Siblings in foster care: A relational path to resilience for emancipated foster youth

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ABSTRACT

Sibling relationships are a powerful influence on child development, one that takes on particular significance in contexts of familial disruption or adversity. This study examined the effect of sibling co-placements during foster care on subsequent educational competence, occupational competence, housing quality, relational adjustment, and civic engagement in a sample of 170 recently emancipated foster youth (66.5% female; $M_{age} = 19.63$). Analyses evaluated direct relations between the proportion of time spent with a sibling in foster placement and young adult adjustment outcomes, as well as indirect effects from sibling co-placement to later competence through youth's coherence displayed in a narrative of experiences in foster care. The coherence of life narratives develops in the context of primary relationships, including those with siblings, through co-constructed meaning making and emotional discourse, particularly regarding difficult life events. Emancipated foster youth's verbal narratives about their experiences in foster care were evaluated for narrative coherence based on the organization, complexity, and balance of youth's narratives. Analyses documented significant indirect effects of sibling co-placement on young adult competence through narrative coherence. Moreover, moderation analyses indicated that these effects were particularly robust among males. Findings are discussed with respect to relational mechanisms underlying resilience, and the potential for sibling co-placement to provide a relational context for risk and resilience among emancipated foster youth.

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1. Introduction

Nearly 40,000 foster youth (~10% of all foster youth) emancipate or "age out" of the United States child welfare system annually (US Department of Health and Human Services, 2013). While compelling changes in federal and state polices are transforming the emancipation process (e.g., US Department of Health and Human Services, 2013), there remains a pressing need to clarify protective processes that may support resilience among transition-aged foster youth. Sibling relationships are a powerful influence on child development (Buist, Deković, & Prinzie, 2013), particularly in contexts of familial disruption or adversity (Conger, Stocker, & McGuire, 2009). This investigation examined whether and how sibling co-placements while in foster care support youth's competence in the domains of education, occupation, housing quality, relationships, and civic engagement, in a sample of newly emancipated foster youth.

Emancipated foster youth experience profound disruptions in relationships with parents, peers, teachers, and community members as they traverse multiple placements over extended durations in care (Pecora et al., 2006). Accompaniment by one or more siblings may confer a sense of commonality and stability that takes on unique value

in the context of the often marked relational disruptions associated with foster care placement. Although theorists have argued that sibling co-placement may support resilience when youth leave the system and transition to adulthood (Conger et al., 2009; Herrick & Piccus, 2005), and some studies have examined sibling relationships among *current* foster youth (Hegar, 1988; Hegar & Rosenthal, 2011; James, Monn, Palinkas, & Leslie, 2008; Linares, Li, Shrout, Brody, & Pettit, 2007; Shlonsky, Webster, & Needell, 2003), this study is among the first to examine resilience among emancipated foster youth as a function of time spent with one or more siblings while in care.

1.1. Sibling effects in development

Siblings develop unique attachments with one another that exert diverse and independent influences on development beyond other family relationships and dynamics (Brown & Dunn, 1992; Natsuaki, Ge, Reiss, & Neiderhiser, 2009; Perner, Ruffman, & Leekam, 1994). Children with siblings may benefit from having a peer-like partner with whom they can explore the world and negotiate social and cognitive challenges (e.g., conflict resolution, perspective taking) in ways that offer unique opportunities for skill development, relative to those afforded by parental partners. Although exploitative or coercive sibling dynamics may negatively affect child development (Brody, 1998; Kim, Hetherington, & Reiss, 1999; Natsuaki et al., 2009), ample evidence indicates that siblings can support positive development yielding better

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socioemotional adjustment and fewer problems in social settings among children with siblings as compared to only children (Downey & Condron, 2004; Kitzmann, Cohen, & Lockwood, 2002; Stormshak, Bellanti, & Bierman, 1996).

Sibling effects may take on disproportionate salience in contexts of risk, particularly among foster youth given their relational adversity, deprivation, and disruption (Bank & Kahn, 1997; Conger et al., 2009; Hegar, 1988; Herrick & Piccus, 2005). Indeed, the presence of a sibling is typically associated with better proximal outcomes in foster care, such as fewer placements (Albert & King, 2008), higher likelihood of being returned to one's family of origin (Webster, Shlonsky, Shaw, & Brookhart, 2005), better relationships with foster parents (Hegar & Rosenthal, 2009), improved educational outcomes (Hegar & Rosenthal, 2011), and fewer symptoms of anxiety and depression (Wojciak, McWey, & Helfrich, 2013). Although there are no comparative studies of sibling effects in fostered versus non-fostered populations, research with non-fostered youth indicates that sibling relationships can moderate the relation between stressful life events and socioemotional problems, independently of the mother–child relationship (Gass, Jenkins, & Dunn, 2007) and that siblings evidence compensatory relationship intimacy in the context of marital discord (Kim, McHale, Osgood, & Crouter, 2006). Thus, sibling relationships have been shown to play an important role in development, particularly in contexts of elevated adversity or stress.

In addition to children's adversity exposure, child gender may moderate the influence of siblings on development. For example, some research indicates that female sibling pairs may be closer than male or mixed gender sibling pairs (Kim et al., 2006), whereas other work suggests that the gender of the child informant matters more than the match in the dyad, with males reporting fewer benefits (Spitze & Trent, 2006). However, it is unclear whether or not males actually experience fewer benefits from sibling relationships. Female reports of higher quality sibling relationships than males, as well as their acknowledgement of more benefits from these relationships, is consistent with the past work indicating that girls and women may have an increased relationship orientation (and valuation) relative to boys and men (Maccoby, 1990).

Few studies have examined gender differences in the importance of sibling relationships in foster care samples. Tarren-Sweeney and Hazell (2005) found that sibling co-placement was particularly important for girls' socioemotional adjustment (e.g., socialization, mental health) but other findings do not support gender differences in the impact of sibling placements on youth adjustment (Hegar & Rosenthal, 2009). Although theory suggests that females may be more sensitive to sibling effects because of their relational orientation (Maccoby, 1990), it may also be that boys are disproportionately affected by sibling relationships because they encounter and elicit relatively lower levels of intimacy in their outside friendships (McNelles & Connolly, 1999). As such, the potential for intimate, non-selected sibling relationships to support development may be especially important for understanding adjustment among males relative to females (Ma & Huebner, 2008). Given this mixed evidence, this investigation explored if and how youth gender may moderate expected associations between sibling co-placement and youth adjustment to advance our understanding of what matters, why it matters, and for whom it matters (MacKinnon & Luecken, 2008).

