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UNIVERSITY OF CALIFORNIA,  
IRVINE

Parental Guidance: The Role of Family in Youth Re-Offending

DISSERTATION

submitted in partial satisfaction of the requirements  
for the degree of

DOCTOR OF PHILOSOPHY

in Psychology and Social Behavior

by

Caitlin Anne Cavanagh

Dissertation Committee:  
Professor Elizabeth Cauffman, Chair  
Professor Chuansheng Chen  
Professor Jodi Quas

2016



## TABLE OF CONTENTS

	<b>Page</b>
List of Figures	iv
List of Tables	v
Acknowledgments	vii
Curriculum Vitae	ix
Abstract of the Dissertation	xix
I. Research Objectives and Rationale	1
Study Overview	1
Aim 1	2
Aim 2	2
Overarching Aim	2
II. Review of the Literature	3
Theoretical Foundations	3
Antisocial Behavior During Adolescence	3
Bronfenbrenner's Ecological Model	5
The Microsystem: The Impact of Parents	7
Parental Relationship Affect	9
Socialization Theory	10
The Exosystem: The Impact of Systems	12
The Juvenile Justice System	13
Justice System Legitimacy	14
The Macrosystem: The Impact of Culture	16
Latino Families in the Justice System	16
The Present Study	18
Research Aims and Hypotheses	19
Research Aim 1	20
Research Aim 2	20
III. Methods	21
Overview	21

Sample	22
Crossroads Youth Sampling Procedure	25
Crossroads Mothers Sampling Procedure	26
Procedure	27
Crossroads Youth Procedures	28
Crossroads Mothers Procedures	29
Measures	32
Microsystem-Level Measures	32
Exosystem-Level Measures	33
Macrosystem-Level Measures	35
Plan of Analysis	36
IV. Results	37
Aim 1. Does the mother-child relationship change as a result of youth re-offending?	37
Mothers' Perception of the Relationship	37
Maternal warmth and hostility	38
Son's Offending Trajectories and the Mother-Son Relationship	47
Aim 2. Do mothers' attitudes toward the justice system change over time in response to continued justice system exposure, and do mothers' attitudes socialize youths' attitudes toward the justice system?	62
Mothers' Attitudes Toward the Justice System	62
Youths' Attitudes Toward the Justice System	65
V. Discussion	73
Youth Offending Behavior and the Mother-Son Relationship	73
The Mother-Son Relationship and Youth Reoffending Over Time	73
The Role of Official Re-Arrests	75
Socialization of Justice System Attitudes Over Time	75
Re-arrests and Mothers' Locus of Control	76
The Role of Youth Age	81
The Experience of Latino Families	82
Strengths and Limitations	84
Implications and Conclusion	86
VI. References	90

## LIST OF FIGURES

		<b>Page</b>
Figure 1.	Visual Representation of Bronfenbrenner's Ecological Model	6
Figure 2.	Data Collection Time Points	30
Figure 3.	Youth Age Moderates the Relation Between Mother's Report of Youth Offending and Relationship Warmth	40
Figure 4.	Latino Ethnicity Moderates the Relation Between Mother's Report of Youth Offending and Relationship Warmth	46
Figure 5.	Zero-inflated Poisson Model of Youth Offending Variety	50
Figure 6.	Youth Age Moderates the Relation Between Mothers' Wave 1 Relationship Warmth and Youth Offending Trajectories	55
Figure 7.	Mother's Documentation Status Moderates the Relation Between Youth Re-arrests and Mother's Legal Cynicism at Wave 2	63
Figure 8.	Censored Normal Model of Youth Attitudes Toward Police	66
Figure 9.	Mother's Perception of Youth's Guilt Moderates the Relation Between Youth Re-arrests and Relationship Hostility at Wave 2	78
Figure 10.	Valence of Mother's Justice System Experience Moderates the Relation Between Youth Re-arrests and Relationship Warmth at Wave 2	80

## LIST OF TABLES

		<b>Page</b>
Table 1.	Sample Demographics from Crossroads Youth and Mothers	23
Table 2.	Eligible Charges for Crossroads Youth Participants	25
Table 3.	Retention Rates for Crossroads Youth Participants	29
Table 4.	Results of Change Score Variables for Mothers' Reported Relationship Warmth and Hostility	38
Table 5.	Mother's Reported Relationship Warmth at Wave 2, Regressed on Mother's Wave 1 Relationship Warmth, Contextual Controls, Youth Offending Behavior, and Youth Arrests	41
Table 6.	Mother's Reported Relationship Hostility at Wave 2, Regressed on Mother's Wave 1 Relationship Hostility, Contextual Controls, Youth Offending Behavior, and Youth Arrests	43
Table 7.	Mother's Relationship Warmth at Wave 2, Regressed on Mother's Wave 1 Relationship Warmth, Contextual Controls, and Youth Offending Behavior, as Moderated by Latino Ethnicity	45
Table 8.	Group-Based Trajectory Models for Youth Offending Variety: A Sample of Alternative Models Fitted	48
Table 9.	Multinomial Logistic Regression Results for Mothers' Reported Relationship Warmth by Youth Offending Trajectory	52
Table 10.	Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Warmth by Youth Offending Trajectory	53
Table 11.	Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Warmth by Youth Offending Trajectory, as Moderated by Youth Age	56
Table 12.	Multinomial Logistic Regression Results for Mothers' Reported Relationship Hostility by Youth Offending Trajectory	59
Table 13.	Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Hostility by Youth Offending Trajectory	60
Table 14.	Mother's Legal Cynicism at Wave 2, Regressed on Mother's Wave 1 Legal	64

Cynicism, Contextual Controls, and Youth Re-arrests, as Moderated by Documentation Status

Table 15.	Group-Based Trajectory Models for Youth Attitudes Toward Police: A Sample of Alternative Models Fitted	67
Table 16.	Multinomial Logistic Regression Results for Mothers' Attitudes Toward the Police by Youth Attitudes Toward Police Trajectory	70
Table 17.	Multinomial Logistic Regression Results for Mothers' Attitudes Toward the Police and Youth Re-arrests by Youth Attitudes Toward Police Trajectory	72
Table 18.	Example Responses to Open-ended Question Asking Mothers how their Lives Changed as a Result of their Son's First Arrest	79



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I would like to express my deepest gratitude to my committee chair and advisor, Professor Elizabeth Cauffman. Over the past five years, she has been my fiercest advocate, my most astute critic, and my lifeline both emotionally and academically. Beth is an exemplary role model as a scholar and mentor. I consider my biggest accomplishment in graduate school to be the three years running that I was voted the department's graduate student "most likely to become his/her advisor," because I want to be Beth Cauffman when I grow up.

I would like to thank my committee members, Professor Chuansheng Chen and Professor Jodi Quas, whose excellent work demonstrates the perfect marriage between developmental science and policy-applicable research. I am also appreciative of the many faculty members who have informed my research and professional development over the years, especially Cheryl Maxson and Wendy Goldberg (who served on my advancement committee), Roxane Cohen Silver, and JoAnn Prause. The PSB faculty and staff have created a positive, collaborative academic environment of which I am grateful to have been a part.

Data could not have been collected without the help of many research assistants over the years. I would especially like to thank Sarah Miltimore for her leadership as the Crossroads Project Coordinator, and for being a steadfast source of support over the past five years. I also would like to thank the Crossroads Principal Investigators, Professor Elizabeth Cauffman, Professor Paul Frick, and Professor Laurence Steinberg, for generously allowing me to use a portion of their data for this project. Finally, I am indebted to the families who participated in this study. Many chose to share personal and emotional experiences with our research team, and I am grateful for their candidness.

Financial support was provided by the American Psychology-Law Society (AP-LS), the American Psychological Association (APA), the University of California Institute for Mexico and the United States (UC MEXUS), the Mamie Phipps Clark Foundation, and Psi Chi.

To the many lifelong friends I have made within the graduate community at UCI: I am in awe of what each of you has and will accomplish, both within and outside academia. I would particularly like to thank Janice Phung for bringing me a cake on every birthday and for demonstrating integrity in all aspects of her life. To the Cats of Academia: thanks for the unconditional love. To the 3D lab: it has been a privilege to share office space, potluck meals, hotel rooms, drafts, and laughs with you.

I would like to thank my family, especially my parents, Joe and Maureen Cavanagh. Thanks to my dad for telling me in 6<sup>th</sup> grade that one's effort mattered more than one's knowledge, a message that

truly changed my worldview. Thanks to my mom for normalizing—and inserting fun into—the process of writing and revising before I was old enough to receive my first homework assignment. Above all, thank you both for believing I was talented (even when my preschool teacher thought otherwise), and for loving me profoundly.

Finally, Brant Wells deserves a great deal of thanks for taking every step of this journey next to me. I could joke about all the meals he has cooked me, but the sustenance he offers extends far beyond food. He has encouraged me wholeheartedly quite literally since the moment I was accepted to UCI's doctoral program-- despite the many sacrifices he has made along the way to help me succeed. There is no one else I'd rather have on my team; I love you.

## CURRICULUM VITAE

### CAITLIN CAVANAGH

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#### EDUCATION

---

UNIVERSITY OF CALIFORNIA, IRVINE

IRVINE, CA

**2016 Ph.D. in Psychology and Social Behavior**

**Major:** Developmental Psychology

**Minor:** Psychology and Law

**Minor:** Quantitative Methods

**Dissertation title:** Parental Guidance: The Role of Family in Youth Re-Offending

**Committee members:** Elizabeth Cauffman, Ph.D. (chair)

Chaunsheng Chen, Ph.D.

Jodi Quas, Ph.D.

**2013 Master of Arts in Social Ecology**

**Thesis title:** Mothers' and Sons' Justice System Legitimacy Attitudes and Juvenile Recidivism

**Committee members:** Elizabeth Cauffman, Ph.D. (chair)

Chaunsheng Chen, Ph.D.

Nicholas Scurich, Ph.D.

UNIVERSITY OF ROCHESTER

ROCHESTER, NY

**2011 Bachelor of Arts in Psychology and Spanish (Summa Cum Laude)**

**Major:** Clinical and Social Psychology (Honors and Highest Distinction)

**Major:** Spanish Language and Culture (Highest Distinction)

#### AWARDS, HONORS, AND GRANTS

---

- 2016** UC Irvine School of Social Ecology Dean's Dissertation Writing Fellowship  
Society for Research on Adolescence (SRA) Emerging Scholar Travel Award  
UC Irvine Center for Psychology & Law AP-LS Travel Award  
UC Irvine School of Social Ecology Graduate Mentor Award  
UC Irvine Doctoral Hooding Ceremony Student Speaker  
UC Irvine School of Social Ecology Alumni Fellowship

- 2015** UC Irvine Alison Clarke-Stewart Graduate Dissertation Award  
 UC Irvine School of Social Ecology Graduate Mentor Award  
 Diversity Research Award from the AP-LS Minority Affairs Committee  
 UC Irvine Pedagogical Fellowship  
 Michael Sullivan Diversity Scholarship, American Psychological Association  
 University of California Institute for Mexico and the United States (UC MEXUS)  
 Dissertation Grant
- 2014** Mamie Phipps Clark Research Grant, Psi Chi Honor Society  
 UC Irvine Competitive Edge Summer Mentorship Program Fellowship  
 UC Irvine School of Social Ecology Graduate Mentor Award  
 Society for Research on Adolescence (SRA) Emerging Scholar Travel Award  
 American Psychology-Law Society (AP-LS) Grants-in-Aid
- 2013** UC Irvine School of Social Ecology Graduate Mentor Award  
 UC Irvine Alison Clarke-Stewart Excellence in Research Award  
 Ford Foundation Graduate Research Fellowship Honorable Mention  
 National Science Foundation Graduate Research Fellowship Program Honorable Mention  
 University of California Institute for Mexico and the United States (UC MEXUS) Small  
 Grant Award
- 2012** UC Irvine School of Social Ecology Graduate Mentor Award  
 American Psychology-Law Society (AP-LS) Graduate Research Grant  
 Psi Chi Honor Society Graduate Student Research Grant
- 2011** University of California, Irvine, Dean's Fellowship, 2011-2012  
 Association for Criminal Justice Research (ACJR) scholarship
- 2010** Take Five Scholarship, University of Rochester 2010-2011  
 Phi beta Kappa National Honor Society, University of Rochester, 2010  
 Wilder Trustee Scholarship, University of Rochester 2006  
 Dean's List all eligible semesters, University of Rochester 2006-2010

## **RESEARCH EXPERIENCE**

UNIVERSITY OF CALIFORNIA, IRVINE

IRVINE, CA

**2011-16 Development, Disorder, and Delinquency Lab Graduate Researcher**

*(Mentored by Elizabeth Cauffman, Ph.D.)*

Investigated how 1,216 first-time adolescent offenders navigate the justice system, given contextual, emotional, and psychosocial factors

Graduate Student Researcher (GSR) in charge of coordinating data for this multi-site study (conducted in 3 states) and training undergraduate Research Assistants

UNIVERSITY OF ROCHESTER

ROCHESTER, NY

**2009-10 Emotion and Personality Development Lab Research Assistant**

*(Mentored by Mandi Burnette, Ph.D.)*

Investigated how emotional and personality factors evolve across the lifespan, as they relate to antisocial behavior

Assisted with data collection on a study of maltreated and non-maltreated girls aged 10-13, and their mothers

Designed and implemented a large web survey of young adult risky behaviors, including survey design, recruitment across college campuses and web forums, data set organization, and data analysis

**2007-08 Relationship Laboratory Research Assistant**

*(Mentored by Ed Deci, Ph.D.)*

Studied how randomly paired strangers form relationships online, testing hypothesis that a higher number of online interactions and greater length of conversation could lead to greater perceived closeness with the partner and a greater liking of the partner.

Worked with participants to set up and facilitate online interactions; and archived and organized data

**2006-07 Motivation and Well-Being Laboratory Research Assistant**

*(Mentored by Richard Ryan, Ph.D.)*

Studied interaction between pairs of strangers playing cooperative games after mood was primed for autonomy, testing hypothesis that pairs primed in autonomy would demonstrate more creativity, cooperation, and engagement in the interaction.

Worked with participants, supervising survey portions and filming interactions; and archived and organized data using SPSS

MASONIC MEDICAL RESEARCH LABORATORY

UTICA, NY

**2007 Summer Fellow in Molecular Genetics**

*(Mentored by Hector Barajas, Ph.D.)*

Performed ECG, patch-clamp analysis, transfecting, and cell culturing to research effects of KCNQ1 gene mutation in cardiac potassium channels related to Brugada Syndrome

## PUBLICATIONS

---

- Fine, A., **Cavanagh, C.**, Donley, S., Cauffman, E., Steinberg, L., & Frick, P. (in press). The role of peer arrests on the development of youths' attitudes towards the justice system. *Law & Human Behavior*.
- Cauffman, E., Skeem, J., Dmitrieva, J., & **Cavanagh, C.** (2016). Comparing the stability of psychopathy scores in adolescents vs. adults: How often is “fledgling psychopathy” misdiagnosed? *Psychology, Public Policy, and Law*, 22, 77-91.
- Tatar, J., **Cavanagh, C.**, & Cauffman, E. (2016). The Importance of (Anti)social Influence in Serious Juvenile Offenders with Psychopathic Traits. *Psychology, Public Policy, & Law*, 22, 92-104.
- Cavanagh, C.**, & Cauffman, E. (2015). Viewing law and order: Mothers' and sons' justice system legitimacy attitudes and juvenile recidivism. *Psychology, Public Policy, & Law*, 21, 432-441.
- Cauffman, E., **Cavanagh, C.**, Donley, S., & Thomas, A. (2015). Adolescent development and juvenile justice. In A. Piquero (Ed.) *Handbook of Criminology*.
- Cavanagh, C.**, & Cauffman, E. (2015). Land of the free: Undocumented families in the juvenile justice system. *Law and Human Behavior*, 39, 152-161. <http://dx.doi.org/10.1037/lhb0000097>
- Bechtold, J., **Cavanagh, C.**, Shulman, E. P., & Cauffman, E. (2013). Does mother know best? Adolescent and mother reports of impulsivity and subsequent delinquency. *Journal of Youth and Adolescence*, 1-11. doi: 10.1007/s10964-013-0080-9

## PUBLICATIONS REVISED AND RESUBMITTED OR UNDER REVIEW

- Cavanagh, C.**, & Cauffman, E. (revised and resubmitted). What they don't know *can* hurt them: Mothers' legal knowledge and youth reoffending.
- Hawes, S., Byrd, A., **Cavanagh, C.**, Bechtold, J., Lynam, D., Loeber, R., & Pardini, D. (under review). The developmental course of psychopathic features: Investigating stability, change, and long-term outcomes.
- Fine, A., Donley, S., **Cavanagh, C.**, Miltimore, S., Steinberg, L., Frick, P., & Cauffman, E. (revised and resubmitted). The role of contextual extra-legal factors in processing decisions among first-time juvenile offenders.
- Fine, A., **Cavanagh, C.**, Frick, P., Steinberg, L., & Cauffman, E. (revised and resubmitted). Callous-Unemotional Traits and probation officer ratings of remorse among first-time juvenile offenders. *Psychological Assessment*.
-

## PROFESSIONAL PRESENTATIONS

---

- Cavanagh, C., & Cauffman, E.** (2016, April). Symposium Chair, The Family Context as a Resource: Parent-Adolescent Relationships and Problem Behaviors. *Change in the parent-child relationship following an adolescent's first arrest*. Paper presented at the Society for Research on Adolescence Biennial Meeting, Baltimore, MD.
- Fine, A., **Cavanagh, C.**, Donley, S., Steinberg, L., Frick, P., & Cauffman, E. (2016, April). The Role of Peer Arrests on the Development of Youths' Attitudes towards the Justice System. Paper presented at the Society for Research on Adolescence Biennial Meeting, Baltimore, MD.
- Cauffman, E., **Cavanagh, C.**, & Simmons, C. (2016, April). Substance Use Among First-Time Juvenile Offenders. Paper presented at the Society for Research on Adolescence Biennial Meeting, Baltimore, MD.
- Cavanagh, C.**, & Cauffman, E. (2016, April). Mothers' and Sons' Expectations for the Future. Paper presented at the Society for Research on Adolescence Biennial Meeting, Baltimore, MD.
- Cavanagh, C.**, Fine, A., Donley, S., Miltimore, S., & Cauffman, E. (2016, March). *The Role of the Home Environment in Probation Processing Decisions for First-Time Youth Offenders*. Paper presented at the American Psychology-Law Society Conference, Atlanta, GA.
- Cavanagh, C.**, & Cauffman, E. (2016, March). *How does the Parent-Adolescent Relationship Change Following a Youth's Arrest?* Poster presented at the American Psychology-Law Society Conference, Atlanta, GA.
- Cavanagh, C.**, & Cauffman, E. (2015, October). *The impact of juvenile justice processing on the change in the parent-adolescent relationship over time*. Poster session presented at the UC Consortium on Social Science and Law, Irvine, CA.
- Simmons, C., **Cavanagh, C.**, Cauffman, E., Frick, P.J., & Steinberg, L. (2015, October). *Father-child relationship quality and adolescent offending*. Poster session presented at the UC Consortium on Social Science and Law, Irvine, CA.
- Grisso, T. (Presenter), **Cavanagh, C.** (Moderator), & LaDuke, C. (Producer) (2014, December). How science and advocacy reformed 21<sup>st</sup> century juvenile justice [Webinar]. In *American Psychology-Law Society (APA Division 41) Student Committee Webinar Series*. Retrieved from <http://www.apls-students.org/webinars>.
- Cauffman, E. & **Cavanagh, C.** (2014, November). *The transition to adulthood among youth tried as adults: Findings from the Pathways to Desistance study*. Paper presented at the American Society of Criminology Annual Meeting, San Francisco, CA.

