

Watson, D. W., Bisesi, L., Tanamly, S., & Mai, N. (2003). Comprehensive Residential Education, Arts, and Substance Abuse Treatment (Creatat) A Model Treatment Program for Juvenile Offenders. *Youth violence and juvenile justice*, 388–401.

Wilson, D., Atherton, S., & Caulfield, L. (2009). Good Vibrations: The long-term impact of a prison-based music project. *Prison Service Journal*, 182.

Wilson, D. & Logan, M. (2006). Breaking down walls: the Good Vibrations Project in prison. Birmingham: Centre for Criminal Justice Policy and Research.

Wilson, J. (2007). Reducing juvenile recidivism in the United States. *Roosevelt Review*. Retrieved April, 2011 from <http://www.rooseveltcampusnetwork.org/policy/reducing-juvenile-recidivism-us>.

Wolf, L., & Wolf, D. (2012). *May the Songs I Have Written Speak for Me: An Exploration of the Potential of Music in Juvenile Justice*. Retrieved June, 2013 from [http://wolfbrown.com/images/articles/May\\_the\\_Songs\\_I\\_Have\\_Written\\_Speak\\_for\\_Me.pdf](http://wolfbrown.com/images/articles/May_the_Songs_I_Have_Written_Speak_for_Me.pdf).



# VIII. Technical Appendix

Ratings of residents' externalizing behaviors, observed prosocial and antisocial behaviors, and eco-maps of potential musical relationships were collected according to a pre-/post-residency design. As such, it was possible to assess change in these measures over time. However, systematic patterns of missingness on each of these measures first had to be assessed. Missingness of data on each of the post-residency measures was regressed on gender, age, facility, and pre-residency scores for the same measure (after Jelcic et al., 2009). Participants at Facility A were more likely to be missing data on the post-residency observation of antisocial behavior ( $B = -2.81 (1.17)$ ,  $p = .016$ ), while older participants were more likely to be missing data on the post-residency rating of externalizing behaviors ( $B = 1.43 (.636)$ ,  $p = .025$ ). However, in no case was missingness of post-residency scores on a given measure related to pre-residency scores. Given their respective relationships with facility and gender, post-residency antisocial and externalizing behaviors were classified as missing at random (MAR).

Change in each measure was examined using a series of multilevel models, in which behaviors at each point in time (pre- and post-residency) were nested within participant. Models were estimated in two steps: first with time (coded 0 = pre-residency, 1 = post-residency), gender, age, and facility included as independent variables, and then with the interaction of time and facility added to the model. Significant interaction terms were interpreted; non-significant interaction terms were discarded and the results of the prior model were interpreted. All models were estimated using the MIXED procedure in SAS 9.3 (SAS Institute, 2013), with full-information maximum likelihood employed to model missing data on the dependent variables (Alison, 2009). Significant

interaction terms were probed according to the guidelines established by Aiken and West (1991) and the online utilities developed by Preacher, Bauer, and Curran (2006).

Significant interactions between time and facility were observed for the number of musician-peers ( $B = 25.0 (10.1)$ ,  $p = .019$ ) and observed antisocial behavior ( $B = -1.52 (.586)$ ,  $p = .011$ ). These interactions were probed by coding facility dichotomously (0 = Facility A, 1 = Facility B) and calculating the simple slopes for musician-peers and antisocial behaviors over time. The simple slope for the number of musician-peers over time was not significantly different than zero for Facility A ( $p = .458$ ). However, at Facility B the simple slope was significant and positive ( $B = 19.1 (6.26)$ ,  $p = .002$ ), indicating an increase in the number of musician-peers reported by residents of this facility. A similar pattern was found for antisocial behaviors: at Facility A there was no significant change in behaviors over time ( $p = .643$ ) but at Facility B a significant decrease in antisocial behaviors was observed ( $B = -1.73 (.387)$ ,  $p < .001$ ). In contrast, no significant interaction between time and facility was observed for reported externalizing behaviors ( $p = .599$ ). Instead, a main effect for time was observed such that externalizing behaviors decreased from the pre-residency to the post-residency assessment ( $B = -9.59 (2.27)$ ,  $p < .001$ ). Neither main nor interaction effects were found for pro-social behaviors.