1.2. Understanding sibling effects in development

Despite their robust influence on development, few studies have examined specific mechanisms that may mediate sibling effects. Beginning in preschool, children demonstrate a shift to increasingly talk with siblings about feeling states, declining in their reliance on caregivers for this kind of feeling talk (Brown & Dunn, 1992), indicating that the sibling relationship may be integral for children's understanding of the self and others. Attachment theorists suggest that siblings form unique relationships (Ainsworth, 1989; Farnfield, 2009), and, particularly in contexts of parental vulnerability or absence, may serve as compensatory caregivers and companions (East, 2010; Stewart, 1983). Yet

empirical research using an attachment framework to examine sibling relationships is limited (Whiteman, McHale, & Soli, 2011). Some work has shown a positive relation between sibling caregiving and children's comfort levels during parental separation (Stewart & Marvin, 1984), but other findings suggest that the influence of sibling attachments on development may be mediated by sibling effects on social cognition and information processing (Fonagy & Target, 1997). Indeed, children with siblings are more proficient than their only child peers in "false belief" tasks that assess children's abilities to interpret and understand others' feelings and intentions (Downey & Condron, 2004; Perner et al., 1994). Moreover, consistent with attachment theory, improved perspective taking skills are thought to support children's understanding of themselves and their own experiences. In sum, attachment and social cognitive theories of development converge to suggest that siblings constitute a powerful influence on development because they support relational exchanges, collaborative information processing, and meaning making.

Research supports relations between meaning making in narratives of experience, particularly difficult or traumatic events, and personal health and growth (Oppenheim, Nir, Warren, & Emde, 1997; Park, Edmondson, Fenster, & Blank, 2008; Pennebaker & Seagal, 1999; Richman, 2006). Indeed, efforts to support meaning making are central to many therapeutic interventions (Frankl, 1985), particularly trauma-focused therapies (Park & Ai, 2006; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). In typical development, youth depend on caregivers for co-constructive support of narrative meaning (Fivush, Bohanek, & Marin, 2010). In adverse contexts such as foster care, children are doubly challenged to make meaning of difficult and uncontrollable life events in the absence of guided support for doing so. Thus, sibling co-placement may support children's positive development and subsequent adjustment by facilitating their narrative capacity to integrate and make sense of their experiences in and out of foster care.

Youth's narratives may be characterized by content (i.e., declarative statements about the nature of experience as positive or negative) and coherence (i.e., the complexity, consistency, and organization of the narrative). Although sibling co-placement may not affect the nature of youth's experiences in care (i.e., the content of youth's narratives), opportunities to dialog with one or more siblings about shared experiences and events facilitate the organization of youth's experiential narratives about foster care and, by extension, youth adjustment. The extent to which there is a clear, complex, consistent, and convincing depiction of content forms the core of narrative coherence. In a coherent narrative, content, such as a statement that "foster care was the best thing that could have happened in my life," is consistent with the narrator's experiential examples to support her/his thematic statements. For example, in the case of a youth who identifies foster care as a positive experience, the narrative would contain clear examples of how foster care positively impacted her/his life. In an incoherent narrative, this same youth may instead provide little support for positive content, perhaps even providing contradictory evidence (e.g., examples of abuse or traumatic separations) with little awareness (or monitoring) of these inconsistencies. Thus, narrative incoherence may reflect youth's avoidance or preoccupation with their prior experiences, both connoting a rigidity of information processing that is thought to undermine adjustment (Main, Kaplan, & Cassidy, 1985). As confidantes and foster care compatriots, siblings may facilitate the development of a balanced and coherent life story wherein experiences, both negative and positive, are contextualized and organized in a fashion that integrates (rather than disintegrates) processes of memory and meaning.

In contrast to narrative content, which can be evaluated qualitatively (e.g., Drapeau, Saint-Jacques, Lépine, Bégin, & Bernard, 2007; Hauser & Allen, 2007; Unrau, Seita, & Putney, 2008; Samuels & Pryce, 2008) or quantitatively (Oppenheim & Waters, 1995), narrative coherence is traditionally drawn out of qualitative data as a quantitatively coded continuum of organization (Main & Goldwyn, 1984; Main, Goldwyn, & Hesse, 2003; Robinson, Mantz-Simmons, Macfie, & The MacArthur Narrative

Group, 1992; Sher-Censor & Yates, 2014). Although attachment researchers have long appreciated the importance of quantitative indices of narrative coherence for understanding how people organize and access meaning and representation in day-to-day experience, its role among foster youth has received far less attention relative to qualitative, content-based analyses of foster youth's meaning making. Given the relevance of narrative coherence for understanding resilient outcomes in adversity exposed populations of "looked after" children in the UK (Greig et al., 2008), children raised in violent homes (Grych, Wachsmuth-Schlaefer, & Klockow, 2002), and children of mothers with borderline personality disorder (Macfie & Swan, 2009), this investigation evaluated narrative coherence as a putative mechanism underlying expected relations between sibling co-placement and age-salient adjustment outcomes among newly emancipated foster youth.

1.2.1. Narrative coherence and the process of resilience in emerging adulthood

Resilience is expressed in "good" (i.e., competent) outcomes despite prior or concomitant exposure to serious threats to development (Masten, 2001), such as early maltreatment and placement into foster care (Cicchetti & Toth, 2005). However, because adaptive domains wax and wane in significance over time as biological, experiential, and cultural factors render individual facets of development and adaptation differentially important, so, too, do the criteria for evaluating competence (Masten et al., 1995, 2004). In emerging adulthood, educational competence, occupational adjustment, housing quality, and relationships with peers, partners, and one's community (i.e., civic engagement) are recognized as important domains of adjustment (Arnett, 2000; Roisman, Masten, Coatsworth, & Tellegen, 2004). Consistent with contemporary models of resilience as the presence of strength (rather than the absence of vulnerability or psychopathology; Luthar & Zigler, 1991), this investigation evaluated the contribution of sibling co-placement to youth adjustment as guided by this developmental task approach (Masten et al., 1995).

Educational competence, occupational adjustment, and housing quality are closely related, yet distinct indicators of young adult competence in western cultures. Foster youth are at heightened risk for high school dropout with just 58% of foster youth completing high school versus 89% of non-fostered youth (Barrat & Berliner, 2013); only a small minority of foster youth go on to enroll in higher education, let alone complete a bachelor's degree (Pecora et al., 2006). Likewise, and perhaps not surprisingly given these grim educational statistics, emancipated youth struggle in the occupational domain. In one study, Goerge et al. (2002) found that aging out youth evidenced more difficulties gaining and maintaining employment as compared to both reunified foster youth and low-income youth. Indeed, across three states, no more than 45% of aging out youth reported any employment during the first three years after emancipation. Housing quality is also intimately connected to youth success in education and employment, and may be a particularly important indicator and conduit of resilience for foster youth given that many youth emancipating from care have difficulties finding safe and stable housing, sometimes resulting in episodes of homelessness during their transition to adulthood (Courtney & Barth, 1996; Fowler, Toro, & Miles, 2009).