- Cavanagh, C., & Cauffman, E.** (2014, November). *Parental knowledge of the juvenile justice system and youth probationary success*. Poster session presented at the Society for Research on Child Development Special Topics Meeting on Parenting-at-Risk, San Diego, CA.
- Cavanagh, C., & Cauffman, E.** (2014, October). *The Crossroads Study: What do we know about first time juvenile offenders?* Paper presented at the Association of Criminal Justice Research Annual Conference, Irvine, CA.
- Cavanagh, C., & Cauffman, E.** (2014, March). Symposium Chair, Familial Justice System Contact and Adolescent Development. *Familial arrests and relationships: Implications for serious youth offenders*. Paper presented at the Society for Research on Adolescence Biennial Meeting, Austin, TX.
- Cavanagh, C., & Cauffman, E.** (2014, March). *Undocumented families in the juvenile justice system*. Paper presented at the Society for Research on Adolescence Biennial Meeting, Austin, TX.
- Cavanagh, C., Cauffman, E., Frick, P., & Steinberg, L.** (2014, March). *Knowledge is power: Parents and youth probationary success*. Paper presented at the American Psychology-Law Society Conference, New Orleans, LA.
- Cavanagh, C. & Cauffman, E.** (2013, September). *Youth justice system legitimacy attitude development and juvenile recidivism*. Poster presented at the New Beginnings Partnership Conference for Children and Families in Los Angeles County, Los Angeles, CA.
- Cavanagh, C., Cauffman, E., Frick, P., & Steinberg, L.** (2013, April). Symposium Chair, Family Matters: Parents, Youth, and Antisocial Behavior. *Mothers' and sons' attitudes toward the justice system and implications for delinquency*. Paper presented at the Society for Research on Child Development, Seattle, WA.
- Cavanagh, C., Cauffman, E., Frick, P., & Steinberg, L.** (2013, March). *Like mother like son: attitudes and antisocial behaviors*. Paper presented at the American Psychology-Law Society Conference, Portland, OR.
- Cavanagh, C.** (2010, May) *Endorsement of antisocial behaviors and psychopathy in a normative sample*. Paper presented at the University of Rochester Clinical and Social Psychology Department annual Honors Thesis Defense Symposium, Rochester, NY.
- Ragbeer, S.N., Liebman, R.E., Lax, R.E., **Cavanagh, C.**, DeAngelis, R., & Burnette, M.L. (2010, March). *Never have I ever: Psychopathy and illicit behaviors among young adults*. Paper presented at the American Psychology-Law Society Annual Conference, Vancouver, CA.
- Cavanagh, C.** (2007, August). *A novel mutation in the KCNQ1 gene and its role in a familial case of Brugada syndrome*. Talk presented at the Masonic Medical Research Laboratory Annual Summer Symposium, Utica, NY.



## SERVICE AND LEADERSHIP

---

### SOCIETY FOR RESEARCH ON ADOLESCENCE

**2016-20 SRA Executive Council Emerging Scholar Representative**

Nationally elected position responsible for representing students and early career professionals on the SRA Executive Council

**2016-20 SRA Emerging Scholar Committee Co-Chair**

Nationally elected position responsible for managing 15 Emerging Scholar representatives on various SRA committees; includes organizing programming at the Biennial Meeting as well as webinars and blog posts between meetings

### AMERICAN PSYCHOLOGY-LAW SOCIETY

**2015-16 Experimental Liaison, AP-LS Student Committee**

Nationally elected position responsible for outreach between researchers and students interested in psychology and law, as well as coordinating AP-LS Student events

**2014-16 Communications Committee Member, AP-LS**

Volunteer subcommittee position responsible for working with other members to improve communication within the organization to foster dialogue and a sense of community among AP-LS members

**2014-15 Communications Officer, AP-LS Student Committee**

Nationally elected position responsible for all public communications of the Student Committee to AP-LS Student Members, and advertising for AP-LS Student events; oversees, moderates, and curates the AP-LS Student Committee social media sites

### UNIVERSITY OF CALIFORNIA, IRVINE

IRVINE, CA

**2015-16 Pedagogical Fellow**

Selected from among graduate students campus-wide to provide pedagogical workshops and teaching consultations through UCI's Center for Engaged Instruction

**2015-16 Verano Residents Council**

Campus-wide elected position responsible for overseeing programming and budget for UCI graduate student housing

**2014-15 Graduate Student Recruitment Liaison**

Coordinated the interview schedules and programming, and arranged accommodations for 35 prospective graduate students in Psychology and Social Behavior

**2013-16 TransScripts Journal Editor**

Organize yearly journal theme and craft accompanying Call for Papers  
Evaluate and edit high-quality research for inclusion in the journal

UNIVERSITY OF ROCHESTER

ROCHESTER, NY

**2008-10 National Psychology Honor Society Psi Chi Business Manager**

Managed funds and directed charitable donations and planned and implemented community-building programs

**POLICY EXPERIENCE**

---

UNIVERSITY OF CALIFORNIA

SAN FRANCISCO, CA

**2015-16 Selected Member of the UC Criminal Justice and Health Consortium**

Attend biannual consortium meetings; draft policy briefs to disseminate research

MACARTHUR FOUNDATION

CHICAGO, IL

**2014-16 Secretary for MacArthur Foundation Juvenile Justice Threat Assessment Panel**

Attend and take notes at triannual group meetings; draft summary reports

EUROPEAN UNION PARLIAMENT

BRUSSELS, BELGIUM

**2010-11 Intern for European Union Parliament**

Interned for Member of European Parliament Barbara Matera

Attended and summarized committee meetings for Women's Rights and Budgetary

Control, drafted speeches and presentations

**TEACHING AND MENTORSHIP**

---

UNIVERSITY OF CALIFORNIA, IRVINE

IRVINE, CA

**2016 Course Developer for Psychology and Social Behavior course**

Invited to develop the content and materials for a course entitled, "Adolescent Development" as part of UCI's undergraduate major in Psychology and Social Behavior

**2015-16 Course Developer for Online Master's Program**

Invited to develop the content and materials for a course entitled, "Child Development, Law, and Social Policy" as part of UCI's online Master's program in Legal and Forensic Psychology

**2015 TA Professional Development Program Developer and Leader**

Designed and implemented a 1.5-day TA training program for all new graduate students in the School of Social Ecology. Training included introduction to, and practice with, active/collaborative learning; grading; leading discussion; academic policies

**2014 Competitive Edge Mentor**

Advised an incoming graduate student one-on-one to develop and execute an independent summer research project

**2011-16 Undergraduate Research Opportunities Program (UROP) Mentor**

Oversee team of undergraduate researchers in developing an empirical research question; aid in the team's securing of funds, as well as application to, and presentations at, a total of 14 professional conferences

*Mentored Grant Funding*

2016 Western Psychological Association Scott C. Fraser Student Award

2016 Undergraduate Research Opportunities Program (UROP) grant

2015 Western Psychological Association Student Scholarship Award

2015 Undergraduate Research Opportunities Program (UROP) grant

2014 Undergraduate Research Opportunities Program (UROP) grant

2013 Undergraduate Research Opportunities Program (UROP) grant

2012 Undergraduate Research Opportunities Program (UROP) grant

**2013-16 Letters to a Pre-Scientist Mentor**

Mentor at-risk elementary school student to garner interest in careers in science

UNIVERSITY OF ROCHESTER

ROCHESTER, NY

**2009-11 Peer Tutor and Note-taker**

Provided individual tutoring for undergraduates in psychology and Spanish classes

Took class notes for students with learning disabilities

ONEIDA CITY SCHOOL DISTRICT

ONEIDA, NY

**2008-11 Substitute Teacher, K-12**

**INVITED GUEST LECTURES AND TALKS**

---

Cavanagh, C., (2016, March). *Adolescent Development and the Juvenile Justice System*.

Transforming Orange County through Kinship and Restorative Justice Roundtable, Newkirk Alumni Center, University of California, Irvine.

Cavanagh, C., (2016, February). *Adolescent Autonomy Development*. Adolescent Development undergraduate class, University of California, Irvine.

Cavanagh, C. (2015, October). *Applying to Graduate Programs in Psychology*. Psychology and Law Independent Studies undergraduate class, University of California, Irvine.

- Cavanagh, C., (2015, September). *Not Guilty by Reason of Adolescence*. Henan, China High People's Court Training Program, California State University, Dominguez Hills.
- Cavanagh, C., (2015, July). *Social Psychological Perspectives on Violence and Aggression*. Social Animal undergraduate class, University of California, Irvine.
- Cavanagh, C., (2015, April). *Your Path to Higher Education*. Los Angeles County Gang Diversion Team Annual Meeting.
- Cavanagh, C., (2015, April). *Parental Guidance: The Role of Family in Youth Probationary Success*. UC Irvine Psychology and Social Behavior Departmental Colloquium Series.
- Cavanagh, C. (2014, November). *So, You're Thinking About Graduate School: Tips for Applying to Graduate Programs in Psychology*. Psychology and Law Independent Studies undergraduate class, University of California, Irvine.
- Cavanagh, C., (2014, October). *The Role of Family in Youth Probationary Success*. Research Methods undergraduate class, Saddleback College.
- Cavanagh, C., (2014, July). *Aggression and Violence*. Social Animal undergraduate class, University of California, Irvine.
- Cavanagh, C., (2014, May). *Parents of Justice System-Involved Youth*. Research Methods graduate class, University of California, Irvine.
- Cavanagh, C., (2013, April). *Features of Measurement in Psychological Research*. Research Methods undergraduate class, University of California, Irvine.
- Cavanagh, C., (2013, February). *Adolescent Achievement*. Adolescent Development undergraduate class, University of California, Irvine.

#### **PROFESSIONAL MEMBERSHIPS**

---

- 2012-16** Society for Research on Adolescence (SRA)
- 2012-16** Society for Research on Child Development (SRCD)
- 2012-16** American Psychology-Law Society (AP-LS)

## ABSTRACT OF THE DISSERTATION

Parental Guidance: The Role of Family in Youth Re-Offending

By

Caitlin Anne Cavanagh

Doctor of Philosophy in Psychology and Social Behavior

University of California, Irvine, 2016

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In order to understand how youth desist from crime after their first arrest, it is necessary to investigate their primary support system: their parents. This dissertation examined the reciprocal effects of justice system contact on the mother-child dyad from an ecological perspective. Interviews with 282 mothers and their sons, first-time offenders, were conducted semiannually over two and a half years, and group trajectory modeling was employed. Results revealed that a high quality *initial* mother-son relationship reduces youth re-offending over time. Furthermore, as mothers *perceived* that their sons were offending more, they reported less warmth and more hostility in their relationships with their sons two and a half years later. Additionally, mothers' attitudes toward police informed youths' attitudes over time, above and beyond the effect of re-arrests.

Youth age and Latino cultural factors emerged as moderators. First, older youth were particularly protected from reoffending by warm maternal relationships, and decreases in

relationship warmth associated with re-offending were steeper for younger youth. Second, Latino families experienced a sharper decrease in warmth in response to mother's perception of youth offending as compared to non-Latino families. Likewise, undocumented mothers became more cynical toward the justice system than documented mothers when their sons were re-arrested.

Notably, mothers expressed more legal cynicism when their sons had been re-arrested compared to those whose sons had not been re-arrested, but re-arrests did not affect the quality of the mother-son relationship. Rather, mothers who felt that their sons were treated *unjustly* perceived additional arrests to be the fault of an unfair system rather than their child's behavior. When mothers perceived that the system acted in a just manner, youth reoffending behavior (either perceived by the mother or an actual re-arrest) was seen as a failure on the son's part, not the system's, leading to reduced warmth. These results highlight the importance of a fair procedure in juvenile justice contacts, particularly when families initiate their first justice system experience. The repercussions of fair treatment during the first arrest endure long after the arrest, and affect multiple areas of functioning within the family.

## **I. Research Objectives and Rationale**

### **Study Overview**

The present dissertation examines the effects of justice system contact on the mother-child dyad, and the reciprocal effects of the mother-son relationship on youth offending trajectories and justice system attitudes. To achieve this goal, a two-and-a-half-year longitudinal investigation of the family context for youthful offenders was conducted. The resulting research provides a more complete picture of the path to success for juvenile offenders by (1) considering the role of the family in which youthful offenders are embedded both during and after justice system contact, and (2) conceptualizing justice system contact as a process rather than a singular event. Findings have implications for juvenile justice policy in terms of improving probationary outcomes for youth offenders, and alleviating the financial and emotional burden on justice system-involved families.

The present study includes a racially and ethnically diverse sample of male first-time offenders (ages 13-17 years at study enrollment) and their mothers (N= 282 pairs, 564 individuals) in Orange County, California. Youth were interviewed semi-annually over the two and a half years following their first arrest. Mothers were interviewed 6 months after the youth's first arrest, and re-interviewed two and a half years later. Self-report data from youth and

mothers was augmented through official re-arrest records. The dissertation is designed to consider two principle aims:

**Aim 1.** *“Does the mother-child relationship change as a result of youth re-offending?”* I will assess both the son’s and the mother’s perception of the nature and quality of their relationship (e.g., warmth and hostility) over time. Relationships are dynamic and reciprocal; trajectories of offending behavior will be measured in conjunction with change in the quality of the mother-son relationship (as perceived by each member) to examine the extent to which a youth’s re-arrests and self-reported offending do (or do not) disrupt the dyadic relationship.

**Aim 2.** *“Do mothers’ attitudes toward the justice system change over time in response to continued justice system exposure, and do mothers’ attitudes socialize youths’ attitudes toward the justice system?”* There is evidence that parents’ attitudes shape their children’s attitudes, which (in the case of attitudes toward the justice system) may shape youth re-offending. Additionally, accrued experiences in the justice system (e.g., re-arrests) may alter mothers’ and sons’ attitudes toward the system. I will measure changes in mothers’ attitudes toward the justice system (and resulting changes in youths’ attitudes) over time in response to youth re-arrests.

**Overarching Aim.** Given the racial/ethnic composition of the sample (>50% Latino) and the over-representation of minority youth in the juvenile justice system (Piquero, 2008), the present study would be remiss not to acknowledge the integral role that race/ethnicity and culture



play. Specifically, cultural factors like English fluency, documentation status, and acculturation may affect the type of support families are able to provide to their children while on probation. Each of the two primary aims will be examined through the lens of culture, focusing specifically on Latino families.

## **II. Review of the Literature**

### **Theoretical Foundations**

**Antisocial Behavior During Adolescence.** Antisocial behavior among adolescents is common. The classic “age-crime curve” describes a well-documented inverted U-shaped pattern in which antisocial behavior increases during adolescence, peaks around age 17, and declines into adulthood (Farrington, 1986; Tremblay & Nagin, 2005) before plateauing at very low levels after the third decade of life (Farrington, Loeber, & Howell, 2012).

The spike in antisocial behavior during adolescence is better understood by framing antisocial behavior as a specific type of general risk taking (Steinberg, 2013). Adolescents are more likely than children or adults to take risks (Steinberg, 2008), even when such risks are non-criminal in nature. In fact, the same inverted U-shaped curve observed in the relation between age and crime is seen for a number of adverse risk taking behaviors, including accidental drowning, self-inflicted injury (Center for Disease Control and Prevention, 2014), and driver deaths (Naumann, Dellinger, Zaloshnja, Lawrence, & Miller, 2010). Adolescent risk-taking--

including antisocial behavior-- is characterized by impulsive acts committed without thought to their consequences. This results from a “mismatch” in growth between capacities relevant to risk-taking: while improved cognitive abilities develop early in adolescence (Kuhn, 2009), psychosocial factors continue to develop into early adulthood (Steinberg & Cauffman, 1996). For this reason, theoretical (see Moffitt, 1993) and empirical research has conceptualized adolescent-limited antisocial behavior as ephemeral and perhaps even developmentally normative.

Although the spike in antisocial behavior during adolescence may indeed be normative, for some youth, this behavior is detected by law enforcement and results in an arrest. In fact, approximately 1.5 million adolescents are arrested each year, and between 10% and 15% of arrests nationwide are minors under the age of 18 (United States Department of Justice, 2009; 2012). Although it is well established that most youth both begin and end their criminal careers during adolescence, the consequences of justice system contact can affect youths’ lives well beyond the adolescent years; juvenile court involvement reduces the likelihood of high school completion (De Li, 1999; Sweeten, 2006), and reduces lifetime earnings (Steinberg, 2009).

Following a youth’s first arrest, future crime desistance is a critical sign of rehabilitation. In order to understand the mechanisms of support available to juvenile offenders, it is necessary to investigate youths’ primary support system: their parents. Additionally, just as parents may affect youth’s successful desistance from crime, it is important to understand the juvenile justice

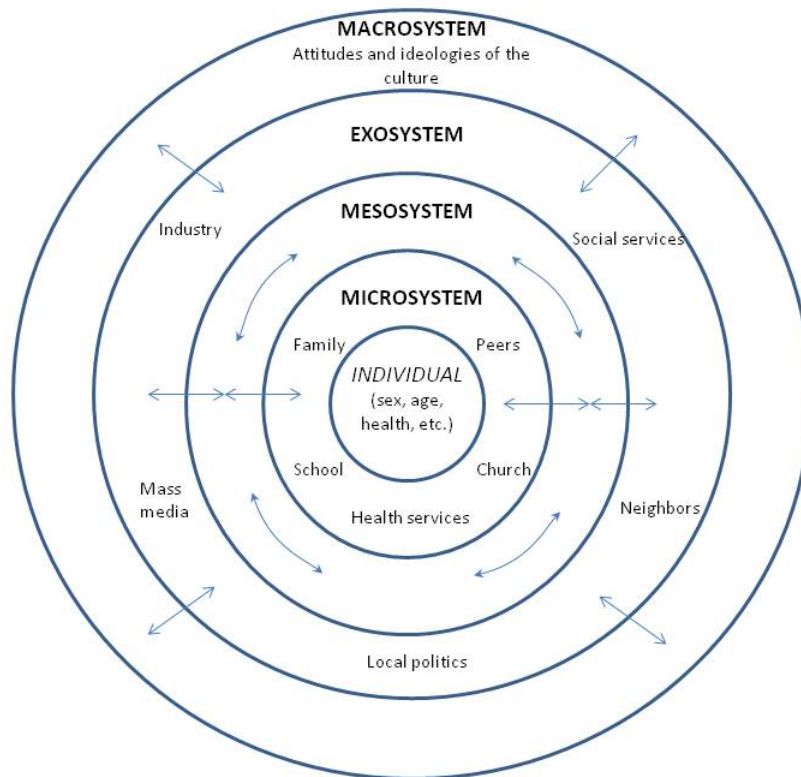
system's potential to positively or negatively influence the parent-child relationship. The present dissertation is interested in the reciprocal influence of the mother-son relationship and youth reoffending among first-time juvenile delinquents.