Relational connections through friendships, partnerships and community ties comprise a set of similarly connected yet distinct indices of competence in young adulthood. During this time, youth become more reliant on a few close friends and develop more stable romantic attachments (Connolly, Furman, & Konarski, 2000; Madsen & Collins, 2011; Seiffge-Krenke, 2003). Youth's community connectedness may be expressed through volunteer, organizational, and/or political activities (Youniss et al., 2002) that, in turn, constitute important conduits to social capital (i.e., opportunities to gain knowledge and non-material resources through social relationships; Coleman, 1988; Duke, Skay, Pettingell, & Borowsky, 2009) and skill development (Flanagan & Levine, 2010; Obradović & Masten, 2007). Past work has

indicated that relational competence and civic engagement may be important for identifying (and supporting) resilient development among emancipated foster youth during the transition to adulthood (Farruggia, Greenberger, Chen, & Heckhausen, 2006; Finlay, Wray-Lake, & Flanagan, 2010).

1.3. Study overview

An emerging body of literature indicates that sibling relationships are important for understanding adjustment outcomes among foster youth. Therefore, this investigation sought to document the influence of sibling co-placement during foster care for understanding young adult competence outcomes among newly emancipated foster youth. First, we hypothesized that a larger proportion of time placed with one or more siblings while in care would be related to higher levels of competence in age-salient young adult outcomes, including education, occupation, housing quality, relational adjustment, and civic engagement. Second, we predicted that sibling co-placement would be positively related to youth's narrative coherence, and that this relation would underlie anticipated sibling effects. Third, we explored the moderating impact of gender on expected relations from sibling co-placement to young adult adjustment through narrative coherence. Finally, we evaluated hypothesized relations among sibling co-placement, narrative coherence, and youth adjustment while accounting for select covariates thought to influence youth's placement history, narrative coherence, and/or competence, including youth's race/ethnicity, birth order, age at interview, total placement disruptions while in foster care, age at entry into foster care, maltreatment history, and verbal ability.

2. Method

2.1. Participants

Participants were 170 youth who emancipated from the California foster care system and were between the ages of 17 and 21 years at the time they completed an extensive face-to-face interview in the context of an ongoing study of foster youth's adaptation to aging out. Two participants in the original sample of 172 did not have siblings and were excluded from these analyses yielding a final sample of 170 youth (66.5% female; $M_{age} = 19.63$, $SD = 1.11$). The current sample was 15.3% White European-American, 24.1% African American, 27.6% Hispanic, 0.6% Asian, and 32.4% multiracial. Youth entered care at an average age of 8.72 years ($SD = 5.53$), emancipated from care at an average age of 18.18 years ($SD = .53$), and traversed an average of 7.22 placements ($SD = 4.79$) during their time in care.

2.2. Procedures

Youth were recruited through social service providers, independent living programs, and flyers distributed to agencies serving emancipated youth. A brief intake screening by phone ensured that youth met the criteria for the current study, excluding those who entered care after 16 ($n = 6$), because of juvenile delinquency in isolation from maltreatment ($n = 14$), and/or youth who were outside the target age range at the time of initial contact ($n = 9$). Having a sibling was not a criterion for study inclusion, though only two youth did not have one or more siblings. Likewise, youth were not excluded based on their English language ability; however, all youth who participated were fluent in English. Youth who were incarcerated or hospitalized at the time of recruitment did not participate.

Participants received $75 for completing a 3-hour audio-recorded interview, which consisted of a one-hour computer survey and questionnaires mid-way through the assessment that was flanked by semi-structured interviews. Face-to-face interviews were conducted in our university laboratory (87.2%) or in a private community setting

(e.g., agency offices, libraries; 12.8%) by doctoral students in developmental psychology (54%) or bachelor-level research staff (46%). All procedures were approved by the Human Research Review Board of the participating university.

2.3. Measures

2.3.1. Placement history interview and sibling co-placement

Participants were asked to identify their siblings by age, gender, and relatedness (e.g., adopted, step, half, full). The definition of "sibling" was determined by the participant; however, all participants identified siblings who were either adopted, step, half, or full relatedness. Sibling placement information was obtained during a structured interview that assessed each youth's child welfare placement history. Each participant was instructed to start at her/his first placement into foster care and answer interview queries regarding a) her/his age at placement, b) her/his understanding of the reason for entering that placement, c) the type of placement (e.g., group home, foster home, shelter, kin placement), d) the duration of the placement, e) familial visitation with biological mother, biological father, extended kin, and siblings who were not in co-placement, and f) sibling co-placement (i.e., whether or not the youth was placed with one or more siblings). Sibling co-placement was calculated as the proportion of time in care with one or more siblings divided by the duration of time in foster care. Additional information regarding the nature of the sibling co-placements (e.g., sibling gender and age, relationship quality) were not obtained in this investigation.

2.3.2. Young adult competence

The principle investigator and two doctoral students evaluated each youth's adjustment across age-salient competence domains based on information collected during the interviews. With the exception of housing quality, which was rated on a 9-point scale, each competence domain was coded using a 7-point scale with higher scores connoting greater levels of overall competence. Global competence ratings were used to permit the integration of information across discrepant reports as when a participant reported high relationship satisfaction concomitant with high relationship violence (see Collins & Sroufe, 1999 for discussion). Likewise, participants who endorsed high levels of community involvement through service, but elsewhere clarified that they were court-ordered to complete service hours, earned a lower global civic engagement score than those who articulated intrinsic motivations for service (e.g., to give back to my community). Each competence domain was evaluated in accordance with clearly defined scale points from extremely low to extremely high yielding high reliability estimates (i.e., intraclass correlations; ICC) across 40% of the sample.

2.3.2.1. Educational competence.
Education ratings were based on the youth's attained level of education, achievement (i.e., grade point average), school conduct (e.g., class attendance, conflict with teachers), and educational values and aspirations ($ICC = .91$). Low competence was indicated by expressed negative values about education (e.g., no plans to pursue further education, does not believe education is important) and low attainment (e.g., no diploma, dropout). Moderate educational competence was marked by graduating high school or obtaining a GED, valuing further education, and clear plans to pursue advanced training and/or post-secondary schooling. High educational competence characterized youth who were attending a community college or four-year university, passing their classes, and who articulated a belief in the value of education for future success and/or happiness.

2.3.2.2. Occupational competence.
Occupational competence was based on the youth's reported work history in the past year with regard to their stability of employment, ascribed importance to work, responsible conduct in the workplace (e.g., reporting to work on time, no

disciplinary actions), and overall job satisfaction ($ICC = .88$). At the low end of the scale, youth had never worked, had no interest in working, and reported they were not looking for a job. Misconduct or poor performance in employment also featured on the low end of the scale. Moderate competence in employment characterized youth who had held jobs in the past and faired reasonably well, but they may have been unemployed at the time of the visit through no fault of their own (e.g., business closed, youth moved to a new location) and were actively seeking employment. Participants who were rated high on the occupational competence scale were gainfully employed, in a full time position, with at least moderate job satisfaction.

2.3.2.3. Housing competence.
Housing quality was rated across multiple dimensions based on youth's descriptions of their living situation during the three months leading up to the assessment. For each place of residence, participants were asked about their length of occupation, the number of bedrooms and bathrooms in the home, the number of people living in the residence and their relationship to the participant, the amount of money the youth spent on rent or a mortgage, and whether or not the living arrangement was supported by a housing program, the government, and/or a significant other (e.g., kin, friend, partner). Two independent coders who were blind to all other information obtained in the interview evaluated youth's housing quality using a 9-point scale ranging from (1) *extremely low* (e.g., homeless) to (9) *extremely high* housing quality (e.g., owns a home and pays a mortgage) ($M_{ICC} = .865$; $SD = .042$). Moderate levels of housing quality characterized youth who were living in "supported" environments (e.g., transitional/subsidized housing. living with a friend's family).

2.3.2.4. Relationship competence.
Relationship competence was assessed based on a comprehensive interview about an intimate relationship with a romantic partner of 2 months or longer (51.8%) or (if not in a relationship) with a close friend (48.2%). Participants completed both structured and open-ended questions to assess core features of the relationship in terms of contact, consistency, intimacy, conflict, and relational expectations. Interview items and coding parameters were based on existing measures and coding schemes for dating and platonic relationships (Egeland, Carlson, Ostoja, Williams, & Kalkoske, 1994) ($ICC = .86$). Low relational adjustment was indicated by infrequent contact (not due to outside constraints, such as deployment), high levels of conflict (e.g., intimate partner violence, frequent arguments), low support (e.g., feeling partner/friend would not be there if the participant needed her/him), and/or low intimacy (e.g., feeling that one cannot share positive and negative things with partner/friend). High relationship competence was assigned to intimate and secure relationships characterized by reciprocity and clear examples of warmth and support (e.g., a relationship featuring open communication and support with a clear example of a time when this was true of the relationship).

2.3.2.5. Civic engagement.
The degree to which each participant engaged with her/his community was based on structured questions regarding voting, volunteering, and organizational membership ($ICC = .90$). Participants' motivations for being engaged were also probed using open-ended questions (e.g., Why did you volunteer?). Low civic engagement captured a general antipathy toward involvement in the community (e.g., dislike of volunteering, refusal to register or vote) or very low involvement (e.g., registered to vote but does not do so). Moderate engagement was characterized by youth who were actively connected to the community through voting, intermittent volunteering, or organized activity (e.g., membership in a club or group with regular attendance). However, these individuals rarely evidenced more than one form of engagement and/or were generally extrinsically motivated (e.g., "I volunteer once a month because my counselor told me it would look good on my resume"). The highest ratings of civic engagement reflected youth who evidenced consistent and multiple forms of

engagement, and expressed intrinsic reward or a sense of fulfillment as a result of their engagement.

2.3.3. Narrative meaning making

Youths' meaning making was assessed using an adapted Five Minute Speech Sample (FMSS; Magaña et al., 1986). Prior to beginning the formal interview, participants were instructed to speak for five uninter-rupted minutes "about what it was like for you in foster care and how those experiences have affected or influenced you." After the participant began speaking, interviewers could offer only one prompt during the speech sample if the participant fell silent for 30 s or longer; "Please tell me more about what it was like for you in foster care and how it affected or influenced you for a few more minutes." FMSS narratives were audio-recorded, transcribed, and double blinded for coding by doctoral- and bachelor-level researchers who were blind to all other information about the participant.

Narrative coherence was evaluated using scales that were adapted for the current study from Sher-Censor and Yates (2014) FMSS-coherence coding as informed by extant narrative coding approaches (Koren-Karie & Oppenheim, 2004; Main et al., 2003; Robinson et al., 1992). Coherence scores were based on Grice's (1975) maxims of discourse to capture the extent to which the youth's narrative evidenced quality (i.e., truthful, provides evidence for what is said), quantity (i.e., a succinct yet complete narrative), relation (i.e., relevant/insightful, thinking in a way that is plainly understood), and manner (i.e., clear and orderly). These maxims were captured to varying degrees across several sub-scales, including (1) Focus — the extent to which the speaker focused on the prompt by describing her/his foster care experience and how it affected or influenced her/him; (2) Elaboration — the extent to which the speaker used detail and expressed a believable narrative; (3) Negative affect — the amount of negative affect expressed in the narrative, irrespective of the amount of positivity; (4) Positive affect — the amount of positive affect expressed in the narrative, irrespective of the amount of negativity; (5) cognitive–affective integration — the extent to which the speaker was able to balance intellect with emotion when describing her/his experiences; and (6) Complexity — the extent to which the narrative addressed multiple experiences and contexts, included positive and negative elements, while supporting her/his statements with detailed examples. Following these sub-scale ratings, a global rating of coherence was assigned to capture the degree to which the youth was able to think about and relay her/his experiences in a believable, consistent, and balanced manner (ICC across 100% of cases = .74).

2.3.4. Covariates

Several covariates were examined at the bivariate level to inform regression analyses, including demographic variables (i.e., age at time of interview, gender [male = 0, female = 1], and race/ethnicity [White = 0, non-White = 1]), birth order, age of entry into foster care, number of placements while in care, child maltreatment exposure, and verbal ability. Child maltreatment was assessed using the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995) to assess experiences of maltreatment and punishment in childhood and adolescence (e.g., did your parents verbally abuse each other? As a child were you punished in unusual ways [e.g., being locked in a closet for a long time or being tied up]?). The CATS includes 38 behavioral descriptors, which are rated on a 5-point Likert scale from 0 (never) to 4 (always). The CATS evidenced good validity (Kent & Waller, 1998; Sanders & Becker-Lausen, 1995) and reliability in prior research (α = .90; test–retest reliability = .89; Sanders & Becker-Lausen, 1995), as well as strong internal consistency in this sample (α = .95). The vocabulary subtest of the Shipley Hartford Institute of Living Scale (SILS; Shipley, 1940) was used to assess youth's verbal ability. The vocabulary subtest includes 40 items of increasing difficulty. Participants were instructed to circle the word that is closest in meaning to the target word from four possible choices. Correct answers were summed to yield a measure of verbal ability.