**Bronfenbrenner's Ecological Model.** Juvenile offenders exist in a broader context, a major portion of which includes their parents. To examine the impact of a child's first arrest on the parent-child relationship, the simultaneous and reciprocal influence of several layers of contexts must be accounted for. This dissertation employs Bronfenbrenner's ecological framework as a guide to study the role of these multiple systems (with a special emphasis on parents) as they affect youths' criminal behavior. Specifically, a youth's microsystem (e.g., the dyadic mother-son relationship), exosystem (e.g., the juvenile justice system), and macrosystem (e.g., cultural expectations) may interact over time to shape both the youth's and his family's behavior following a first arrest.

Urie Bronfenbrenner promoted an ecologically valid, dynamic, and multisystemic approach to research in developmental psychology (Lerner, 2002). In his Ecological Model, individuals do not exist in isolation. Instead, individuals are embedded in a broader social network, within which each person is shaped by a series of concentric systems, the relations between which are continually changing across time. In short, the individual and his context cannot be separated (Bronfenbrenner, 1977, 1992). Bronfenbrenner's Ecological Model

demarcates these overlapping systems into four components: (1) *the microsystem*, which describes an individual's direct social network (e.g., immediate family, close friends); (2) *the mesosystem*, or the schools, neighborhoods, and other groups that comprise the individual's broader social network; (3) *the exosystem*, which includes broader political structures and social services; and (4) *the macrosystem*, which involves the dominant ideologies, values, and beliefs associated with an individual's culture (Bronfenbrenner, 1977, 1992). Figure 1 displays the model visually.

Figure 1. Visual Representation of Bronfenbrenner's Ecological Model.



**The Microsystem: The Impact of Parents.** The primary focus of this dissertation is the mother-son relationship following a youth's first arrest. Bronfenbrenner's model conceptualizes one's immediate family relationships as the closest system to the individual: the microsystem. In developmental psychology, it is undisputed that adolescents rely on their parents for emotional and instrumental support (see Laursen & Collins, 2009 for a review), and parents transmit their beliefs and attitudes to their children (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Degner & Dalege, 2013). There is also evidence that high parental aspirations for their children are associated with resilience in adolescence (Schoon, Parsons, & Sacker, 2004), and that supportive parenting may reduce continued delinquency among youthful offenders (Palmer & Hollin, 2001).

Although there is a widespread assumption that across adolescence, parent-child relationships decline in quality and parents wane in influence relative to peers, developmental models emphasize stable features of the parent-child relationships (Laursen & Collins, 2009). Parents continue to serve as an emotionally secure base for children well into adolescence (Laursen & Collins, 2009). However, any given interaction between a parent and child can only be understood in light of its (dis)continuity with prior relationship functioning (Maccoby, 1992). Although it is true that parents and adolescents with a history of a strong, responsive relationship are likely to continue to share a warm bond through the adolescent period (Laursen & Collins,

2009), the tone and tenor of the behaviors that characterize the parent-child relationship change as children mature through adolescence (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996), and the parent-child roles are re-negotiated (Collins, 1997).

For this reason, a focus on a single informant or instance in isolation is less effective than a dual-informant, multi-assessment portrayal of the parent-adolescent relationship. Family members experience family relationships differently; it is critical to understand how the parent and the child perceive both his or her own behavior as well as the behavior of their partner (Laursen & Collins, 2009). Additionally, parenting practices influence adolescents' behaviors, which in turn elicit a certain set of parenting reactions (Laursen & Collins, 2009). Because of these bidirectional effects, it is critical to assess both parents and their children to understand how the relationship weathers certain events—in the case of this dissertation, an arrest.

Both the sex of the parent and the sex of the child determine the nature of the relationship within the parent-child dyad (Russell & Saebel, 1997). However, the overwhelming majority of parenting research focuses on mothers (Maccoby & Martin, 1983). There is evidence that, compared to fathers, mothers are more likely to be present in their children's lives (particularly among juvenile offenders; see the meta-analysis by Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk, & Gerris, 2009), to spend more time with their children (Day & Lamb, 2004), even in adolescence (Phares, Fields, & Kamboukos, 2009), to play a supervisory role (Starrels, 1994)

and ultimately to develop closer relationships with their children during adolescence (LeCroy, 1988) and into adulthood (Lawton, Silverstein, & Bengston, 1994). Mothers may play an important role in determining their sons' masculine identities and styles of anger expression (Matthews, Woodall, Kenyon, & Jacob, 1996), particularly as sons move from adolescence into adulthood (Diamond, 2006). The present dissertation will focus on mothers and their sons in order to present a more focused examination of a parent's role after a child's first arrest.

***Parental Relationship Affect.*** Decades of research have linked warm, supportive parenting relationships to a wide range of positive adjustment outcomes for youth (see the review by Spera, 2005). Most notably, youth who enjoy a warm relationship with their parents tend to excel in school and display high levels of prosocial behavior (Steinberg, Lamborn, Dornbusch, & Darling, 1992), while youth with hostile parents show the most antisocial and health-risk behaviors (Lamborn, Mounts, Steinberg, & Dornbusch, 1991). There is mounting evidence that warm, supportive parenting reduces antisocial behavior (Eddy & Chamberlain, 2000; Knutson, DeGarmo, & Reid, 2004), even among serious youth offenders (Williams & Steinberg, 2011).

Notably, there is evidence that an adolescent's *perception* of the nature of his relationship with his parents is associated with such outcomes (Perris, Arindell, & Eisemann, 1994; Wolfradt, Hempel, & Miles, 2003). For this reason, the present dissertation gauges the warmth and hostility in the mother-son relationship using reports from both mothers and sons. Additionally, the tone

of a parent-child relationship is not fixed, but can change over time (Laursen & Collins, 2009); I measure how youth re-offending behavior may change the relationship between mothers and sons over time, and in turn affect sons' continued engagement in antisocial behavior.

However, the relative effect of continued engagement in antisocial behavior on the parent-child relationship may differ across age. Namely, parents of older adolescents may feel less responsibility for the actions of their children than parents of younger adolescents (Collins & Laursen, 2004). For this reason, the present dissertation considers the moderating role of age in the relation between the parent-child relationship and youth offending.

***Socialization Theory.*** Another way that parents influence their children is through socialization. “Socialization” refers to the way that norms, values, attitudes, and customs are transmitted and absorbed from socializing agents—traditionally, the bulk of whom are parents—to children (Maccoby & Martin, 1983; Maccoby, 1992). Parental attitudes may be transmitted to youth indirectly through modeling, or through direct messages (Lindstrom Johnson, Finigan, Bradshaw, Haynie, & Cheng, 2011). A wealth of developmental psychological literature provides evidence that parents' attitudes shape those of their children across a diverse array of domains, including gender and marital roles (Willoughby, Carroll, Vitas, & Hill, 2012), political views (Jennings, Stoker, & Bowers, 2009), religious beliefs (Glass, Bengtson, & Dunham, 1986), and racial prejudice (Sinclair, Dunn, & Lowery, 2005; O'Bryan, Fishbein, & Ritchey, 2004).



Children are also socialized to their parents' moral values (Smetana, 1988, 1999; Smetana & Asquith, 1994; Smetana, Crean, & Campione-Barr, 2005; White & Matawie, 2004), which may affect a youth's engagement in criminal behavior. Indeed, there is evidence that sons adopt their mothers' attitudes toward antisocial behavior, risk-taking, and violence (Orpinas, Murray, & Kelder, 1999; Orpinas, Horne, & Staniszewski, 2003; Copeland-Linder, Jones, Haynie, Simons-Morton, Wright, & Cheng, 2007), and that mothers' attitudes toward aggression predict youth aggressive behavior, even when controlling for sons' own attitudes toward aggression (Solomon, Bradshaw, Wright, & Cheng, 2008). Indeed, the effect of socialized intergenerational attitude transmission is strong and consistent across adolescence (see meta-analysis by Degner & Dalege, 2013), particularly when youth and mothers share a warm relationship (Brody, Moore, & Gleib, 1994; Knafo & Schwartz, 2012; Zentner & Renaud 2007).

The present dissertation is interested in "*legal socialization*," the process through which adolescents develop attitudes and beliefs regarding the justice system (e.g., legal actors, legal processes, and the law itself; see Piquero, Fagan, Mulvey, Steinberg, & Odgers, 2005).

Importantly, when adolescents are socialized to doubt the legitimacy of the justice system ("legal cynicism," Sampson & Bartusch, 1998), they are more likely to (re)offend (e.g., Fagan & Piquero, 2007; Fagan & Tyler, 2005; Reisig, Wolfe, & Holtfreter, 2011), a phenomena that is covered in greater detail in the "Justice System Legitimacy" section below. For this reason, it is

important to determine whether intergenerational transmission is indeed the mechanism through which adolescents develop attitudes toward the justice system. To date, however, only one study has directly examined mothers as a mechanism of sons' legal socialization. This study finds that adolescent offenders do indeed adopt their mothers' cynical attitudes toward the justice system, leading these youths to persist in law breaking behaviors one year later (Cavanagh & Cauffman, 2015b). However, this study was limited in that it did not assess change in attitudes toward the justice system over time, which may result from a family's repeated exposure (Piquero et al., 2005). Thus, I will longitudinally test how contact with the justice system reciprocally affects mothers' and sons' attitudes toward the justice system.

**The Exosystem: The Impact of Systems.** For the purpose of this dissertation, the juvenile justice system is conceptualized as a part of youths' exosystem. According to Bronfenbrenner's Ecological model, the exosystem is comprised of broad political and social structures that reach beyond the family microsystem. While the individual does not have direct control over decisions made by exosystem-level entities, these entities may delimit, control, or constrain the individual through their actions or legislations (Bronfenbrenner, 1977).

All youths in the present study are involved in the juvenile justice system, which may interact with characteristics of the youth and of his family to disrupt youth development (Arditti, 2005; Snell-Johns, Mendez, & Smith, 2004). In addition, juvenile justice varies in practice at the

state and county level (Feld, 1991; Snyder & Sickmund, 2006). Thus, legislation specific to a youth's local juvenile justice system will affect his life. This dissertation considers youth from three geographically distinct states (Orange County, CA; Jefferson Parish, LA; Philadelphia, PA) to account for variability in juvenile justice practice and exosystem-level actors.

***The Juvenile Justice System.*** In order to understand how the juvenile justice system may affect youth and families, some background knowledge of the system is necessary. The juvenile justice system was developed over one hundred years ago with rehabilitation as its central tenet. This is in contrast to the adult criminal justice system, where the fundamental objectives are retribution and incapacitation. At the end of the 20<sup>th</sup> century, however, “get tough” crime policies shifted the dialogue surrounding juvenile offending from rehabilitation to public safety and punishment (Feld, 2003; Pickett, & Chiricos, 2012). The number of detained youth increased (Sickmund, 2004), as did the number of youth transferred to adult court (Bishop, 2000) or housed in adult facilities (Austin, Johnson, & Gregoriou, 2000). Within the past decade (largely as a result of several recent Supreme Court decisions that acknowledged the fundamental differences between juvenile and adult decision-making, e.g., *Roper v. Simmons*, 2005; *Graham v. Florida*, 2010; *Miller v. Alabama*, 2012; *Montgomery v. Louisiana*, 2016) the zeitgeist of juvenile justice has reversed to re-approximate its original rehabilitative goals. During this period

of goal realignment in the juvenile justice system, researchers and practitioners have been keenly interested in developing evidence-based practices for juvenile justice.

It is well established that contact with the juvenile justice system disrupts many aspects of youth development. Numerous experiments (e.g., Klein 1986; see also Petrosino, Turpin-Petrosino, & Guckenburg, 2010), and quasi-experiments (e.g., De Li, 1999; Gatti, Tremblay, & Vitaro, 2009; Sweeten, 2006) conclude that juvenile justice system involvement (even above and beyond police contact alone; Bernburg & Krohn, 2003) is detrimental to youths' psychosocial, academic, and occupational development.

***Justice System Legitimacy.*** According to Fagan and Tyler (2005), a normative part of adolescent development includes the development of attitudes toward the justice system ("legal socialization," described in the socialization section above). Attitudes toward the legitimacy of the justice system describe the degree to which one considers legal entities and processes to be valid, effective, and fair (Tyler, 1990). The perceived fairness of the treatment of citizens by legal authority informs citizens' beliefs of justice system legitimacy (Tyler, Casper, & Fisher, 1989; Tyler, 1990; Sunshine & Tyler, 2003), and has been associated with law-abiding behavior (Tyler, 1990; Paternoster et al., 1997; Hinds, 2009). In other words, as justice system legitimacy decreases, individuals may feel justified in breaking laws, put forth by what they perceive to be an unjust system (e.g., Fagan & Piquero, 2007; Reisig, Wolfe, & Holtfreter, 2011).

Attitudes toward the justice system are malleable through adolescence with the accrual of personal or vicarious experiences (Piquero et al., 2005; Woolard, Harvell, & Graham, 2008; Fine, Cavanagh, Donley, Frick, Steinberg, & Cauffman, 2016). A youth's context (the attitudes and factual or perceived experiences of family, peers, and the neighborhood) is particularly influential in informing the youth's development of a certain orientation toward the justice system (Fagan & Tyler, 2005; Piquero et al., 2005; Brunson, 2007; Fagan & Piquero, 2007; Flexon, Lurigio, & Greenleaf, 2009; Sprott & Greene, 2010; Fine et al., 2016).

Importantly, there is evidence that youths' views toward justice system legitimacy are associated with juvenile offending, recidivating, and rule-violating behavior in both delinquent samples (Fagan & Tyler, 2005; Piquero et al., 2005; Hinds, 2007; Otto & Dalbet, 2005; Sprott & Greene, 2010), and in community samples (Trinkner, 2012). For this reason, it is crucial to determine how youth attitudes toward the justice system develop, and to assess the trajectories of these attitudes over time, as intervention in this domain may help decrease youth offending.

There is limited evidence that mother's attitudes (Cavanagh & Cauffman, 2015b) and characteristics (Cavanagh & Cauffman, 2015a) affect youth's attitudes toward the justice system, however these studies were not longitudinal in design. I examine sons' and mothers' attitudes toward the justice system over time, to see how past and concurrent justice system experiences (e.g., youth re-arrests) shape a mother's attitudes, and in turn her son's attitudes.

**The Macrosystem: The Impact of Culture.** Bronfenbrenner's macrosystem describes a set of influences still broader than the exosystem that act on an individual and his other layers of context, including cultures and values (Bronfenbrenner, 1977). Parenting values and childrearing practices vary among different cultures. For example, the idea of *familismo* (a strong, loyal family unit) is highly valued in the Latino culture (Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002; Villarreal, Blozis, & Widaman, 2005). The present dissertation views the mother-son dyad in the justice system through the lens of Latino culture.

***Latino Families in the Justice System.*** Disproportionate minority contact within the juvenile justice system is a national issue. Latino/a youth are detained at double the rate of Caucasian youth (Pew Research Center, 2011; Piquero, 2008). In fact, one-quarter of the juvenile justice population (over 17 million individuals) is comprised of Latino/a youth age 17 and younger (Children's Defense Fund 2011). In the state of California, the percent of Latino/a youth arrested is over 50% (Arya et al. 2009).

In addition to parenting differently than Caucasian families (Villarreal, Blozis, & Widaman, 2005), Latino families may interact with the justice system differently. Due to cultural and linguistic barriers, knowledge and understanding of the legal system is limited among immigrant parents (Woolard, Cleary, Harvell, & Chen, 2008). This could perpetuate a culture of mistrust of legal actors among immigrant families (Sampson & Bartusch, 1998). Further, non-

English speaking parents may have difficulty understanding what is expected of their child on probation. For example, a youth on probation may need to “language broker,” or act as an interpreter between his parents and juvenile justice system actors, a situation that relies on youth to correctly understand and interpret service plans (Weemhoff & Villarruel, 2011). Such behavior could contribute to a youth’s prolonged or more serious involvement with the justice system (e.g., probation extended if the original terms are not met).

Latino youth with an undocumented parent are in a uniquely complex position following a first arrest, as contact with the justice system could have devastating consequences (e.g., deportation; Brabeck & Xu, 2010). Undocumented parents may avoid contact with the justice system so as not to risk exposure to the courts (Garfinkel & P. A. C. E. R. Center, 2010). As a result, Latino youth with undocumented family members may be less likely to appear for future court dates and probation officer meetings, resulting in more serious legal consequences (e.g., a bench warrant is issued if a youth does not attend his court date). These concerns over exposure to the courts are not baseless: over the past year, more than 52,000 undocumented youth and 39,000 undocumented adults with children were apprehended (Nakamura & Zezima, 2014), making deportation a salient threat to families with an undocumented member. Neither is this problem limited in scope: it is estimated that 46% of undocumented Latino immigrants are parents to a minor, compared with 29% of U.S. -born adults (Taylor, Lopez, Passel, & Motel,

2012). Yet, no research has examined the role of family members' documentation status in youth re-offending behavior.

An expectation of the juvenile justice system is that parents partner with the system, and help guide their youth through the process (Rozzell, 2013). Yet, Latino youth with less acculturated or undocumented parents may not have the same support as youth whose parents are native English speakers, familiar with U.S. culture, and documented citizens. For this reason, an investigation of the mother-son dyad during and after justice system involvement must consider the moderating role of cultural factors such as English fluency, acculturation, and documentation status. An overarching aim of the present dissertation is to examine the cultural lens through which the youth and his mother view their experience in the justice system.

### **The Present Study.**

Adolescents are embedded in layers of settings-- of particular interest in the present dissertation: the family and juvenile justice settings, both overlaid by culture—and their additive and interactive influences can prepare adolescents to make a successful, healthy transition to adulthood. Present literature does not adequately describe how the layered systems in which youth offenders find themselves may affect their continued offending or desistance from crime. Despite consensus that adolescents rely on their parents for support (Laursen & Collins, 2009), there is little research that has examined the role that mothers play in their sons' contact with the



justice system. Also lacking are longitudinal studies that assess how a mother may affect an adolescent offender's experience in the months and years after his first arrest, as well as how a mother may change as a result of continued youth offending. For this reason, practitioners are ill equipped to work with the needs of the families of juvenile delinquents toward the best outcomes for youth.

The knowledge generated from this dissertation provides an opportunity to improve juvenile justice practice by generating information about how families experience, and react to, a youth's arrest. Such information will aid juvenile justice practitioners on how to best assist juvenile offenders and their families, as well as to mitigate and reduce the impact of their contact with the juvenile justice system. A critical contribution of this study is a focus on Latino families, a population facing disproportionate contact with the juvenile justice system. In short, this study will provide guidance for juvenile justice professionals to address delinquent adolescents in a manner that better serves the interests of youths and their families.

**Research Aims and Hypotheses.** The present dissertation has two primary aims. Given the racial/ethnic composition of the sample (>50% Latino) and the over-representation of Latino youth in the juvenile justice system (Piquero, 2008), these aims will be addressed through the lens of Latino culture.

**Research Aim 1.** *Examine the extent to which the mother-child relationship changes as a result of youth re-offending.* Both juvenile justice system contact and relationships are dynamic and reciprocal. Changes in the warmth and hostility of the mother-son relationship (as perceived by both the mother and her son) will be measured in association with youth re-offending—both self-reported and official arrests. I expect that the quality of the mother-son relationship will be associated with youth reoffending over time, both as an outcome (e.g., the relationship will weaken in response to reoffending), and also as a predictor (e.g., stronger relationships will be associated with reduced offending). Because cultural factors may affect both the tone of the relationship, I will consider the moderating role of cultural factors (e.g., English fluency, acculturation, and documentation status) on the relation between re-arrests and the mother-son relationship. Mothers and sons will each self-report on the warmth and hostility within the relationship and youth offending behavior, and mothers will self-report cultural factors. Official records from the Orange County Department of Probation will allow for the assessment of re-arrests over the study period.

**Research Aim 2.** *Investigate how mothers' attitudes toward the justice system may change over time in response to continued justice system exposure, and how mothers' attitudes socialize youths' attitudes toward the justice system.* Some families may perceive system involvement to be negative or unfair, while other families may appreciate the treatment or

services they received from legal actors. These differences in experience may lead to different attitudes toward the justice system, both for mothers and for the sons whom they socialize. Negative attitudes toward the justice system are well-established predictors of continued offending. I predict that youth re-arrests will undermine mothers' attitudes toward the legitimacy of the justice system, and in turn undermine youth attitudes, resulting in continued offending. Attitudes toward the justice system are assessed using a self-report scale, on which both mothers and sons report their attitudes. Race, ethnicity, and culture play a critical role in a family's juvenile justice system experience; because Latino communities are often disproportionately policed and profiled (Epstein & Goff, 2011; Welch, Payne, Chiricos, & Gertz, 2011), Latinos, particularly in Southern California, may be more likely to view the justice system cynically (Vidales, Day, & Powe, 2009). Because race, ethnicity, and culture are so closely tied to attitudes toward the justice system, I will test the hypothesized model as moderated by factors associated with Latino culture.

### **III. Methods**

#### **Overview**

The Crossroads study is a prospective longitudinal study of first-time juvenile offenders. Since it began in 2011, Crossroads has recruited 1,216 male first-time juvenile offenders in Orange County, CA, New Orleans, LA, and Philadelphia, PA. Through semi-annual interviews

over two and a half years, Crossroads collects data regarding successful completion of probation (including recidivism) from youth self-report and official arrest records.

In 2012, Crossroads was augmented with the Crossroads Mothers Study. This ancillary study interviewed 282 mothers of Crossroads youth participants from all three sites (204 in Orange County, CA; 67 in Philadelphia, PA; 11 in Jefferson Parish, LA). Mothers were interviewed six months after their sons' first arrest, and again two and a half years later to compliment youth follow-up interviews, in order to test questions of reciprocal change in the parent-child relationship over time in conjunction with youths' delinquent behavior.

**Sample.** A total of 282 mothers-son pairs (total  $N= 564$ ) are included in the sample for the present dissertation. Below I describe the sampling procedure and characteristics of these participants.

Table 1. Sample Demographics from Crossroads Youth and Mothers.

	N=1216			N=282			N=282		
	Crossroads Youth: Full			Crossroads Youth: Analytic			Crossroads Mothers <sup>†</sup>		
	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Age at Study	15.29	1.29	13-17	15.36	1.24	13-17	46.50	7.23	31-71
Enrollment									
	<i>Percent</i>	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	<i>N</i>	
Ethnicity									
White	14.8%	180	18.4%	52	21.6%	61			
Latino	45.8%	557	58.5%	165	56.0%	158			
African American	36.9%	449	19.9%	56	19.2%	54			
Other	2.5%	30	3.2%	9	3.2%	9			
U.S.-born	92.2%	1126	89.4%	252	53.2%	150			

Ever arrested <sup>2</sup>	100%	1216	100.0%	282	21.6%	61
Interviewed in English <sup>3</sup>	100%	1216	100.0%	282	61.7%	174

<sup>1</sup>92% of women interviewed were biological mothers of Crossroads youth; all women participants are referred to as “mothers” for simplicity.

<sup>2</sup>All youth in the sample were arrested, as this was a criterion for study eligibility. Mothers self-reported whether or not they had ever been arrested during their first interview.

<sup>3</sup>All youth were interviewed in English, as this was a criterion for study eligibility. Mothers were eligible if they spoke either English or Spanish.

*Crossroads Youth Sampling Procedure.* Youth were eligible to participate in Crossroads if they were male offenders who had committed a low to moderate level offense (e.g., vandalism, petty theft, simple assault). After case dispositions were imposed, male adolescents who were between 13 and 17 years of age, spoke fluent English, had at least one eligible charge (see Table 2), and were first time-offenders were approached about study involvement. Because re-arrest is a primary outcome of interest, a sample of youth offenders is most fitting to answer the questions posed by this dissertation.

*Table 2. Eligible Charges for Crossroads Youth Participants.*

<b>Orange County</b>	<b>Philadelphia</b>	<b>Jefferson Parish</b>
Assault	Aggravated assault	Criminal Mischief
Battery	Burglary	Disturbing the peace
Burglary	Criminal mischief	Hit and run driving
Drug Possession	Indecent assault	Possession of marijuana
Obstruction of a public officer	Possession of an instrument of crime	Possession of stolen property
Petty Theft	Possession with intent to deliver a controlled substance	Simple battery
Possession of a switchblade knife	Possession of marijuana	Simple criminal damage to property

Public fighting	Robbery	Theft
Vandalism	Simple assault	Theft of goods
	Terroristic threats	
	Theft	
	Weapon on school property	

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The Crossroads study elected to focus exclusively on youth with no prior offenses in order to restrict variability in past offending. The decision to sample only males was driven by the comparatively low rate of female offending. Before youth were officially enrolled in the study, informed parental consent and youth assent were obtained from the youth and his parent/guardian for his involvement. About 20% of the eligible adolescents refused to participate in the study or had their participation withheld by parents/guardians.

***Crossroads Mothers Sampling Procedure.*** Primary female guardians of youth participants were approached for their first interview between 5 and 7 months after the youth's arrest. This time window was chosen so that questions pertaining to court experiences, probation officer meetings, etc., could be answered with greater certainty once families had spent time navigating the justice system. Of the families contacted within the specified time frame, 9.1% were ineligible (i.e., the youth had little or no contact with a female guardian), and 91% of those women who were eligible consented to participate in the study. Given that only 15.4% of youth



in the present study listed a male as their primary guardian, only female guardians were eligible for participation in the study. Previous research suggests that, compared to fathers, mothers of juvenile offenders are more likely to be present in their children's lives (see the meta-analysis by Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk, & Gerris, 2009) and to play a supervisory role within the home (Starrels, 1994). Although Crossroads youth were only eligible if they spoke English, mothers were eligible if they spoke either English or Spanish.

**Procedures.** The Crossroads Mothers Study was designed to assess how mothers' traits (e.g., attitudes, parenting practices, resources, knowledge, cultural factors) interact with youth characteristics over time in response to contact with the juvenile justice system. At each wave in the ongoing main Crossroads study, youths are interviewed for 2 to 3 hours. Mothers' Wave 1 and Wave 2 interviews were approximately one hour in length.

At the time of his or her first interview, each participant (mother and son) was informed of the nature of the study, told that participation was voluntary, and that there was no penalty for declining to participate. Mothers were free to decline participation without affecting their sons' participation. All participants' names were replaced with a code number to ensure confidentiality, and to link mothers' and sons' responses. All participant responses are protected by a Certificate of Confidentiality issued by the Department of Justice. This protects participants' privacy by exempting their responses and identity from subpoenas, court

orders, or other types of involuntary disclosures. The Institutional Review Board (IRB) at all three study sites approved all procedures.

*Crossroads Youth Procedures.* Interviews were conducted in both secure residences and the community (e.g., at participants' homes or nearby locations that afford privacy). Youth were surveyed about their views, experiences, characteristics, and behaviors, including ongoing offending. Laptop computers were used to assist with interview administration (i.e., that incorporate skip patterns) as well as ease of data entry. Software designed for Crossroads allowed for anonymous keypad data entry by the participant for sections of the interview covering sensitive areas (e.g., substance use, sexual behavior), where verbal responses might prove revealing to others in the interview environment. No identifying information was entered into the electronic data files produced at interviews. Upon completion of an interview, responses were checked for accuracy, and any potential problems with the data were noted. After backing up the data on a local secure server, the data file was uploaded securely to the password protected, firewalled server. Once on the server, it was checked for consistency and entered into a central, computerized dataset. In addition to interviewing youth, Crossroads also obtained official records (e.g., official arrest records) to corroborate their accounts. Youth received \$50 for the first interview, and compensation increases by \$15 with each successive interview (up to

\$140) to provide an incentive to stay with the study. Table 3 details study retention at each time point (relative to baseline).

*Table 3. Retention Rates for Crossroads Youth Participants*

<i>Time point</i>	<i>Status</i>	<i>Retention Rate</i>
Baseline	Completed	1,216 youth enrolled
6 months	Completed	95.48%
12 months	Completed	93.83%
18 months	Completed	94.34%
24 months	Completed	93.09%
30 months	Completed	92.43%

***Crossroads Mothers Procedures.*** Mothers of participating Crossroads youth are interviewed twice: first 5-7 months after the youth’s arrest (Wave 1), and again 35-37 months after the youth’s first arrest (Wave 2). The two-and-a-half year time period for the follow-up interview was selected to follow youth to the point at which many will have reached the age of majority, which, for some youth, means less contact with their parents (e.g., high school graduation, financial independence, alternative residence, etc.). Of the 397 women interviewed at Wave 1, 2% declined to be re-interviewed and 15% could not be located for Wave 2. There were no significant differences in key variables between mothers who were interviewed twice and

those interviewed once. Because youth participants are already interviewed semi-annually as part of the Crossroads Study, complimentary longitudinal data from mothers allows for analyses of reciprocal influence across time.

The interview schedule is displayed in Figure 2. As noted in the figure, youth baseline interviews are considered a “pretest” for the purposes of the proposed dissertation.

Conceptualizing this interview as a pretest allows for statistical controls of youths’ typical behavior and relationships, so that causal assumptions can be made more readily. “Wave 1” refers to data from both mothers and sons approximately 6 months after the youth’s arrest.

“Wave 2” is data from mothers approximately three years after the youth’s arrest. The two years between Wave 1 and Wave 2 include semiannual data from youth only.

Figure 2. Data Collection Time Points. The interval between each time points is 6 months.



During both waves of the Crossroads Mothers Study, participants completed a 60-minute telephone interview, administered in English or Spanish. An extensive translation process ensured that the interview is standard in both languages. Iterative, collaborative translation produces greater conceptual equivalence and cultural sensitivity than simple literal translations (Douglas & Craig, 2007; Harkness, Van de Vijver, & Mohler, 2003; McKay, Breslow, Sangster, Gabbard, Reynolds, Nakamoto, & Tarnai, 1996). For this reason, all measures in the Crossroads Mothers Study were iteratively translated and back-translated in English and Spanish by a team of native speakers. Further, women participating in the Spanish version of the interview were only interviewed by native Spanish-speaking research assistants, to ensure that participants were comfortable with both the interview and the interviewer.

Interviews were conducted over the telephone using computers to assist with administration (e.g., that incorporate skip patterns) as well as ease of data entry. No identifying information was entered into the electronic dataset. For participants who did not have reliable access to a telephone, the interview was conducted in person ( $n=1$ ) or online ( $n=14$ ). Trained research assistants recorded all data using Qualtrics, a secure online survey company that maintains all data behind a firewall and requires a password for access. This allowed for maximum privacy for sensitive questions (e.g., illegal behavior, documentation status) as well as for standardization across participants. Upon completion of the interview, the research assistant

checked responses for accuracy, and reported any potential problems with the data in detailed notes. Mothers were compensated \$15 for their time at Wave 1 and \$25 at Wave 2.

**Measures.** The Crossroads study uses both self-report and official records. At each wave of data collection, youth self-report on a variety of domains in their lives: educational achievements, psychosocial development, social and familial relationships, criminal behavior, and living situations. Mothers also self-report their personal characteristics, experiences, and feelings during both waves of data collection. In addition, mothers provide information about their families, with a particular focus on their son who is involved in Crossroads. Specifically, the following measures were used:

***Microsystem-Level Measures.***

*Demographic information.* Both youth and mother participants report general demographic information including their age, race/ethnicity, and country of birth.

*Relationship Warmth and Hostility* (Conger, Ge, Elder, Lorenz, & Simons, 1994). This scale assesses the affective tone and nature of the child-parent relationship (e.g., “During the past 6 months when you and your son have spent time talking or doing things together, how often did your son...let you know he really cares about you?” and “...Threaten to hurt you physically?”). Participants rate each item on a four-point scale ranging from (1) *Always* to (4) *Never*. Both youth and mothers report on this scale about their relationship with the other. Psychometric

analyses of the scale indicated that it was reliable at Wave 1 for both mothers ( $\alpha_{\text{motherwarmth}} = .92$ ;  $\alpha_{\text{motherhostility}} = .85$ ) and sons ( $\alpha_{\text{sonwarmth}} = .93$ ;  $\alpha_{\text{sonhostility}} = .91$ ), and at Wave 2 for both mothers ( $\alpha_{\text{motherwarmth}} = .90$ ;  $\alpha_{\text{motherhostility}} = .86$ ) and sons ( $\alpha_{\text{sonwarmth}} = .82$ ;  $\alpha_{\text{sonhostility}} = .85$ ).

### ***Exosystem-Level Measures.***

*Official Arrest Records.* Through cooperation with the courts in Orange County, Jefferson Parish, and Philadelphia, the Crossroads study records the official arrests for each participant youth. Official arrest records are gathered every 6 months, to correspond with the youth's interview schedule.

*Self-reported Offending.* Because not all criminal behavior is detected or processed by law enforcement, youth and mothers reported on youth's engagement in criminal activity during each recall period using the Self-Report of Offending (SRO; Huizinga, Esbensen, & Weiher, 1991). Sons self-reported if they had been involved in any of 24 criminal acts ranging in severity from selling drugs to homicide. Mothers responded to the same 24 items regarding their sons. Responses were summed for the sons and for the mothers separately to create variety scores, which indicate the number of different types of criminal acts that the youth engaged in between Wave 1 and Wave 2, with higher scores indicating more severe criminal behavior. Variety scores are widely used in criminological research because they are highly correlated with measures of severity of antisocial behavior, yet are less subject to recall bias than are self-reports of

frequency of antisocial behavior (see Hindelang, Hirschi, & Weis, 1979; Osgood, McMorris, & Potenza, 2002). Mothers' and sons' reports of youth offending behavior was weakly, but significantly positively correlated at  $r = .26, p < .001$ .

*Procedural Justice Inventory* (Adapted from: Casper, Tyler, & Fisher, 1988; Tyler, 1990; Tyler, 1997; Paternoster, Brame, Bachman, & Sherman, 1997; and Srole, 1956). The Procedural Justice inventory is a 55-item measure of the participant's perception of fairness and equity connected with the youth's arrest and court processing. This measure is designed to tap several dimensions of fair treatment: correctability, ethicality, representativeness, and consistency. The outcomes of this process include evaluations of law and its underlying norms: legitimacy and legal cynicism. The items in this measure are divided into four sections: (1) Police (e.g., "The police treated my son the same way they treat most people his age."), (2) Judge (e.g., "Even after the judge makes a decision about sentencing my son, there is nothing I can do to appeal it."), (3) Legitimacy (e.g., "I feel people should support the police."), and (3) Legal Cynicism (e.g., "Laws are meant to be broken."). The five response choices span (1) *Strongly disagree* to (5) *Strongly agree*. This measure has been found to demonstrate good internal consistency and structural validity (Reisig, Bratton, & Gertz, 2007), and it was reliable at Wave 1 for both mothers ( $\alpha_{\text{mothercynicism}} = .80$ ;  $\alpha_{\text{motherlegitimacy}} = .82$ ;  $\alpha_{\text{motherpolice}} = .80$ ;  $\alpha_{\text{motherjudge}} = .87$ ) and sons ( $\alpha_{\text{soncynicism}} = .68$ ;  $\alpha_{\text{sonlegitimacy}} = .86$ ;  $\alpha_{\text{sonpolice}} = .79$ ;  $\alpha_{\text{sonjudge}} = .83$ ), and at Wave 2 for both mothers



( $\alpha_{\text{mothercynicism}} = .74$ ;  $\alpha_{\text{motherlegitimacy}} = .83$ ;  $\alpha_{\text{motherpolice}} = .83$ ;  $\alpha_{\text{motherjudge}} = .87$ ) and sons ( $\alpha_{\text{soncynicism}} = .67$ ;  $\alpha_{\text{sonlegitimacy}} = .85$ ;  $\alpha_{\text{sonjudge}} = .64$ ;  $\alpha_{\text{sonpolice}} = .78$ ).

### ***Macrosystem-Level Measures.***

*English Language Skills.* Mothers disclosed their comfort with the English language when they were recruited for the study. Before mothers were read the consent form, research assistants asked mothers in which language they would prefer to be interviewed, English or Spanish. Mothers who were not comfortable with either language were not eligible for the study, but whether a mother completed the interview in English or in Spanish was recorded as a single-item variable meant to assess mother's primary language for day-to-day interactions.

*Acculturation.* (Adapted from: Phinney, 1992). Mothers described the extent to which they identify with, and feel secure as a member of, their ethnic group through 12 items (e.g., "I am active in organizations that include mostly people of my own ethnic group," and "I feel a strong attachment to my own ethnic group"). Responses are rated on a four-point scale from (1) *strongly disagree* to (4) *strongly agree*. The scale has been found to be valid in English and in Spanish (Phinney, 1992), and was reliable within this sample ( $\alpha = .88$ ).