2.4. Data preparation and analysis

All data were sufficiently normal to render parametric statistics valid (Afifi, Kotlerman, Ettner, & Cowan, 2007) with the exception of birth order, which was square root transformed for these analyses. Maximum likelihood estimation with the EM algorithm in SPSS 20.0 addressed missing data for child maltreatment (1.2%), verbal ability (3.5%), birth order (2.9%), sibling co-placement (11.2%), total placements (6.5%), occupational competence (.6%), relationship competence (1.2%), civic engagement (1.8%), and narrative coherence (.5%) as supported by Little's (1988) MCAR test; χ^2 = 383.02, df = 379, p = .43. Continuous predictors were mean centered to prevent non-essential multicolinearity (Kraemer & Blasey, 2004).

A multivariate analysis of variance (MANOVA) evaluated the mean differences across study variables by participant gender, race/ethnicity, and their interaction. Bivariate analyses explored relations among study variables to inform regression analyses. Regression analyses evaluated sibling co-placement effects on young adult adjustment through narrative coherence and explored the moderating influence of gender on expected relations. Consistent with contemporary approaches to mediation analysis (Hayes, 2009; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002), we evaluated both indirect and direct effects and moderated mediation using Hayes' (2012) PROCESS routine. This SPSS macro represents an advance over traditional regression techniques because it employs a bootstrapping method to yield 95% confidence intervals for both unconditional and conditional direct and indirect effects while correcting for non-normality of predictors. This correction is particularly important when examining moderation effects because interaction terms are known to have non-trivial skew and kurtosis (Hayes, 2009). The PROCESS routine evaluated conditional indirect effects by calculating the significance of the indirect effect at a given value of the moderator variable, accompanied by bias-corrected bootstrapped 95% confidence intervals in lieu of normal theory tests of significance (i.e., p-values). As a non-parametric technique, bootstrapping minimizes the influence of non-normality across study variables, and yields a more reliable estimation of indirect effects than Sobel's (1982) test, particularly in smaller samples (Preacher, Rucker, & Hayes, 2007). The PROCESS routine also addresses problems of hetroskedasticity by using bias-corrected standard errors in the calculation of p-values. Thus, this technique has been widely adopted in an array of disciplines (for review, see Hayes, 2008).

3. Results

3.1. Descriptive statistics

There were no significant mean differences in study variables by gender, race/ethnicity, or their interaction (see Table 1). On average, participants spent 55% of their time in care with one or more siblings; 13.5% of participants were never placed with a sibling, and 18.2% participants were placed continuously with at least one sibling.

3.2. Bivariate analyses

Bivariate relations among study variables are shown for the total sample and by gender in Table 1. The proportion of time in care spent with one or more siblings was associated with higher levels of educational and relationship competence, and with narrative coherence. Narrative coherence was positively related to each adjustment outcome, and adjustment outcomes were positively correlated with one another, except in the case of housing quality, which was not significantly correlated with educational or relational competence. Regarding covariates, verbal ability was positively related with educational and occupational competence, and age at the time of interview showed positive relations with housing quality, occupational competence, and narrative coherence. Child maltreatment, age of entry into care, minority

Table 1
Descriptive statistics and bivariate correlations among study variables.

		M (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1.	Age at interview	19.63 (1.11)	–												
2.	Minority status	78.9% NW	**.011**	–											
			.076												
			−.035												
3.	Birth order	3.02 (2.10)	**−.101**	**.009**	–										
			.005	−.002											
			−.149	.008											
4.	Verbal ability	45.16 (9.88)	**.042**	**−.163***	**.014**	–									
			.107	−.249	−.057										
			.007	−.098	.050										
5.	Maltreatment	108.28 (28.73)	**.084**	**.041**	**−.105**	**.038**	–								
			.025	−.108	−.188	−.074									
			.112	.125	−.073	.103									
6.	Age at first placement	8.72 (5.52)	**−.097**	**−.002**	**−.101**	**.010**	**−.136**	–							
			−.091	.074	.145	.052	−.279*								
			−.104	−.068	−.217*	−.010	−.070								
7.	Placement disruption	7.18 (4.90)	**.042**	**.050**	**.144**	**−.163***	**.293****	**−.393****	–						
			.066	.092	.153	−.263*	.262*	−.405**							
			.031	.032	.141	−.116	.308**	−.390**							
8.	Sibling co-placement	.55 (.38)	**.059**	**−.125**	**−.082**	**.032**	**−.123**	**.039**	**−.359****	–					
			.080	−.158	−.223	.030	−.182	.052	−.347**						
			.048	−.116	−.028	.036	−.098	.028	−.364**						
9.	Education	4.45 (1.33)	**.021**	**−.083**	**.040**	**.298****	**−.046**	**−.003**	**−.192***	**.265****	–				
			−.143	−.101	.100	.064	.047	.000	.032	.313*					
			.090	−.093	.013	.426**	−.092	−.017	−.277**	.243**					
10.	Occupation	3.66 (1.55)	**.243****	**−.093**	**−.063**	**.198****	**−.066**	**−.047**	**−.087**	**.128**	**.388****	–			
			.124	−.174	.023	.154	−.063	−.138	.094	.148	.321*				
			.295**	−.071	−.101	.230*	−.074	−.019	−.156	.117	.405**				
11.	Housing	4.87 (1.29)	**.205****	**−.102**	**−.020**	**.089**	**.043**	**.001**	**.149**	**−.074**	**.120**	**.187***	–		
			.224	−.122	.103	.103	−.135	.005	.228	.063	.126	.350**			
			.193*	−.099	−.077	.083	.129	−.007	.114	−.142	.113	.110			
12.	Relationship	3.30 (1.67)	**−.052**	**−.110**	**.038**	**.019**	**−.024**	**.025**	**−.151***	**.137**	**.169***	**.123**	**−.076**	–	
			.002	−.047	.031	−.134	.031	−.074	.016	.173	.147	.199	.022		
			−.072	−.135	.044	.087	−.043	.077	−.213*	.128	.188*	.106	−.115		
13.	Civic engagement	4.92 (1.49)	**.120**	**.070**	**.110**	**.099**	**−.114**	**−.119**	**.029**	**−.023**	**.403****	**.252****	**.224****	**.127**	–
			.224	.167	.032	.097	−.127	−.068	.039	−.022	.262*	.253	.066	.312*	
			.070	.011	.141	.101	−.110	−.148	.025	−.024	.462**	.250**	.300**	.058	
14.	Coherence	3.86 (1.00)	**.126**	**−.076**	**−.119**	**.102**	**.016**	**.104**	**−.105**	**.117**	**.260****	**.196***	**.221****	**.188***	**.313****
			.353**	−.033	−.059	.103	.010	−.025	−.156	.357**	.159	.167	.196	.243	.416**
			.015	−.115	−.147	.106	.015	.160	−.083	.008	.296**	.202*	.230*	.174	.266**

Note: *p < .05, **p < .01. Top row **bold** = total sample; second row *italics* = males; third row = females. NW = non-White. No mean differences by gender (Wilk's λ = .957 p = .898), race (Wilk's λ = .912 p = .332), or gender ∗ race (Wilk's λ = .951 p = .906).

status, and birth order were not significantly related to any variables of interest and so were not included in regression analyses. Placement disruption was negatively related to sibling co-placement, educational competence, and relationship competence.

Bivariate relations among study variables differed by gender. Although relations between coherence and competence were largely comparable across males and females, greater time spent with a sibling in care was related to coherence among males, but not among females. Regarding covariates, age at interview was related to increased coherence among males, but not among females. Verbal ability was significantly related to educational competence among females, but not among males. Placement disruption was related to lower educational and relational competence among females, but not among males. Greater time spent with a sibling in care did not differ in its relation to resilience outcomes among males versus females, and narrative coherence was similarly consistent in its positive relation to resilience in both groups.

3.3. Regression analyses

A moderated mediation analysis evaluated the effect of sibling co-placement on adjustment outcomes (i.e., education, occupation, housing, relationship, and civic engagement) through narrative coherence as qualified by participant gender. All analyses controlled for placement disruption and age at interview, as suggested by preliminary correlation analyses. In addition, given positive associations of verbal ability with educational and occupational competence, these

regressions also controlled for youth's verbal ability. Parameter estimates and 95% bootstrapped confidence intervals (CI) across 5000 resamples are reported here.

3.3.1. Educational competence

Sibling co-placement and narrative coherence were uniquely associated with higher educational competence (see Table 2). Sibling co-placement was related to higher narrative coherence, but a significant interaction indicated that this relation was qualified by gender. Conditional indirect effect analyses to assess moderated-mediation revealed a significant path from sibling placement through narrative coherence to educational competence for males, but not for females.

3.3.2. Occupational competence

Sibling co-placement was not significantly related to higher levels of occupational competence in the full regression (see Table 3). However, narrative coherence was related to higher occupational competence and the contribution of sibling co-placement to narrative coherence emerged as a significant indirect path to occupational competence for males.

3.3.3. Housing competence

Consistent with the bivariate relations, sibling co-placement was not directly related to housing competence in the full regression (see Table 4). However, narrative coherence was positively related to housing quality, and the indirect path from sibling co-placement to housing competence via coherence was significant for males.

Table 2

Conditional indirect effect of education on sibling placement through narrative coherence as moderated by gender.

Effect	B	Bootstrapped SE	t	p	95% CI bias corrected	
					LLCI	ULCI
a (time with sibling ≥ coherence)	.88	.341	2.58	.011	.21	1.55
w (gender)	.11	.159	.72	.472	−.20	.428
a * w (time with sibling * gender ≥ coherence)	−.95	.435	−2.19	.030	−1.81	−.09
b (coherence ≥ education)	.28	.090	3.07	.003	.10	.46
c (time with sibling ≥ education [total effect])	.84	.277	3.03	.003	.29	1.39
c' (time with sibling ≥ education [direct effect])	.79	.267	3.03	.004	.26	1.32
Conditional indirect effect						
Males	.24	.127	–	–	.06	.60
Females	−.02	.082	–	–	−.21	.130

Note: Covariates (not shown) include placement disruption, age at interview, verbal ability. SE = Standard Error. LLCI = Lower limit confidence interval. ULCI = Upper limit confidence interval. SE and confidence intervals are bias-corrected based on 5000 samples. No *p*-values given for indirect effects, as indirect effects are known to be non-normal.

3.3.4. Relationship competence

Sibling placement was not significantly related to higher levels of relationship competence in the full regression (see Table 5). However, narrative coherence was related to higher relationship competence and the contribution of sibling co-placement to narrative coherence emerged as a significant indirect path to relationship competence for males.

3.3.5. Civic engagement

Consistent with the bivariate relations, sibling placement was not directly related to civic engagement (see Table 6). However, narrative coherence was positively related to civic engagement, and the indirect path from sibling co-placement to civic engagement via coherence was significant for males.

4. Discussion

Consistent with prior research indicating that foster youth spend just 50–60% of their time in care with one or more siblings (Child Welfare Information Gateway, 2013), sibling separation featured prominently in the child welfare experiences of these emancipated foster youth with only 55% of their time in care featuring placement with one or more siblings. Sibling co-placement evidenced notable, yet complex, relations with youths' subsequent development and adaptation. Direct relations between sibling co-placement and youth adjustment outcomes were mixed, with significant relation to educational attainment, which mirror those in prior studies (Hegar & Rosenthal, 2011), but no significant associations with youths' occupational competence, housing quality, relational adjustment, or civic engagement in the multivariate models. Importantly, narrative coherence consistently emerged as an indirect mechanism by which sibling co-placement was related to youths' resilience in all five competence domains. Moreover, this relational path to resilience was especially pronounced among males. Together, these findings point to the need for more research on sibling placement effects, and highlight the importance of sibling co-placement for supporting the coherence of youths' emergent life narratives and, by extension, their young adult adaptation.

These findings support the influence of sibling co-placement on meaning making as a mechanism underlying positive sibling effects, especially for males. However, the modest direct sibling effects on adjustment amidst significant indirect effects points to the likely complexity of sibling influences in development. Although we expected the current design to be biased toward positive sibling effects, since extremely negative sibling exchanges would likely reduce the odds of co-placement in the foster care context, the obtained results suggest that sibling relationships remain vulnerable to mixed effects in foster care and point to the need for ongoing efforts to ensure that these relationships are of good quality. Processes that could undermine youth resilience via sibling effects include deviancy training or coercive relational processes between siblings (Patterson, 1984; Natsuaki et al., 2009; Conger, Conger, & Scaramella, 1997), and await further examination.