*Documentation status.* Mothers self-reported their documentation status via a yes/no response item ("Are you a legal resident of the United States?"). Of participants, 23.05% ( $N=65$ ) reported being undocumented at the time of the interview. Follow-up questions ask mothers to

report whether they have attempted to become a citizen, and whether they have experienced the deportation of an immediate family member.

### **Plan of Analysis**

The proposed dissertation is longitudinal, has dual reporters, and is multi-method (combining self-report and official records). For this reason, the analytic plan must employ several different statistical techniques to properly address each aim of the dissertation. Additionally, mothers and sons were interviewed at different times; thus, their perceptions of change in their relationship and in attitudes toward the justice system must be considered separately. Specifically, because mothers were interviewed twice, a series of Ordinary Least Squares (OLS) regression equations allow for tests of change in mothers' perceptions of their relationship with their sons (e.g., warmth, hostility, and monitoring) and attitudes toward the justice system (e.g., legal cynicism, legitimacy, attitudes toward police, and attitudes toward judges) between their first interview and their second. Sons were interviewed five times over the course of two years; because there are more than three time points when considering sons, it is possible to track their trajectories of warmth and of reoffending behavior using Group Trajectory Modeling, a form of Latent Class Analysis (Jones & Nagin, 2012). The technique creates distinct groups of individuals who follow the same pattern over time, and allow for researchers to differentiate the predictors and consequences of membership into each group (Nagin & Odgers,

2010). By modeling group trajectories of offending, mothers' relationship quality can be examined in relation to sons' group membership. Finally, based on the over-representation of Latinos in this sample (56% of mothers and 58.5% of sons), all analyses will include Latino culture as a moderator.

#### **IV. Results**

##### **Aim 1. Does the Mother-Child Relationship as a Result of Youth Re-Offending?**

**Mothers' Perception of the Relationship.** On average, results indicated that mothers' perceptions of their relationships with their sons were dynamic. For descriptive purposes, a change score variable was created for mothers' warmth and mothers' hostility by subtracting mothers' total reported score at Wave 2 from the reported score at Wave 1. Thus, a change score value of 0 indicates no change in a given construct from the Wave 1 to the Wave 2 interview, while a change score value less than 0 indicates a decrease in that construct over time, and a change score value greater than 0 indicates an increase in that value over time. Generally, the majority of mothers described their relationship with their sons as warmer and less hostile between the Wave 1 and Wave 2 interview. However, there was substantial variability in mothers' change in warmth and hostility; full descriptive results of change in both constructs are reported in Table 4. No differences in change score for maternal warmth or hostility were found

by race/ethnicity, youth's age, study site, mother's country of birth, mother's reported acculturation, mother's language, or mother's documentation status (all  $p > .1$ ).

*Table 4. Results of Change Score Variables for Mothers' Reported Relationship Warmth and Hostility.*

	Decreased	No Change	Increased	Range	Mean ( <i>SD</i> )
Relationship Warmth	39.48%	8.86%	51.66%	-1.89 – 2.00	0.11 (0.63)
Relationship Hostility	49.08%	16.24%	34.69%	-1.50 – 1.75	-0.06 (0.37)

**Maternal warmth and hostility.** A series of OLS regressions examined the relation between youth criminal behavior and the relation between mother and son in the years after his arrest. Although a third (33%) of youth were re-arrested during the 2.5 year study period, neither mother's report of relationship warmth nor relationship hostility was associated with official rearrests, controlling for Wave 1 warmth, pretest and concurrent youth self-reported offending, youth age, and race/ethnicity.

In addition to official arrests, both mothers (at Wave 2) and sons (during the 2 years between Wave 1 and Wave 2) reported on sons' criminal behavior (correlated at  $r = .26$ ,  $p < .001$ ). Although a son's self-report of his *own* criminal behavior following his first arrest was not associated with mother's reported warmth or hostility at Wave 2, mother's perception of her

son's criminal behavior was associated with a decrease in warmth [ $F(6,253)=38.35, r^2=.48, p<.001$ ] and an increase in hostility [ $F(6,253)=29.02, r^2=.41, p<.001$ ]. Furthermore, the association between mother's reported warmth and her report of her son's criminal behavior was moderated by age, such that the decrease in warmth was steeper for youth who were younger than for youth who were older (see Figure 3). Age did not moderate the relation between mother's report of relationship hostility and youth reoffending. Table 5 presents the full model results of re-arrests and mother-reported youth offending on mother's report of relationship warmth and Table 6 and presents the full model results of re-arrests and mother-reported youth offending on relationship hostility.

Figure 3. Youth Age Moderates the Relation Between Mother's Report of Youth Offending and Relationship Warmth.

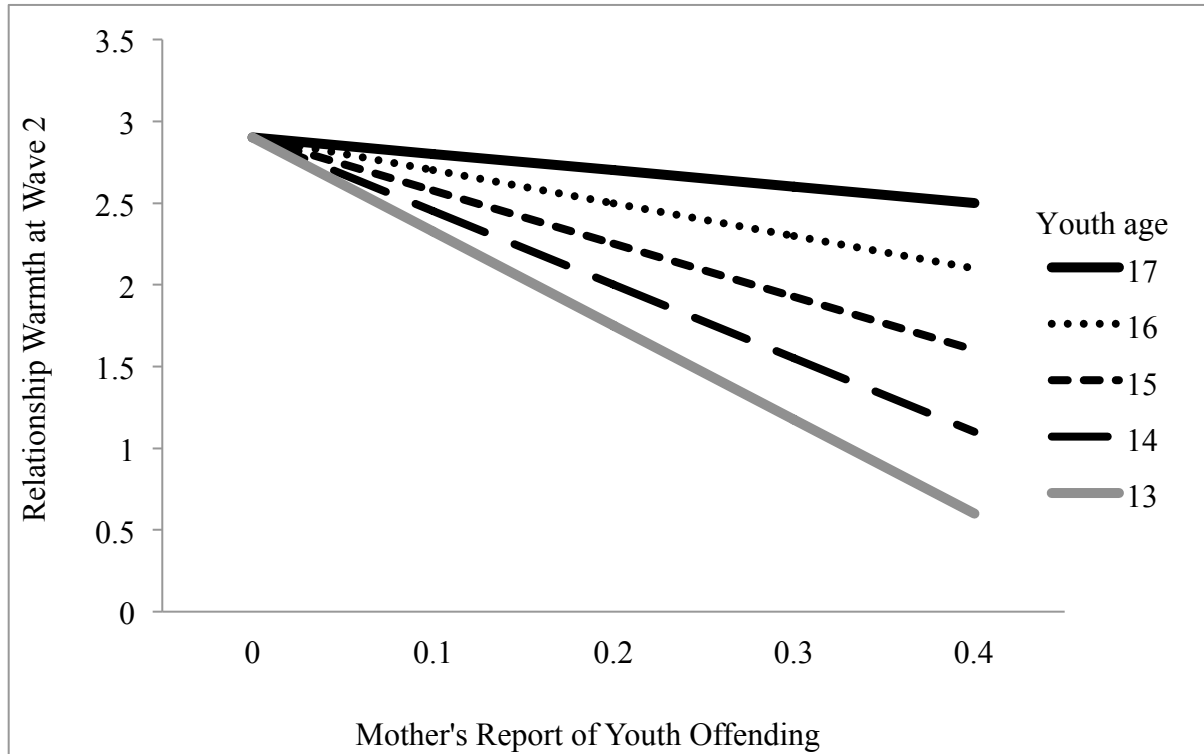


Table 5. *Mother's Reported Relationship Warmth at Wave 2, Regressed on Mother's Wave 1 Relationship Warmth, Contextual Controls,*

*Youth Offending Behavior, and Youth Arrests.*

	Model 1		Model 2		Model 3		Model 4	
	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$
Youth pretest self-reported offending	-0.07 (.32)	-0.01	.03 (.25)	.01	.37 (.24)	.08	.33 (.24)	.07
Youth's age	.03 (.03)	.05	.03 (.03)	.05	.01 (.03)	.01	-.02 (.03)	.01
Mother's race/ethnicity <sup>a</sup>	-.03 (.08)	-.02	.01 (.08)	.003	.11 (.08)	.07	-.13 (.07)	-.09*
Mother's Wave 1 relationship warmth	.59 (.04)	.65**	.59 (.04)	.65**	.53 (.04)	.57**	.52 (.04)	.56**
Youth self-report of offending from Wave 1 to Wave 2	.55 (.58)	.06						
Official re-arrests from Wave 1 to Wave 2 <sup>b</sup>			.02 (.02)	.05				
Mother's report of youth offending from Wave 1 to Wave 2					-3.28 (.66)	-.26**	-20.59	-.27**
							(8.73)	

Mother's report of youth offending 1.12 (.57) .09\*

x Youth age<sup>c</sup>

Constant	0.78	.81	1.33*
<i>F</i>	37.31	37.02	44.86
<i>R</i> <sup>2</sup>	0.42	0.41	0.46

\**p* < .05, \*\**p* < .01.

<sup>a</sup> White coded as 1, Non-white coded as 0; no differences were found when Latino was used as the reference group

<sup>b</sup> Re-arrest coded as 1, no re-arrest coded as 0

<sup>c</sup> Both variables were mean-centered



Table 6. *Mother's Reported Relationship Hostility at Wave 2, Regressed on Mother's Wave 1 Relationship Hostility, Contextual*

*Controls, Youth Offending Behavior, and Youth Arrests.*

	Model 1		Model 2		Model 3	
	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$
Youth pretest self-reported offending	.05 (.20)	.02	.13 (.16)	.05	.01 (.14)	.004
Youth's age	-.02 (.02)	-.06	-.02 (.02)	-.07	-.01 (.02)	-.04
Mother's race/ethnicity <sup>a</sup>	-.01 (.05)	-.01	.01 (.05)	.01	-.09 (.05)	-.10*
Mother's Wave 1 relationship hostility	.54 (.06)	.54**	.53 (.06)	.52**	.42 (.05)	.42**
Youth self-report of offending from Wave 1 to Wave 2	.18 (.35)	.03				
Official re-arrests from Wave 1 to Wave 2 <sup>b</sup>			.02 (.01)	.06		
Mother's report of youth offending from Wave 1 to Wave 2					2.58 (.39)	.36**
Constant		0.91**		0.92**		0.91**
<i>F</i>		22.86		23.50		35.89

$R^2$	0.31	0.31	0.41
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\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-white coded as 0; no differences were found when Latino was used as the reference group

<sup>b</sup> Re-arrest coded as 1, no re-arrest coded as 0

In order to address the overarching aim of the role of Latino culture, several related variables (e.g., mother’s acculturation, documentation status, language, and country of birth) were explored as moderators. None of the Latino culture variables moderated the relationship between maternal hostility or warmth and youth criminal behavior. However, controlling for Wave 1 offending, Wave 1 warmth, and youth age, mother’s report of relationship warmth with her son declined as she perceived he was engaging in more offending, but this decline was steeper among Latina women than non-Latina women (see Figure 4). Table 7 displays the results of the interaction model.

*Table 7. Mother’s Relationship Warmth at Wave 2, Regressed on Mother’s Wave 1 Relationship Warmth, Contextual Controls, and Youth Offending Behavior, as Moderated by Latino Ethnicity.*

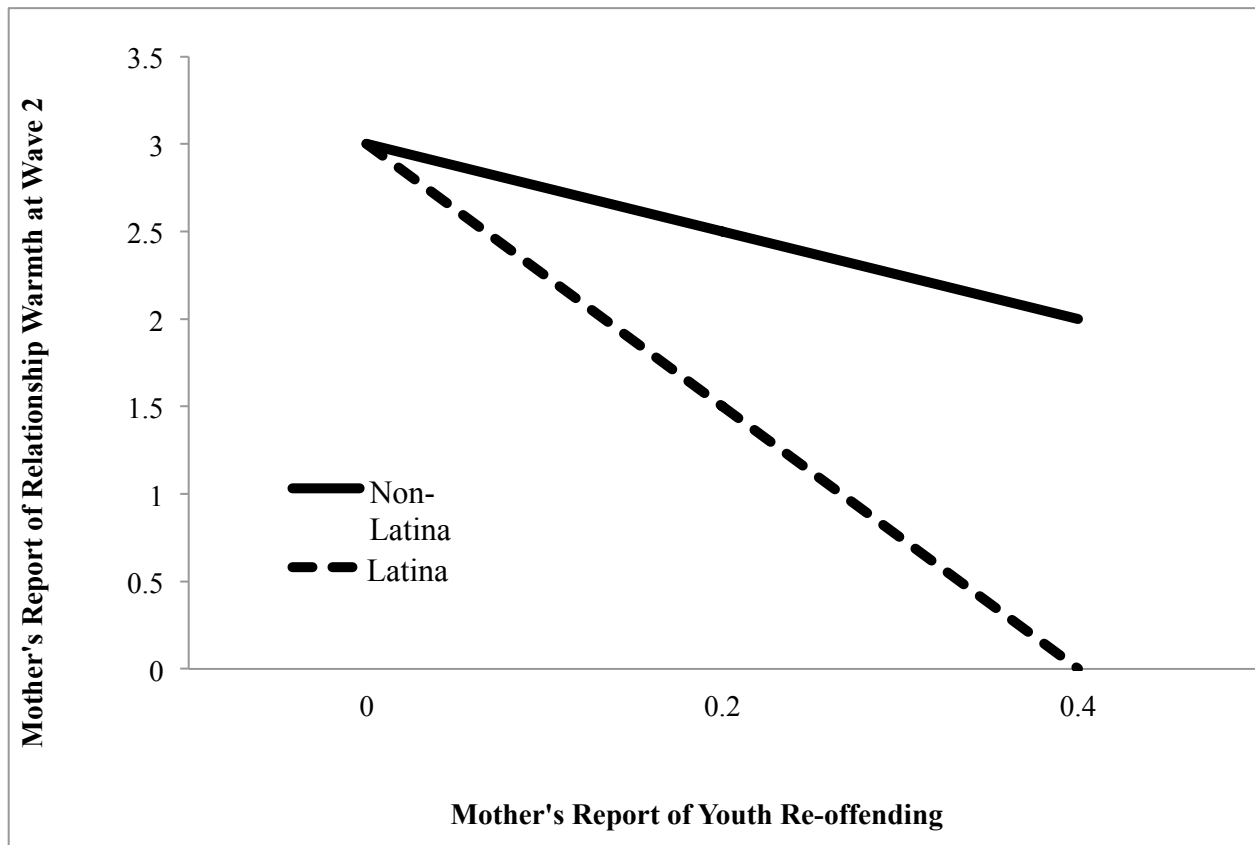
	Model 1	
	<i>b (SE)</i>	$\beta$
Youth Pretest self-reported offending	.32 (.24)	.07
Youth’s age	-.006 (.03)	-.01
Mother’s Wave 1 relationship warmth	.51 (.04)	.56**
Latino <sup>a</sup>	-.06 (.07)	-.04
Mother’s report of youth offending from Wave 1 to 2 years	-2.42 (.72)	-.19**
Latino x mother’s report of youth offending	-4.60 (1.47)	-.16**
Constant	1.63**	

<i>F</i>	41.13
<i>R</i> <sup>2</sup>	0.49

\**p* < .05, \*\**p* < .01.

<sup>a</sup> Latino coded as 1, Non-Latino coded as 0

Figure 4. Latino Ethnicity Moderates the Relation Between Mother's Report of Youth Offending and Relationship Warmth.



### **Son's Offending Trajectories and the Mother-Son Relationship.** Group-based

trajectory modeling was used to identify trajectories of youth offending variety over the two and a half years since his first arrest. Group based-trajectory modeling uses variations in the data to identify latent classes that follow the same pattern of offending over time. Individuals are assigned to their most likely group based on probabilities, allowing both for the identification of offending trajectories, and also for the prediction of membership into each of those trajectories. The best fitting model was identified with a zero-inflated Poisson distribution (given the Poisson-structured data with clustering at 0, as ~45% of youth did not engage in offending at each time point), where the polynomial type for the zero-inflation of each group was intercept. This model included three trajectory groups, where two trajectories were linear and the third was quadratic (all  $p$ 's < .05). Posterior probabilities indicated that individuals in each group at least a 94% chance of being in that group ( $M_{group1}=.97$ ,  $M_{group2}=.94$ ,  $M_{group3}=.94$ ). Table 8 reports a list of alternative models, including the final model, and Figure 5 displays the best-fitting model graphically.

Table 8. Group-Based Trajectory Models for Youth Offending Variety: A Sample of Alternative Models Fitted.