As expected, narrative coherence emerged as a significant process by which sibling co-placement supported resilience in the age-salient adjustment domains. Narrative coherence reflects a comfort with and capacity to process experience openly and free from defense (Sher-Censor & Yates, 2014; Steele & Steele, 2005), and these information processing abilities have been shown to contribute to improved self-regulation and adaptation (Greig et al., 2008; Oppenheim et al., 1997; Shields, Ryan, & Cicchetti, 2001). Positive relations between sibling co-placement and narrative coherence are consistent with broader evidence that responsive and consistent attachments support experiential integration and meaning making (Oppenheim et al., 1997). As compensatory attachments in the foster care context, siblings may provide important relational opportunities for reciprocity, reflection, and meaning making (Bank & Kahn, 1982; Herrick & Piccus, 2005; Wojciak et al., 2013). These findings support efforts to preserve positive sibling

Table 3

Conditional indirect effect of occupation on sibling placement through coherence as moderated by gender.

Effect	B	Bootstrap SE	t	p	95% CI bias corrected	
					LLCI	ULCI
a (time with sibling ≥ coherence)	.88	.341	2.58	.011	.21	1.55
w (gender)	.11	.159	.72	.472	−.20	.428
a * w (time with sibling * gender ≥ coherence)	−.95	.435	−2.19	.030	−1.81	−.09
b (coherence ≥ occupation)	.22	.011	1.97	.050	.000	.435
c (time with sibling ≥ occupation [total effect])	.40	.321	1.23	.219	−.24	1.03
c' (time with sibling ≥ occupation [direct effect])	.36	.321	1.13	.261	−.27	.995
Conditional indirect effect						
Males	.19	.122	–	–	.02	.51
Females	−.01	.069	–	–	−.18	.11

Note: Covariates (not shown) include placement disruption, age at interview, verbal ability. SE = Standard Error. LLCI = Lower limit confidence interval. ULCI = Upper limit confidence interval. SE and confidence intervals are bias-corrected based on 5000 samples. No *p*-values given for indirect effects, as indirect effects are known to be non-normal.

Table 4
Conditional indirect effect of housing competence on sibling placement through coherence as moderated by gender.

Effect	B	Bootstrap SE	t	p	95% CI bias corrected	
					LLCI	ULCI
a (time with sibling ≥ coherence)	.88	.336	2.60	.011	.21	1.53
w (gender)	.11	.157	.68	.494	−.20	.42
a * w (time with sibling * gender ≥ coherence)	−.95	.431	−2.21	.030	−1.81	−.10
b (coherence ≥ housing)	.33	.097	3.40	<.001	.14	.52
c (time with sibling ≥ housing [total effect])	.17	.298	−.57	.569	−.76	.42
c' (time with sibling ≥ housing [direct effect])	.24	.289	−.819	.414	−.81	.33
Conditional indirect effect						
Males	.29	.139	–	–	.08	.64
Females	−.03	.099	–	–	−.24	.16

Note: Covariates (not shown) include placement disruption, age at interview. SE = Standard Error. LLCI = Lower limit confidence interval. ULCI = Upper limit confidence interval. SE and confidence intervals are bias-corrected based on 5000 samples. No p-values given for indirect effects, as indirect effects are known to be non-normal.

connections for foster youth, while highlighting the potential ameliorative impact of interventions to facilitate youth's narrative meaning making, experiential integration, and, by extension, psychosocial adjustment.

The disproportionate salience of sibling co-placement for males' narrative coherence may indicate that, relative to female foster youth, males encounter relatively few compensatory opportunities for relational reciprocity and intimacy outside the familial context. In the face of familial disruption, females may be better able to develop and/ or are more readily provided with relational opportunities for reflection through discourse with alternate supporters, such as foster parents, friends, and teachers. Importantly, these findings do not support gender differences in the significance of sibling co-placement for understanding youth adjustment outcomes. Rather, they elucidate a specific pathway of vulnerability (and untapped opportunity) for positive development among males. Male foster youth may be in special need of, and particularly responsive to, relationships that can support their meaning making and experiential integration during their time in care. However, further research is needed to elucidate the underpinnings of this gender effect as it may be that females are more adept at developing intimate compensatory relationships beyond the family unit, outside supporters may provide females with greater opportunities for narrative reflection and processing, and/or females may be called upon to provide (rather than receive) caregiving and narrative support during sibling co-placements.

4.1. Strengths and limitations

This investigation constitutes a novel effort to document the impact of sibling co-placement on processes of risk and resilience among emancipated foster youth, pointing to a potentially powerful relational path to resilience for male foster youth wherein sibling co-placement supported males' narrative meaning making and, by extension, their adaptation in the domains of education, occupation, housing, intimate relationships, and civic engagement. Despite the innovation and applied

implications of this research, these findings are qualified by several limitations.

First, the cross-sectional design of this investigation limited our ability to render directional conclusions. For example, it may be that successful adaptation in age-salient domains engenders narrative coherence in addition to, or instead of, the presumed contributions of narrative coherence to adjustment. Likewise, though the current findings are consistent with our hypothesis that sibling co-placement supports narrative meaning making and experiential integration, the retrospective nature of our child welfare placement data raises the possibility that youth who evidenced relatively more narrative coherence and/or who encountered relatively more positive sibling relationships also endorsed more time spent in care with siblings. Alternately, youth who evidenced greater narrative coherence post-emancipation may also have done so pre-emancipation and consequently been more willing and better able to articulate the importance of their sibling relationships to key decision makers (e.g., social workers, judges) yielding higher rates of co-placement. Although abstracted case record data could clarify these issues, variability in the quality of recorded data across cases may render self-report data just as (or more) accurate (Hodges, 1990; Rutter, Maughan, Pickles, & Simonoff, 1998).

Second, the unique features of the current sample constitute both a strength and a limitation of the present analyses. The non-random participant selection coupled with the geographic focus on southern California may limit generalizability of these findings to the broader population of emancipated foster youth. At the same time, however, the current sample ensured a wider, and more representative, range of youth experiences and adjustment because these participants were not necessarily service engaged, as is the case when using a random sample of social service involved youth.

Third, additional adjustment domains and alternate methods of assessment await examination and implementation in future research. Given the current emphasis on youth's competence in the context of adversity (i.e., resilience), this investigation focused on positive

Table 5
Conditional indirect effect of relationship competence on sibling placement through coherence as moderated by gender.

Effect	B	Bootstrap SE	t	p	95% CI bias corrected	
					LLCI	ULCI
a (time with sibling ≥ coherence)	.88	.336	2.60	.011	.21	1.53
w (gender)	.11	.157	.68	.494	−.20	.42
a * w (time with sibling * gender ≥ coherence)	−.95	.431	−2.21	.030	−1.81	−.10
b (coherence ≥ relationship)	.23	.087	2.61	.010	.06	.40
c (time with sibling ≥ relationship [total effect])	.36	.291	1.23	.215	−.21	.93
c' (time with sibling ≥ relationship [direct effect])	.30	.283	1.06	.289	−.26	.86
Conditional indirect effect						
Males	.20	.107	–	–	.04	.47
Females	−.02	.070	–	–	−.19	.11

Note: Covariates (not shown) include placement disruption, age at interview. SE = Standard Error. LLCI = Lower limit confidence interval. ULCI = Upper limit confidence interval. SE and confidence intervals are bias-corrected based on 5000 samples. No p-values given for indirect effects, as indirect effects are known to be non-normal.

Table 6
Conditional indirect effect of civic engagement on sibling placement through coherence as moderated by gender.

Effect	B	Bootstrap SE	t	p	95% CI bias corrected	
					LLCI	ULCI
a (time with sibling ≥ coherence)	.88	.336	2.60	.011	.21	1.53
w (gender)	.11	.157	.68	.494	−.20	.42
a ∗ w (time with sibling ∗ gender ≥ coherence)	−.95	.431	−2.21	.030	−1.81	−.10
b (coherence ≥ civic engagement)	.52	.116	4.45	<.001	.29	.75
c (time with sibling ≥ civic engagement [total effect])	−.11	.394	−.288	.773	−.89	.66
c` (time with sibling ≥ civic engagement [direct effect])	−.22	.385	−.583	.561	−.99	.53
Conditional indirect effect						
Males	.45	.209	–	–	.13	.98
Females	−.04	.152	–	–	−.36	.24

Note: Covariates (not shown) include placement disruption, age at interview. SE = Standard Error. LLCI = Lower limit confidence interval. ULCI = Upper limit confidence interval. SE and confidence intervals are bias-corrected based on 5000 samples. No p-values given for indirect effects, as indirect effects are known to be non-normal.

adjustment outcomes, rather than on psychopathology and maladaptation. Moreover, the current analyses examined observable indices of youth's manifest adjustment, to the exclusion of subjective domains, such as self-esteem, self-efficacy, and happiness, all of which warrant further consideration in future research. Likewise, this study emphasized multidimensional adjustment within each examined domain, rather than isolated indices of competence. By definition assessments of global competence may occlude meaningful discrepancies within and across adjustment domains and standardized assessments (e.g., dating violence versus relationship satisfaction; educational attainment versus educational engagement).

Finally, because the current data were drawn from a broader study of risk and resilience among newly emancipated foster youth, potentially meaningful features of the sibling context were not collected in this study. Sibling influences on development are dynamic and multifaceted, with both positive and negative effects that may vary across contexts or time. The quality of sibling relationships (e.g., warmth, hostility), as well as factors related to sibling composition (e.g., age, birth order, gender match) may qualify the influence of sibling co-placements on development (e.g., Kim et al., 2006; Spitze & Trent, 2006). Likewise, qualitative methods would complement the current quantitative emphasis on the duration of sibling co-placement to yield a more complex and likely valid index of sibling effects on development.

4.2. Implications for intervention and policy

Child welfare case planning and placement decisions are increasingly focused on sibling connections (Shlonsky, Bellamy, Elkins, & Ashare, 2005), and recent legislation has attempted to protect sibling relationships. For example, the California extension of the federal Fostering Connections to Success Act (Assembly Bill-12, 2010) mandates reasonable efforts to keep siblings together in foster care (unless it would be detrimental to the children's best interests) and promotes consistent visitation in cases of sibling separation. Indeed, continuing legislation attempts to ensure that best practice is followed more closely in regard to siblings (for example, 2014's Senate Bill-1099). Despite increased emphasis on sibling relationships in recent child welfare legislation, however, siblings are commonly placed apart even when co-placement is in their best interests.

Sibling separations may follow from the challenges inherent in keeping children together, such as a foster provider's beliefs about the importance of maintaining and facilitating sibling relationships, constraints on sibling group size, differential care needs across siblings, and large sibling age differences (James et al., 2008; Wulczyn & Zimmerman, 2005). Despite these challenges, the current findings support ongoing policy and intervention efforts that recognize and promote the potential for sibling relationships to enhance youth's ability to adaptively process the notable disruptions attendant with foster care. Moreover, in contrast to the presumed relational sensitivity of females

(Maccoby, 1990; Tarren-Sweeny & Hazell, 2005), these findings demonstrate that males also benefit from placement with a sibling, particularly with regard to the protective function of sibling co-placement as a support for coherent meaning making. By extension, efforts to provide safe and sustained relational connections with alternate supporters, such as mentors, Court Appointed Special Advocates (CASA), foster parents, and peers, are important, especially for male foster youth. Moreover, consistent relations between narrative coherence and youth resilience for both males and females highlight the importance of interventions and activities that support narrative processing and meaning making through open dialog and/or opportunities for narrative expression (e.g., life story projects; Pennebaker & Seagal, 1999).

Given the complexity of sibling relationships, and the multifaceted influences on youth adjustment suggested by the current study, applied efforts should strive to increase positive and healthy sibling relationships for youth in care. Projects like the More Fun with Sisters and Brothers Program (Kennedy & Kramer, 2008), which aim to increase the quality of regulation and conflict resolution between siblings, could provide a powerful source of strength and stability for foster youth. Likewise, consistent with best practice policy (Child Welfare Information Gateway, 2013), asking children about their sibling relationships is important to identify optimal placements for foster youth, as well as to understand the impact of sibling co-placement on youth adjustment.

4.3. Conclusions

Siblings hold special significance in human development, as they are among the longest and most consistent relationships we experience, usually outlasting time spent with one's parents, spouse, or one's own children (Bank & Kahn, 1982). Beyond their notable influence in typical development, sibling relationships may be particularly important for foster youth amidst concomitant parental deprivation or mistreatment. This study underscores the importance of maintaining sibling relationships for increasing resilience among foster youth. For males in particular, sibling co-placement may support narrative meaning making capacities while providing opportunities for youth to "work through" difficult life experiences (Bretherton, 1990). Future work should continue to explore relational mechanisms underlying pathways toward competence or vulnerability for foster youth, with particular attention directed toward understanding how siblings may support resilience in one another upon emancipation from care.

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