Parameter 1 (estimate)	Parameter 2 (estimate)	Parameter 3 (estimate)	Parameter 4 (estimate)	Group 1 % membership	Group 2 % membership	Group 3 % membership	Group 4 % membership	AIC <sup>a</sup>	BIC <sup>a</sup>
3-Group Solution									
<b>Linear</b>	<b>Linear</b>	<b>Quadratic</b>		<b>64.35**</b>	<b>28.57**</b>	<b>7.07**</b>		<b>-2396.25</b>	<b>-2414.46</b>
<b>(-.26)**</b>	<b>(-.05)*</b>	<b>(.04)*</b>		<b>(N=184)</b>	<b>(N=78)</b>	<b>(N=20)</b>			
Quadratic	Quadratic	Quadratic		63.68**	29.12**	7.19**		-2394.58	-2416.43
(.06)*	(.01)	(.04)*							
Quadratic	Linear	Cubic		63.93**	29.17**	6.91**		-2394.40	-2416.26
(.06)*	(-.05)*	(-.01)							
Linear	Linear	Cubic		64.51**	28.66**	6.83**		-2396.67	-2416.70
(-.26)**	(-.05)	(-.01)*							
4-Group Solution									
Linear	Linear	Linear	Quadratic	51.63**	29.44**	13.15**	5.77**	-2355.87	-2379.55
(-.30)**	(-.24)**	(.09)**	(-03)						
Linear	Linear	Quadratic	Quadratic	51.59**	29.49**	13.17**	5.75**	-2356.87	-2382.36

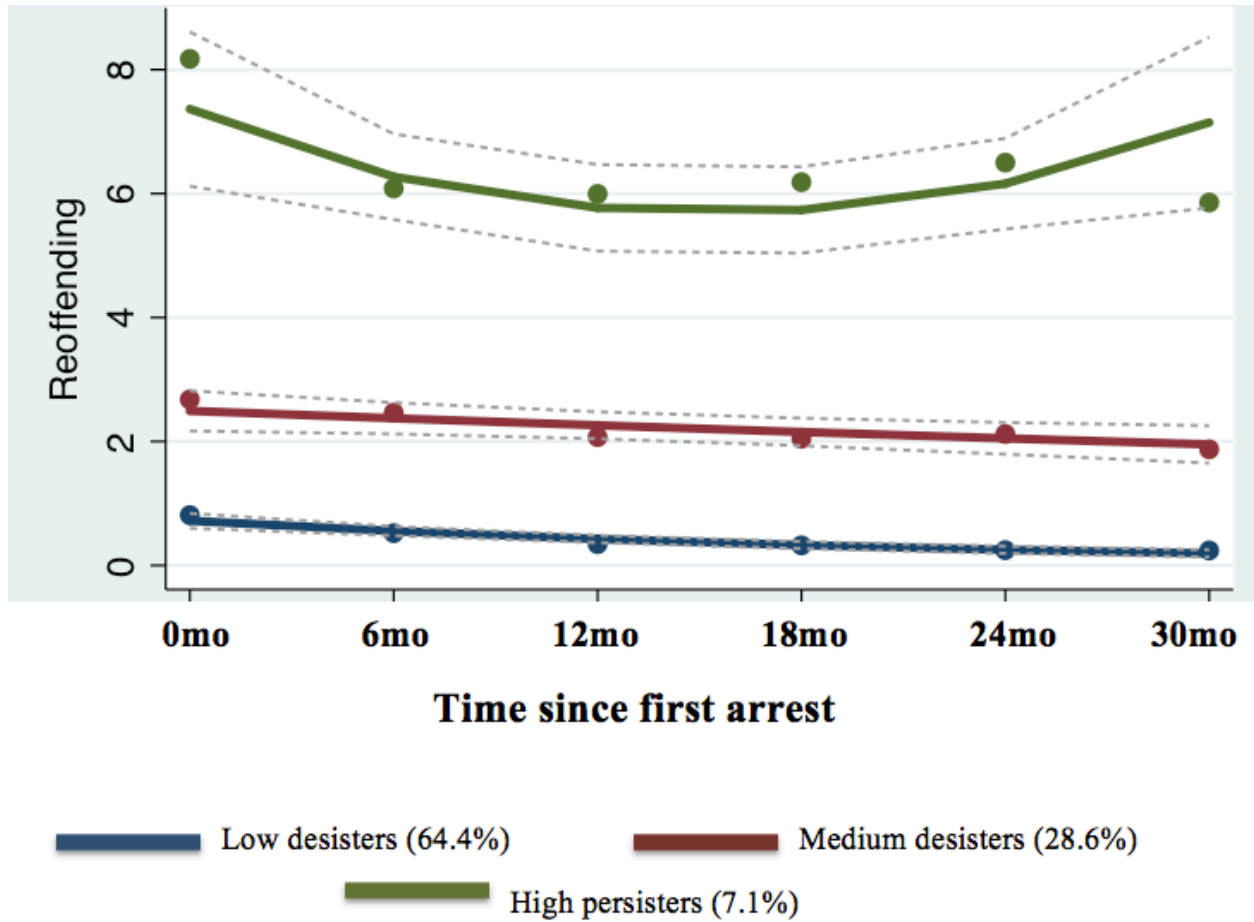
(-.30)**	(-.24)**	(.003)	(.03)						
Linear	Linear	Quadratic	Linear	52.42**	30.67**	13.87**	3.03**	-2355.53	-2379.21
(-.30)**	(-.20)**	(.04)*	(-.05)						
Linear	Linear	Linear	Cubic	52.43**	30.70**	13.64**	3.23**	-2350.39	-2375.88
(-.31)**	(-.20)**	(.04)	(-.07)**						

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup>AIC indicates Akaike information criterion and BIC indicates Bayesian information criterion. These values are based on the model likelihood with a penalty for the number of model parameters. Although not directly interpretable, lower values of AIC and BIC indicate better model fit.

Note: The model in bold represents the best-fitting model used in analyses

Figure 5. Zero-inflated Poisson Model of Youth Offending Variety. Estimated trajectories of offending (solid lines), observed group means at each time point (dot symbols), and estimated group percentages. Dashed lines are 95% pointwise confidence intervals on the estimated trajectories.



The first group represents “low desisters”; youth who began offending at very low levels, desisted offending linearly until they were not offending at all. The second group represents the “medium desisters”. These youth began offending at a medium rate, and desisted a small but



steady amount over the course of two years. The third group represents “high persisters”. These you began offending at a high rate, and although they displayed a dip in offending in the 6 months after their first arrest, they continued to offend at high levels in the years that followed. Although this group is relatively small (only 7.1% of participants), previous studies of offending trajectories in far more serious populations reveal that only approximately 6% of youth continue offending at high levels (Monahan, Steinberg, Cauffman, & Mulvey, 2009). The high posterior probabilities coupled with the excellent model fit statistics bolster the theoretical notion that only a small number of first-time offenders would continue offending at a high level.

Once the trajectory groups had been identified, a series of multinomial logistic regressions were conducted in order to see whether maternal relationship warmth and hostility predict youth offending trajectory group membership. First, Wave 1 relationship warmth was tested. Mothers higher in initial relationship warmth were more likely to have sons who are part of the low-desisting trajectory group than the medium-desisting group, but not the high-persisting group (see Table 9). Second, son’s perception of the warmth in the relationship was added to the model. Both mother’s and son’s perception of the relationship predicted trajectory membership, such that Wave 1 warmth as reported by the mother predicted membership in the low group over the medium group, and Wave 1 warmth as reported by the son predicted membership in the low group over the high group (see Table 10).

Table 9. Multinomial Logistic Regression Results for Mothers' Reported Relationship Warmth by Youth Offending Trajectory.

	Low vs. Medium			Low vs. High			Medium vs. High		
	Coeff. (SE)	95% CI	Relative Risk Ratio	Coeff. (SE)	95% CI	Relative Risk Ratio	Coeff. (SE)	95% CI	Relative Risk Ratio
Mother report of Wave 1 relationship warmth	-.77** (.20)	-1.17 - -.37	.46	-.42 (.32)	-1.05 - .21	.66	.35 (.35)	-.33 - 1.03	1.42
Youth age	.39** (.12)	.15 - .64	1.48	.30 (.20)	-.08 - 0.69	1.35	-.09 (.21)	-.51 - .33	.91
McFadden's pseudo-R <sup>2</sup>	0.0826								

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group

Table 10. Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Warmth by Youth Offending Trajectory.

	Low vs. Medium			Low vs. High			Medium vs. High		
	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk
Mother report of Wave 1	-.67**	-1.09 - -.24	.51	-.22	-.93 - .48	.80	.51	-.24 - 1.26	1.67
relationship warmth	(.22)			(.36)			(.38)		
Son report of Wave 1	-.34	-.76 - -.08	.71	-.76*	-1.44 - -.09	.47	-.42	-1.12 - .29	.66
relationship warmth	(.22)			(.34)			(.36)		
Race/ethnicity <sup>a</sup>	.67*	.02 - 1.33	1.96	-.26	-1.60 - 1.08	.77	-.23	-1.62 - 1.16	.80
Youth age	.38**	.13 - .62	1.46	.22	-.19 - .62	1.55	-.19	-.62 - .25	.83
	(.12)			(.21)			(.22)		
McFadden's pseudo-R <sup>2</sup>	0.0842								

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group

Next, interactive effects between Wave 1 relationship warmth and youth age were tested.

A significant interaction was found for mother's report of relationship warmth, such that at high levels of Wave 1 warmth, sons were more likely to be in the low offending trajectory group than medium group, regardless of age. Even at low maternal warmth, younger sons were more likely to be in the low group than medium group (see Figure 6). The same interaction was found above and beyond the effect of youth's Wave 1 report of relationship warmth (see Table 11).

*Figure 6. Youth Age Moderates the Relation Between Mothers' Wave 1 Relationship Warmth and Youth Offending Trajectories.*

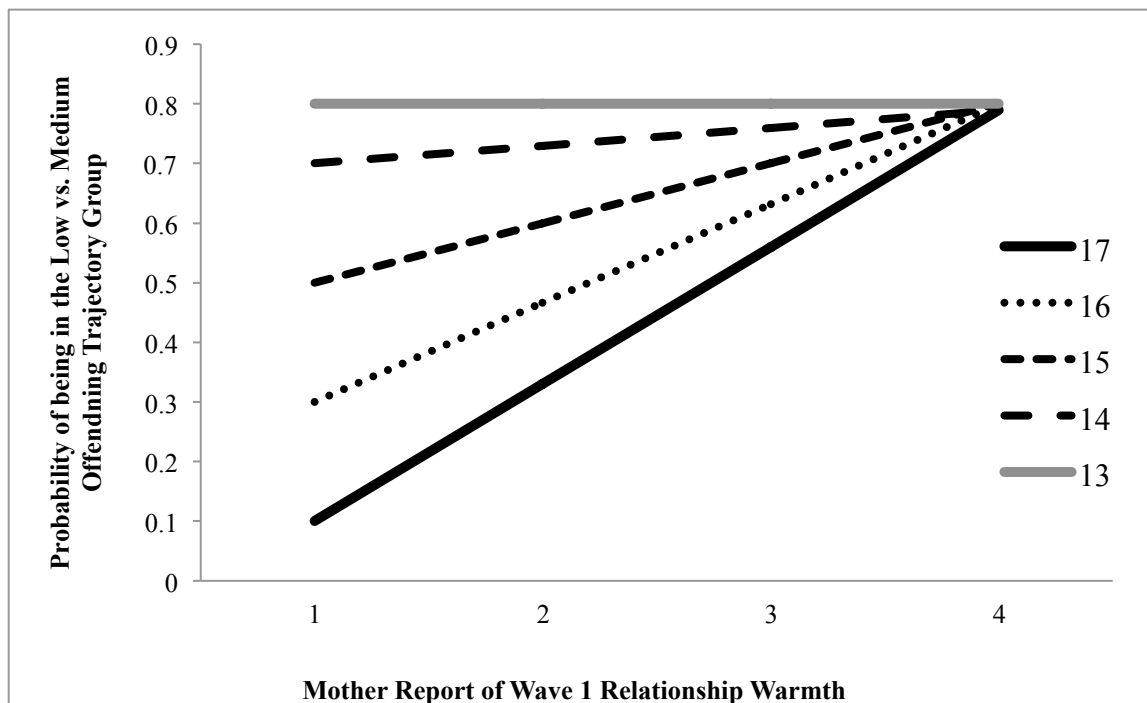


Table 11. Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Warmth by Youth Offending

Trajectory, as Moderated by Youth Age.

	Low vs. Medium			Low vs. High			Medium vs. High		
	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk
Mother report of Wave 1	4.66	- .49 - 9.82	105.79	2.04	-6.41 -	7.68	-2.62	-11.76 -	.0725
relationship warmth	(2.63)			(4.31)	10.49		(4.66)	6.52	
Son report of Wave 1	-.31	-.74 - .12	.73	-.75*	-1.43 - -.08	.47	-.44	-1.15 - .27	.64
relationship warmth	(.22)			(.35)			(.36)		
Race/ethnicity <sup>a</sup>	.63	-.03 - 1.29	1.89	-.29	-1.63 - 1.05	.75	-.92	-2.28 - .44	.40
Youth age	(.34)			(.69)			(.69)		
	1.28**	.36 - 2.21	3.60	.64	-.88 - 2.15	1.89	-.64	-2.25 - .96	.52
	(.47)			(.77)			(.82)		
Mother Wave 1	-.35*	-.68 - -.01	.71	-.15	-.70 - .40	.86	.20	-.40 - .79	1.22
relationship warmth x Age	(.17)			(.28)			(.30)		

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McFadden's pseudo-R<sup>2</sup> 0.1045

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\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group

The same set of analyses was performed with maternal Wave 1 hostility. Greater Wave 1 hostility predicted membership in the medium or high group relative to the low group, but there was no difference between the medium and high group in terms of Wave 1 hostility (see Table 12). When son's report of relationship hostility was added to the model, mother's report remained a significant predictor of membership in the low vs. high and low vs. medium groups. Son's report of relationship hostility predicted group membership in the low vs. medium group, but not the high group (see Table 13). Age did not significantly interact with either mother's or son's report of relationship hostility to predict offending trajectory group.

Finally, the offending trajectories themselves were used to predict mothers' quality of the relationship at Wave 2. The effect of trajectory group membership was not associated with mothers' perception of relationship warmth or hostility, and no interactive effects were found.



Table 12. Multinomial Logistic Regression Results for Mothers' Reported Relationship Hostility by Youth Offending Trajectory.

	Low vs. Medium			Low vs. High			Medium vs. High		
	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk	Coeff.	95% CI	Relative Risk
Mother report of Wave 1	1.33**	.58 - 2.09	3.79	1.71**	.65 - 2.78	5.54	.38	-.66 - 1.42	1.46
relationship hostility	(.38)			(.54)			(.53)		
Race/ethnicity <sup>a</sup>	.78*	-.15 - 1.42	2.19	-.11	-1.31 - 1.09	.89	-.89	-2.10 - .31	.41
Youth age	(.32)			(.61)			(.62)		
	.40**	.16 - .64	1.49	.33	-.07 - .72	1.39	-.07	-.49 - .35	.93
	(.12)			(.20)			(.21)		
McFadden's pseudo-R <sup>2</sup>	0.0862								

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group

Table 13. Multinomial Logistic Regression Results for Mothers' and Sons' Reported Relationship Hostility by Youth Offending Trajectory.

	Low vs. Medium			Low vs. High			Medium vs. High		
	Coeff. (SE)	95% CI	Relative Risk Ratio	Coeff. (SE)	95% CI	Relative Risk Ratio	Coeff. (SE)	95% CI	Relative Risk Ratio
Mother report of Wave 1	1.13** (.39)	.36 - 1.90	3.10	1.38* (.60)	.02 - 2.56	3.97	.25 (.60)	-.93 - 1.43	1.28
relationship hostility									
Son report of Wave 1	1.08** (.41)	.28 - 1.88	2.94	1.14 (.64)	-.11 - 2.39	3.13	.06 (.65)	-1.21 - 1.32	1.06
relationship hostility									
Race/ethnicity <sup>a</sup>	.80* (.34)	.14 - 1.46	2.22	-.66 (.80)	-2.23 - .91	.52	-1.46 (.80)	-3.03 - .11	.23
Youth age	.36** (.13)	.11 - .60	1.43	.21 (.20)	-.20 - .62	1.24	-.14 (.22)	-.58 - .29	.87
McFadden's pseudo-R <sup>2</sup>	0.1033								

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group

**Aim 2. Do Mothers' Attitudes Toward the Justice System Change Over Time in Response to Continued Justice System Exposure, and do Mothers' Attitudes Socialize Youths' Attitudes Toward the Justice System?**

**Mothers' Attitudes Toward the Justice System.** A series of OLS regressions were conducted to assess the role of youth re-arrests on mothers' attitudes toward the justice system at Wave 2, accounting for Wave 1 attitudes, youth race/ethnicity, self-reported offending, and time spent incarcerated. Youth age was not associated with either mothers' or sons' responses on any of the subscales of procedural justice, and the pattern of associations between other variables remained the same whether age was included or excluded. For this reason, age was not included in any of the models presented.

Of the four subscales measuring various attitudes toward the justice system, only legal cynicism was affected by re-arrests. That is, although mothers' attitudes toward police, judges, and the legitimacy of the justice system did not change based on youth re-arrests, mothers became more cynical toward the justice system when their sons had been re-arrested compared to those whose sons had not been re-arrested [ $F(6,247)=4.99$ ,  $r^2=.11$ ,  $p=.042$ ]. Factors related to Latino culture were tested as moderators. Only documentation status was a significant moderator, such that mothers who are legal residents of the United States did not exhibit as steep an increase

in cynicism as mothers who are undocumented in response to their sons' official re-arrest. Figure 7 displays these results graphically, and Table 14 presents both models.

*Figure 7. Mother's Documentation Status Moderates the Relation Between Youth Re-arrests and Mother's Legal Cynicism at Wave 2.*

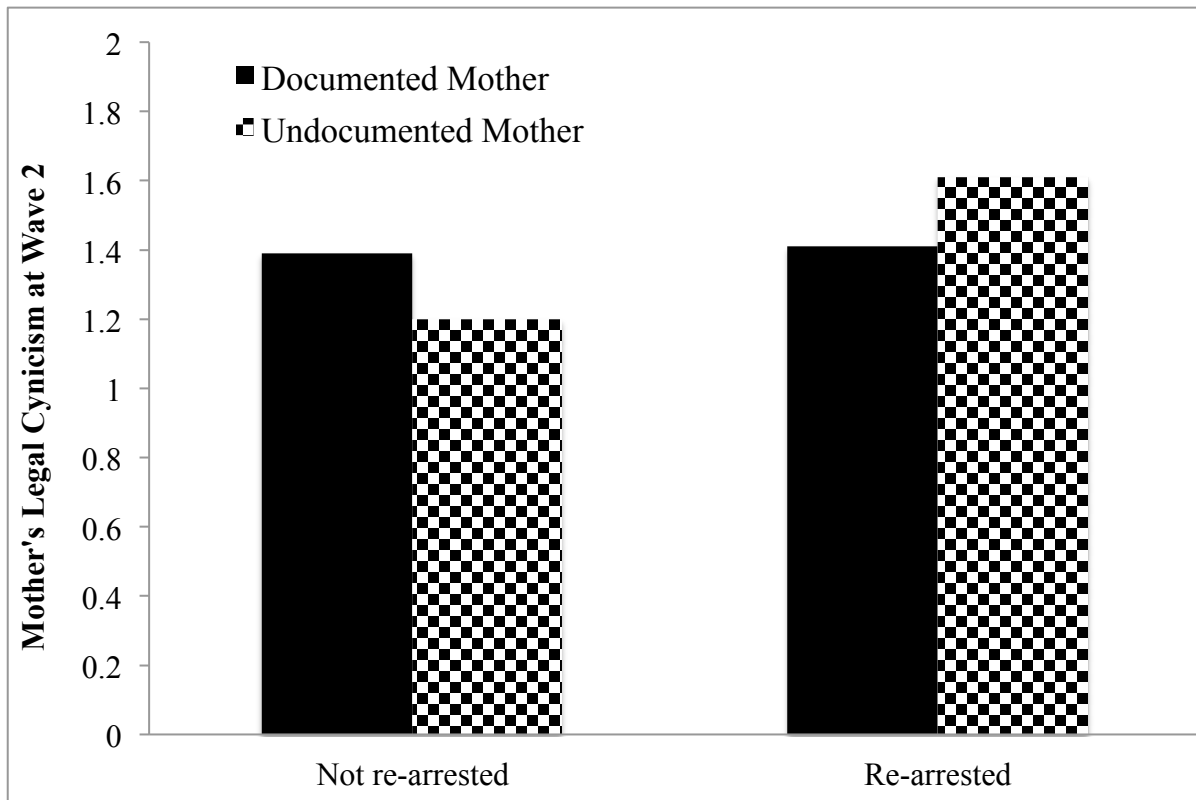


Table 14. Mother's Legal Cynicism at Wave 2, Regressed on Mother's Wave 1 Legal Cynicism, Contextual Controls, and Youth Re-arrests, as Moderated by Documentation Status.

	Model 1		Model 2	
	<i>b</i> (SE)	$\beta$	<i>b</i> (SE)	$\beta$
Mother's Wave 1 legal cynicism	.34** (.07)	.30	.37 **(.07)	.32
Youth Pretest self-reported offending	.03 (.26)	.01	.07 (.27)	.02
Youth self-report of offending from Wave 1 to Wave 2	-.60 (.52)	-.09	-.84 (.53)	-.12
Mother's race/ethnicity <sup>a</sup>	-.07 (.06)	-.07	-.11 (.07)	-.10
Proportion of time youth spent in an out-of-home placement	-.36 (.25)	-.10	-.24 (.28)	-.06
Mother's documentation status <sup>b</sup>			.19* (.09)	.16
Documentation status x Re-arrests			-.36* (.14)	-.30
Official re-arrests from Wave 1 to Wave 2 <sup>c</sup>	.14* (.07)	.13	.41** (.13)	.39
Constant		0.934**		0.752**
<i>F</i>		4.990		5.650
<i>R</i> <sup>2</sup>		0.108		0.156

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup> White coded as 1, Non-white coded as 0; no differences when Latino used as reference group

<sup>b</sup> Documented coded as 1, undocumented coded as 0

<sup>c</sup> Re-arrest coded as 1, no re-arrest coded as 0

**Youths' Attitudes Toward the Justice System.** The next step was to consider trajectories of youth's procedural justice outcomes. Results of a latent class analysis revealed that youth's perceptions of the legitimacy of the justice system, legal cynicism, and attitudes toward judges did not change appreciably over time (e.g., the only models which fit appropriately were those where each group's change was specified as intercept, indicating no change). However, an appropriate model could be fit when considering youth attitudes toward the police over the two years since his first arrest, using a censored normal distribution (i.e., Tobit model). The best fitting model was identified as having four trajectory groups, where two trajectories were linear, such that youth's perceptions of the police began high and declined gradually ("high declining") or began low and improved ("low increasing"); and two trajectories were intercept ("high stable" and "low stable"; all  $p$ 's < .01). Posterior probabilities indicated that individuals in each group had at least an 85% chance of being in that group ( $M_{group1}=.87$ ,  $M_{group2}=.85$ ,  $M_{group3}=.88$ ,  $M_{group4}=.92$ ). Table 15 reports a complete list of alternative models, including the final model, and Figure 8 displays the best-fitting model graphically.

Figure 8. Censored Normal Model of Youth Attitudes Toward Police. Estimated trajectories (solid lines), observed group means at each time point (dot symbols), and estimated group percentages. Dashed lines are 95% pointwise confidence intervals on the estimated trajectories.

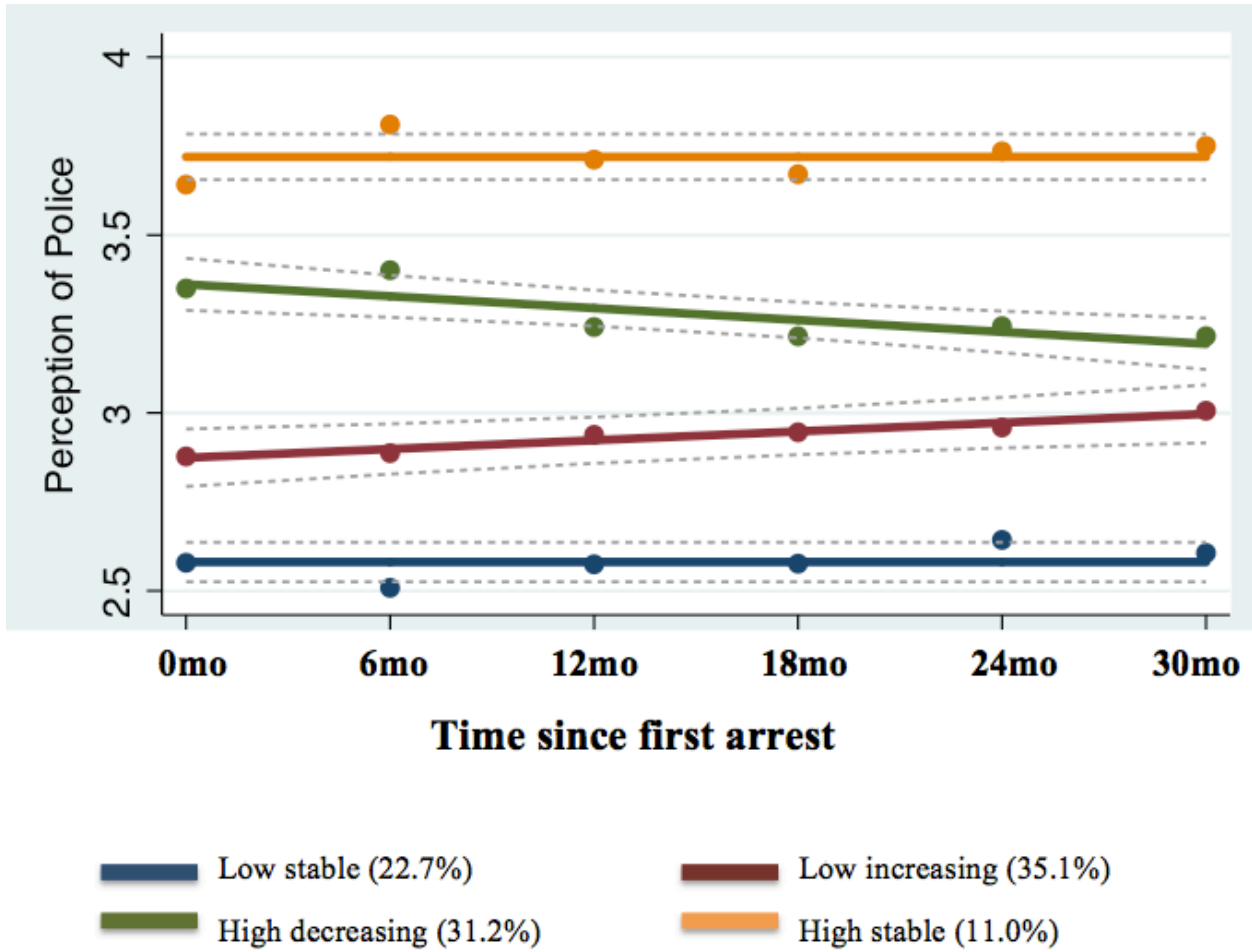




Table 15. Group-Based Trajectory Models for Youth Attitudes Toward Police: A Sample of Alternative Models Fitted.

Parameter 1 (estimate)	Parameter 2 (estimate)	Parameter 3 (estimate)	Parameter 4 (estimate)	Group 1 % membership	Group 2 % membership	Group 3 % membership	Group 4 % membership	AIC <sup>a</sup>	BIC <sup>a</sup>
3-Group Solution									
Intercept (2.66)**	Linear (-0.01)	Linear (-0.01)	Linear (-0.01)	35.53**	48.47**	16.00**		-715.00	-729.56
Linear (0.02)*	Linear (-0.01)	Intercept (3.64)**	Intercept (3.64)**	36.01**	48.21**	15.78**		-711.93	-726.50
Linear (0.02)*	Linear (-0.01)	Linear (0.0003)	Linear (0.0003)	36.02**	48.21**	15.77**		-712.93	-729.32
Intercept (2.66)**	Intercept (3.13)**	Linear (-0.002)	Linear (-0.002)	34.93**	48.59**	16.48**		-714.48	-727.22
4-Group Solution									
<b>Intercept</b> <b>(2.58)**</b>	<b>Linear</b> <b>(0.02)*</b>	<b>Linear</b> <b>(-0.03)**</b>	<b>Intercept</b> <b>(3.72)**</b>	<b>22.74**</b> <b>(N=65)</b>	<b>35.06**</b> <b>(N=98)</b>	<b>31.15**</b> <b>(N=88)</b>	<b>11.05**</b> <b>(N=31)</b>	<b>-685.11</b>	<b>-703.32</b>
Intercept	Linear	Linear	Linear	22.88**	35.07**	30.99**	11.06**	-685.86	-705.89

(2.58)**	(0.02)*	(-0.03)**	(0.01)					
Linear	Linear	Linear	Linear					
(0.02)	(0.02)*	(-0.03)**	(0.01)	23.23**	35.18**	30.65**	10.95**	-685.11
Intercept	Quadratic	Linear	Intercept					-706.96
(2.58)**	(0.001)	(-0.03)**	(3.71)**	22.78**	35.06**	31.12**	11.04**	-686.10
								-706.13

\* $p < .05$ , \*\* $p < .01$ .

<sup>a</sup>AIC indicates Akaike information criterion and BIC indicates Bayesian information criterion. These values are based on the model

∞ likelihood with a penalty for the number of model parameters. Although not directly interpretable, lower values of AIC and BIC indicate better model fit.

Note: The model in bold represents the best-fitting model used in analyses

After identifying the trajectory groups, a series of multinomial logistic regressions tested whether mothers' Wave 1 attitudes toward the police were associated with group membership, accounting for youth age, and race/ethnicity. Mothers with more positive initial attitudes toward the police were more likely to have sons who are part of the high-stable or the high-decreasing groups than the low-stable or low-increasing groups. Mother's Wave 1 attitudes toward police did not distinguish between the low-stable and the low-increasing groups, nor the high-stable and high-decreasing groups. Table 16 displays the results. To test whether youths' attitudes toward police might affect mothers' attitudes, rather than the hypothesized direction of influence, the trajectories themselves were used to predict mothers' attitudes toward police at Wave 2. No significant effects were found. Additionally, no interactions between mother's attitude toward the police and youth age or race/ethnicity were found.

Youth re-arrests over the course of the two years since their first arrest were added to the model, to distinguish whether mothers' attitudes or youths' experiences were more influential on youth attitude trajectories. Although the pattern of results did not change for the influence of mothers' Wave 1 attitudes toward police on youth attitude trajectories, youth rearrests were not significantly associated with trajectory groups. This implies that a mother's attitude toward the police outweighs youths' own experience with the justice system in determining his attitudes toward the police (see Table 17).

*Table 16. Multinomial Logistic Regression Results for Mothers' Attitudes Toward the Police by Youth Attitudes Toward Police Trajectory.*

McFadden's pseudo-R <sup>2</sup> = 0.0342		Mother's Wave 1	Race/ethnicity <sup>a</sup>
		Attitude Toward Police	
Low Stable vs. Low Increasing	Coeff. ( <i>SE</i> )	.07 (.34)	-.10 (.38)
	95% CI	-.60 - .74	-.84 - .64
	Relative Risk Ratio	1.07	.91
Low Stable vs. High Decreasing	Coeff. ( <i>SE</i> )	.85* (.36)	-.12 (.39)
	95% CI	.15 - 1.55	-.88- .64
	Relative Risk Ratio	2.35	.88
Low Stable vs. High Stable	Coeff. ( <i>SE</i> )	1.29** (.50)	-.88 (.62)
	95% CI	.32 - 2.27	-2.09 - .33
	Relative Risk Ratio	3.65	.42
Low Increasing vs. High Decreasing	Coeff. ( <i>SE</i> )	.79* (.33)	-.03 (.36)
	95% CI	.13 - 1.43	-.74 - .69
	Relative Risk Ratio	2.19	.96
Low Increasing vs. High Stable	Coeff. ( <i>SE</i> )	1.23* (.48)	-.78 (.60)
	95% CI	.28 - 2.17	-1.96 - .40
	Relative Risk Ratio	3.41	.46
High Decreasing vs. High Stable	Coeff. ( <i>SE</i> )	.44 (.48)	-.75 (.60)
	95% CI	-.49 - 1.38	-1.93 - .42
	Relative Risk Ratio	1.55	.47

*\*p < .05, \*\*p < .01.*

*<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group*

*Table 17. Multinomial Logistic Regression Results for Mothers' Attitudes Toward the Police and Youth Re-arrests by Youth Attitudes Toward Police Trajectory.*

McFadden's pseudo-R <sup>2</sup> = 0.0386		Mother's Wave	Youth	Race/ethnicity <sup>a</sup>
		1 Attitude	Re-arrests	
		Toward Police	(Wave 1-2)	
Low Stable vs. Low Increasing	Coeff. (SE)	.04 (.34)	.07 (.35)	-.14 (.38)
	95% CI	-.63 - .71	-.64 - .71	-.88 - .61
	Relative Risk Ratio	1.04	1.07	.87
Low Stable vs. High Decreasing	Coeff. (SE)	.82* (.36)	-.09 (.36)	-.17 (.39)
	95% CI	.11 - 1.52	-.78 - .61	-.94 - .59
	Relative Risk Ratio	2.26	.92	.84
Low Stable vs. High Stable	Coeff. (SE)	1.22* (.50)	-.82 (.54)	-.99 (.62)
	95% CI	.24 - 2.19	-1.87 - .23	-2.21 - .23
	Relative Risk Ratio	3.37	.44	.37
Low Increasing vs. High Decreasing	Coeff. (SE)	.78* (.33)	-.15 (.33)	-.04 (.37)
	95% CI	.13 - 1.43	-.80 - .49	-.75 - .68
	Relative Risk Ratio	2.18	.86	.96
Low Increasing vs. High Stable	Coeff. (SE)	1.18* (.48)	-.89 (.52)	-.85 (.61)
	95% CI	.24 - 2.11	-1.90 - .12	-2.04 - .34
	Relative Risk Ratio	3.24	.41	.43
High Decreasing vs. High Stable	Coeff. (SE)	.40 (.47)	-.74 (.52)	-.81 (.60)
	95% CI	-.53 - 1.33	-1.75 - .28	-2.00 - .37
	Relative Risk Ratio	1.49	.48	.44

*\*p < .05, \*\*p < .01.*

*<sup>a</sup> White coded as 1, Non-White coded as 0; no differences were found when Latino was used as the reference group*

## **V. Discussion**

Each year, close to two million arrests involve a youth under age 18 (OJJPD 2011). Yet, juvenile offenders do not exist in a vacuum; rather, they are situated within a broader family context that includes other family members who may affect, and be affected by, that youth's experience. Because justice system contact is a process rather than a singular event, the results from this dissertation deepen our understanding of the dynamic between mothers' and sons' relationships following a son's first arrest. While not all hypotheses were supported, several key themes emerged, including youth offending behavior and the mother-son relationship, the role of official re-arrests, the role of youth age, and the experience of Latino families. Each of these findings is unpacked below.

### **Youth Offending Behavior and the Mother-Son Relationship.**

**The Mother-Son Relationship and Youth Reoffending Over Time.** The first aim of this dissertation was to examine the extent to which the mother-child relationship changes in

accordance with youth re-offending. Results suggest that the quality of the *initial* mother-son relationship plays an important role in youth re-offending behavior, but that youth re-offending has less of an effect on subsequent relationship quality. As expected, both mother's and son's initial (baseline) perception of high relationship warmth and low hostility was associated with sons' membership in the low-desisting offending trajectory group rather than the medium-desisting or high-persisting groups. These results are consistent with previous research suggesting that supportive parenting is related to lower levels of delinquency (Palmer & Hollin, 2001).

Contrary to expectations, trajectories of (youth-reported) re-offending did not predict a change in mother's relationship quality after two and a half years. However, mother-reported youth re-offending was associated with her perception of the relationship. As mothers *perceived* that their sons were offending more (regardless of whether they actually were engaged in such behavior), they reported less warmth and more hostility in their relationships with their sons two and a half years later. In other words, although *youth-reported* re-offending did not predict mother's perception of the mother-son relationship over time, mothers' perceptions of their sons' offending did inform mothers' perceptions of the quality of the relationship with their sons.

These results are better understood when situated within the developmental context. Adolescence is a time when youth begin to exercise greater behavioral autonomy (Laursen & Collins, 2009; Steinberg, 1990). Youth may choose to engage in more activities outside the



direct supervision of their parents relative to childhood and to disclose less about those activities (Smetana, Metzger, Gettman, & Campione-Barr, 2006). As a result, their parents know less about the adolescent's behavior (Stattin & Kerr, 2000). Thus, it is understandable that mothers in the present study underestimated their sons' offending behavior relative to sons' self-report, and that the two measures were only weakly correlated ( $r = .26, p < .001$ ). Given this reporter discrepancy, it makes sense that a mother's perception of the quality of the mother-son relationship would align with *her perception* of her son's behavior rather than his actual behavior. However, as the results illustrate, an unnecessary rift may be created between parents and their children if they are not on the same page in terms of youth behavior.

### **The Role of Official Re-Arrests.**

**Socialization of Justice System Attitudes Over Time.** The second aim of this dissertation was to investigate how mothers' attitudes toward the justice system change over time in response to continued justice system exposure, and how mothers' attitudes socialize youths' attitudes. In line with socialization theory (Maccoby & Martin, 1983) and earlier cross-sectional research (Cavanagh & Cauffman, 2015b; Sargeant & Bond, 2015), mothers with more positive initial attitudes toward the police were more likely to have sons who are part of the high-stable or the high-decreasing justice attitude groups than the low-stable or low-increasing groups. Because youth attitude trajectories did not predict mothers' attitudes two and a half years later (Wave 2),

the direction of influence is from mother to son, such that mothers socialize their children to hold certain attitudes toward the police over time.

Interestingly, re-arrests *did not* affect youths' attitudes toward the police, after accounting for mothers' attitudes. To the extent that a mother's attitude toward the police outweighs her son's own experience with the justice system in determining his attitudes toward the police, parent attitudes (and precipitating treatment by police) may be an important point of intervention to improve youth attitudes (Cowan, Powell, & Cowan, 1998; Magnuson & Duncan 2004; Van Ryzin & Dishion 2012). Interventions designed to improve the relationship between youth and police, but which ignore the family context (see for example LaMotte, Ouellette, Sanderson, Anderson, Kosutic, Griggs, & Garcia, 2010) may be ineffective if the youth returns to a home environment that is mistrusting toward police. Therefore, community policing programs designed to build bridges at the level of the family (e.g. family group conferencing approaches; see McCold & Wachtel, 2012) may be more effective in shaping the attitudes of the next generation. This may extend to other legal actors as well. Recent research also finds evidence that parents who perceived their child's probation officers to be unfair or unsupportive were less likely to encourage probation compliance (Vidal & Woolard, 2016).

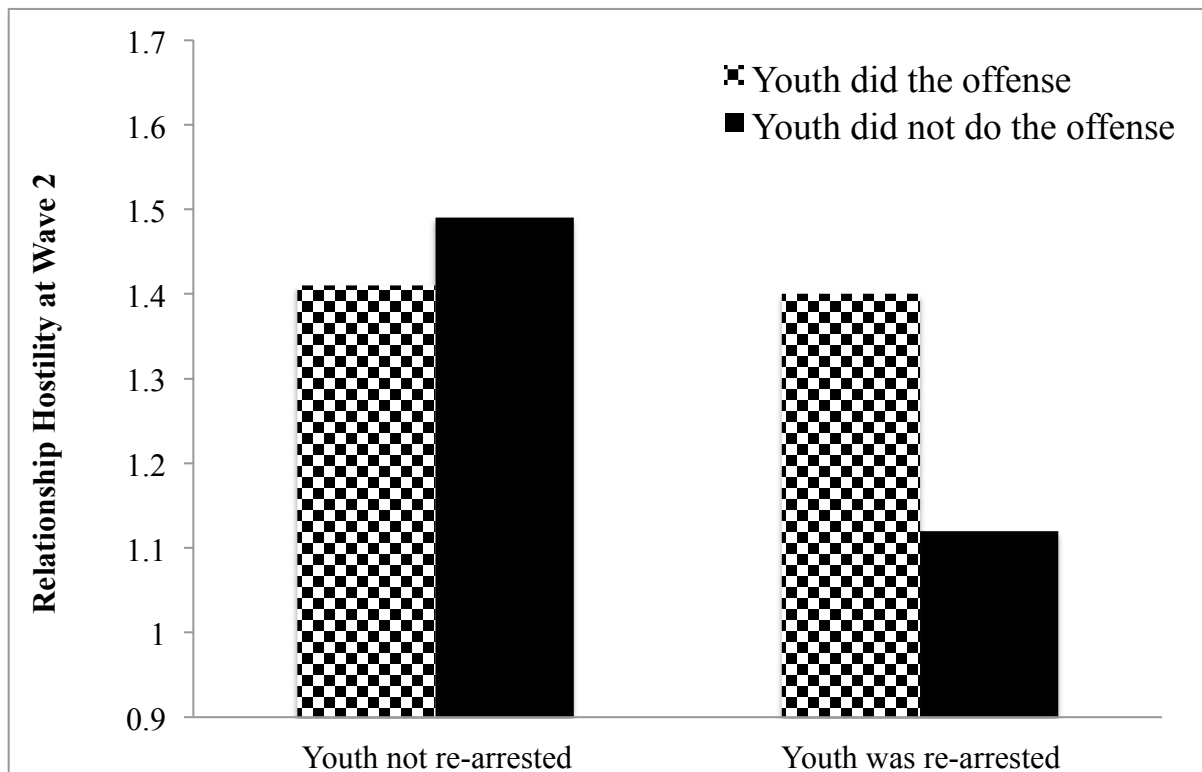
**Re-arrests and Mothers' Locus of Control.** Surprisingly, youths' official re-arrests were not related to mothers' or sons' reports of relationship warmth or hostility. Because not all

criminal behavior is detected or processed by law enforcement, it could be that youths' day-to-day antisocial behaviors (e.g., mother's perception of youth reoffending, as noted above) are more closely associated with the quotidian mother-son relationship. Notably, however, mothers became more cynical toward the justice system when their sons had been re-arrested compared to those whose sons had not been re-arrested. Although a great deal of literature links arrests to legal cynicism (Kirk, & Matsuda, 2011), this study is the first to note that *mothers* become more cynical toward the law after the arrest of their *children*. Coupled with the finding that a mother's relationship with her son is *not* affected by his re-arrests, this could suggest that the locus of a mother's disillusionment following her son's arrest is the justice system itself, not her son. Furthermore, perhaps mothers react to their (perception of their) sons' reoffending behavior with decreased warmth and increased hostility, but react to official re-arrests by being cynical toward a system that they perceive to be overstepping its bounds. Indeed, there is evidence that parents react defensively to intervention of law enforcement into what they may consider a family matter (Marshall & Haight, 2014).

In order to investigate this unexpected, but important, direction, supplemental analyses were conducted. At baseline, mothers responded yes or no to the question, "Did your son do the offense he was charged with?" For mothers who responded "yes" (87.22%), there was no relation between re-arrests and relationship quality, as reflected in the full sample results.

However, for mothers who did not think that their sons did the offense for which they were charged (12.78%), hostility *decreased* over time in response to re-arrests [ $F(7,253)=17.39$ ,  $r^2=.33$ ,  $p=.006$ ]. Figure 9 displays the results graphically. A re-arrest following what was perceived to be an unfair first arrest might make mothers feel protective of their children, orienting them away from the justice system.

Figure 9. Mother's Perception of Youth's Guilt Moderates the Relation Between Youth Re-arrests and Relationship Hostility at Wave 2.



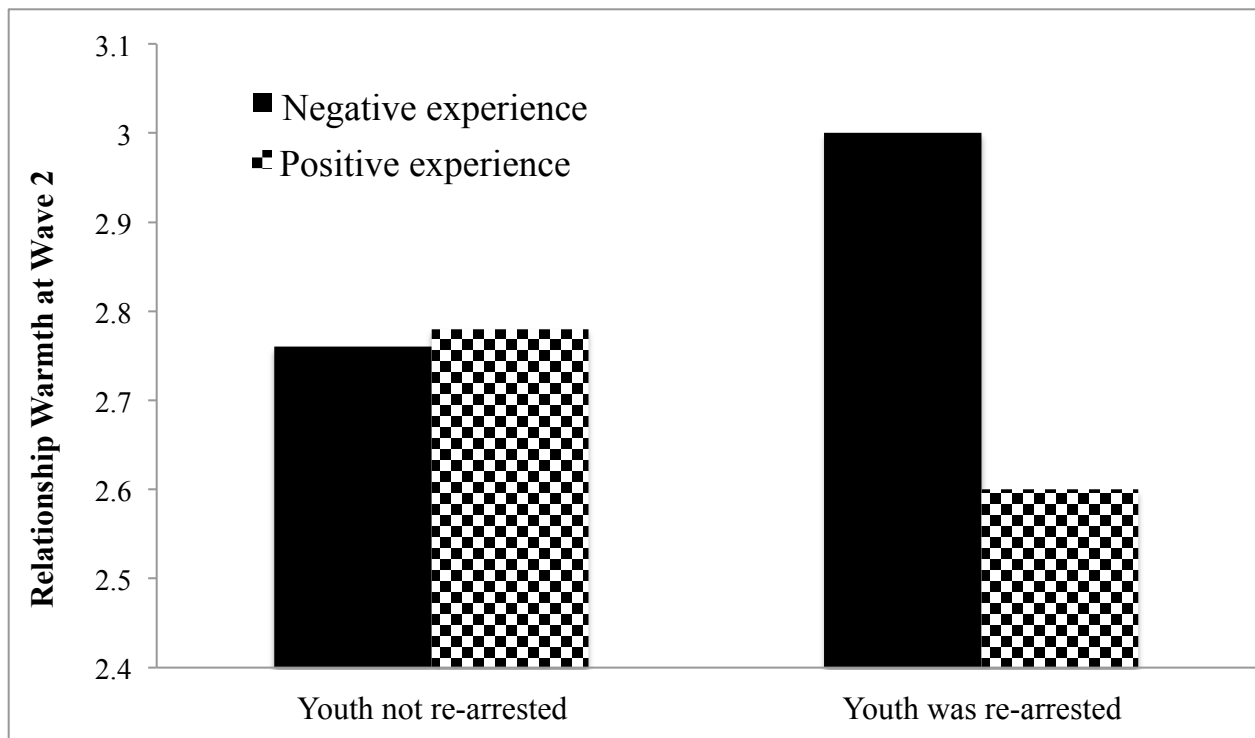
Further support for this idea comes from a second set of supplemental analysis. Mothers were also asked an open-ended question, “How has your life changed as a result of your son’s arrest?” Although responses varied widely, many could be grouped into two broad categories: those mothers who described the experience positively and those who reported a negative experience. Table 18 provides quotes to illustrate both positions. Mothers who described their experience after their son’s first arrest as positive, but whose sons got rearrested, reported a decrease in warmth over time (see Figure 10). Conversely, mothers who had a negative experience and whose sons were re-arrested displayed an increase in warmth [ $F(7, 164)=21.59, r^2=.48, p=.049$ ].

*Table 18. Example Responses to Open-ended Question Asking Mothers how their Lives Changed as a Result of their Son’s First Arrest.*

Response Category	Sample Quote
Positive Experience	<p>“Well it has changed me positively because we have had so much communication. It has served us well. He has realized this could have led to something more serious. We are now more involved and closer. And I also have more resources to keep him busy.”</p> <p>“He is more cooperative. It really scared him. Now he is more mature and he is doing a lot better in school. He is a lot more settled now. It was very beneficial for him it seems.”</p>

Negative Experience	"I suspect that he was discriminated against so I am aware of the racism that is around us. This makes me very sad. I talk to my son more and I tell him that this is not our country and we need to behave as guests so he wont get anymore problems."
	"I have lost faith in the system. We were not allowed to know what the 'victim' & witnesses said. It's hard to defend your child with no information. I was happy when [my son] was referred to the Probation dept. however it quickly became obvious that the probation officer didn't care at all."

Figure 10. Valence of Mother's Justice System Experience Moderates the Relation Between Youth Re-arrests and Relationship Warmth at Wave 2.



Taken together, these results lend insight to the mechanism behind the results pertaining to relationship quality, re-arrests, and attitudes toward the system. It may be that mothers who felt that their sons were treated unjustly—either arrested for an offense they did not commit or not served by the juvenile justice system in a way that was fair—perceived additional arrests to be the fault of an unfair system rather than their child’s behavior. When mothers perceived that the system acted in a just manner and that her son was improving, youth reoffending behavior (either perceived by the mother or an actual re-arrest) was seen as a failure on the son’s part, not the system’s, leading to decreases in warmth. These results highlight the importance of the procedure in juvenile justice contacts. There may be repercussions to the family’s attitude toward the law and relationship quality that endure for several years after an arrest in response to the fairness or the procedure in the initial arrest.

### **The Role of Youth Age.**

Youth’s age emerged as an important factor when considering the mother-son relationship and re-offending behavior. Previous research suggests that positive parenting is associated with reduced delinquency consistently across age groups (Wright & Cullen, 2001). However, the results of this dissertation tease apart the role of age to illustrate the mechanisms through which youth of varying age groups are differentially affected by parenting.

For younger youth (i.e., ages 13-15 at study enrollment), mothers’ perception of

reoffending was associated with a sharper decrease in relationship warmth relative to older children (i.e., ages 16-17 at study enrollment). Furthermore, younger sons were more likely than older sons to be in the low-desisting offending trajectory group than medium group, regardless of maternal warmth at baseline. However, when baseline warmth is high, older sons were also more likely to be in the low- than medium-offending group. Older sons with low baseline maternal warmth were no more likely to be in any of the offending groups.

Taken together, these results suggest that a warm parent-child relationship matters differently depending on the youth's age. First, high maternal warmth may be protective against reoffending among older youth in particular. Furthermore, if relationship warmth decreases in response to mothers' perception of youth offending among younger youth, as these youth age, they may lose the benefit of a warm mother-son relationship that may set them on the lowest offending trajectory. For this reason, early interventions to strengthen the mother-son relationship may be a promising component in crime desistance as youth age.

### **The Experience of Latino Families.**

One of the strengths of this dissertation was the ability to address the aims of the study through the lens of Latino culture. Overall, and contrary to expectations, results suggest that the experience of Latino families in the juvenile justice system is comparable to that of non-Latino families, with two notable exceptions. First, the decline in a mother's report of warmth in



response to her perception of youth offending was steeper among women who identified as Latina than it was for their non-Latina counterparts. This may be because family unity (*familisimo*) is culturally salient within Latino families, and youth reoffending may subvert this value by prioritizing an impulsive, selfish act over what is best for the family. Since strained family ties are associated with increased psychological distress among Latina women (Molina, & Alcántara, 2013), it stands to reason that youth reoffending is a source of such strain and distress among Latina mothers in the present study.

Given that minority families often face increased policing and harsher sanctions than white families (Epstein & Goff, 2011; Vidales, Day, & Powe, 2009; Welch et al., 2011), it was surprising that neither race/ethnicity nor any of the hypothesized Latino cultural factors affected trajectories of youth attitudes toward *police*. Nevertheless, when considering mothers' legal cynicism more generally, documentation status interacted with youth rearrests. Specifically, undocumented mothers became more cynical toward the justice system than did documented mothers once their sons were re-arrested. This may reflect recent changes in the enforcement of, and rhetoric surrounding, immigration policy. A recent study suggests that undocumented adults are more likely to be mistrustful of legal actors than their documented counterparts because they worry that a higher dosage of justice system contact will increase the odds that they, or a family member, will face scrutiny over their immigration status (Theodore, & Habans, 2016). Thus,

mothers in the present study may become more cynical of law enforcement's intentions over time with increased exposure (e.g., youth rearrests).

### **Strengths and Limitations.**

The present dissertation has a number of strengths, including its longitudinal design, its specialized sample, and its multi-method approach (i.e., dual informants and official records).

Longitudinal research is difficult in high-risk populations, including youthful offenders. The present study successfully tracked first-time juvenile offenders and their mothers from three jurisdictions across the United States over two and a half years. These features provide greater confidence that the results may be generalized to first-time male youth offenders and their mothers across the United States.

Despite these notable strengths, several limitations must be considered. First, data were collected from mothers and sons at different frequencies; that is, sons were interviewed semiannually over two and a half years, while mothers were only interviewed twice over two and a half years. Ideally, the study would include an equal number of timepoints of both mothers and sons, to allow for joint trajectory modeling. Likewise, additional timepoints of data from mother participants would have allowed for the use of more advanced longitudinal statistical techniques (e.g., latent growth curve modeling, multilevel modeling). Additionally, power was too limited to allow for trajectories modeled by youth's age rather than by timepoint. Although group trajectory

models were attempted by age, because there were many more youth in the middle of the age range than the high and low ends of the age range (i.e., 230 youth reached age 16, but only 18 youth were age 13), the models could not be appropriately calculated. To calculate trajectories by age, an age distribution that includes at least 100 *youth at each age* (see Curran, Obeidat, & Losardo, 2010; other researchers suggest a minimum  $N=250$ ; see Nylund, Asparouhov, & Muthén, 2007) would be necessary.

As with any longitudinal study, attrition is a concern. Of mothers who were interviewed at baseline, 14.86% of mothers could not be located for their second interview, and 2.02% refused to be re-interviewed. However, there were no significant differences between families in which mothers completed their baseline interview and those who did not. Finally, it would be inappropriate to overgeneralize the results from the present study, given the sampling constraints. Youth were recruited based on having committed a specific set of low-to-medium-level offenses; most juvenile offenders are males, and the vast majority of primary guardians of youthful offenders are women, thus only male youth and their mothers were eligible to participate. Because youth were recruited after having entered the system, there was no way to test relationship quality or justice system attitudes *before* the first arrest. Future research might expand on this study by comparing the relationships of mothers and sons to mothers and daughters or fathers and sons. Additionally, future studies that examine youth who have

committed more serious crimes, may find that the odds of re-arrest, transfer to adult court, and financially/emotionally stressful sanctions will likely increase, leading to a different pattern of results.

### **Implications and Conclusion.**

An ecological perspective on juvenile offenders requires a consideration of factors at the level of the individual (i.e., age, youth offending behavior), the microsystem (i.e., the parent-child relationship), the macrosystem (i.e., the fairness and legitimacy of legal institutions and official re-arrests), and the exosystem (i.e., Latino cultural factors) when explaining youth reoffending behavior over time. This study provides a more complete picture of the path to success for juvenile offenders by accounting for each of these layers.

The results support a developmental view of youth's age when working with families in the juvenile justice system. Although adolescence is a time when the parent-child relationship changes, this is not to say that older children are no less in need of a positive relationship with their parents. Indeed, older youth are particularly protected from reoffending by warm maternal relationships. Early intervention for at-risk families is also important, given that decreases in relationship warmth associated with re-offending were steeper for younger youth.

Latino youth are undoubtedly over-represented within the juvenile justice system. Special attention to the unique challenges faced by justice system-involved Latino families is required in

order to reduce the disproportionate number of Latino youth in the system. Latino families experienced a sharper decrease in warmth in response to mother's perception of youth offending as compared to non-Latino families. Likewise, undocumented mothers became more cynical toward the justice system than documented mothers when their sons are re-arrested. Taken together the results suggest that, although the mechanisms connecting youth reoffending behavior to mother-son relationship quality function similarly for Latino and non-Latino families in many ways, Latino families may require additional sensitivity in policy and practice when they come into contact with the juvenile justice system.

Results suggest that a positive mother-son relationship is protective against future youthful offending. What is more, this relationship may be damaged as youth continue to engage in criminal behavior, but only to the extent that the mother is aware of the offending. Although one would expect that mothers who perceived their sons to be offending more would additionally monitor them more closely, supplemental analyses revealed that parental monitoring was not associated in mother's report of youth offending. This surprising result highlights the need for parenting skills-related interventions; perhaps equipping mothers with the tools to respond to youth re-offending through more effective monitoring would mitigate the toll reoffending takes on the mother-son relationship.

Perhaps the most important message from this study is that the fairness of the procedure of an arrest has long term consequences, not just for the child's attitude toward the system, but also for his parent's attitude, and even the quality of his relationship with his parents. Mothers expressed more legal cynicism when their sons had been re-arrested compared to those whose sons had not been re-arrested. Although re-arrests did not affect the quality of the mother-son relationship, mothers react to their perception of youth reoffending with greater hostility and less warmth, suggesting that the locus of a mother's disillusionment following her son's *arrest* is the justice system itself, but her disillusionment following (her perception of) youth antisocial behavior is her son.

Supplemental analyses further clarified this mechanism. First, a son's re-arrest following what his mother perceived to be an unfair first arrest or a negative first experience with the justice system is associated with *decreased* hostility and *increased* warmth. At face value, it may be unexpected that the mother-son relationship would improve following a re-arrest, but the mechanism behind this improvement is the key: mothers react to what they perceived to be an unfair system by rallying around their sons and orienting away from the justice system. Second, mothers who described their experience after their son's first arrest as positive, but whose sons got rearrested, reported a decrease in warmth over time. Coupled with the finding that relationship warmth decreased in response to mother's perception of youth offending, this

suggests that the mother-son relationship is damaged only when the mother conceptualizes reoffending as the fault of the youth, rather than the system.

In all, mothers who feel that their sons were treated unfairly by the system situate the locus of control for subsequent youth re-arrests on an unfair system, rather than their child's behavior. Mothers feel that the system acted in a just manner situate the locus of control for youth reoffending behavior (either perceived by the mother or an actual re-arrest) as her son's responsibility. These results highlight the importance of the procedure in juvenile justice contacts, particularly when families initiate their first-ever juvenile justice system experience.

This study provides evidence that parents' attitudes affect not only youth attitudes, but also the quality of the mother-son relationship following continued justice system exposure. Because these were first time offenders followed for two and a half years, it seems that the repercussions of fair treatment during the first arrest endure long after the arrest, and affect multiple areas of functioning within the family. Understanding the way that parent and youth characteristics interact over time could reduce recidivism, increase community-level support of the justice system, and ultimately reduce costs associated with law enforcement to families and taxpayers. In designing legislation and interventions, we must keep in mind the broader family context in which youth offenders are embedded, both during and after justice system contact.

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