Sibling Relationships

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Sibling Relationships

Sibling relationships are the longest lasting relationships in most individuals' lives. Cross-cultural research shows that siblings are central in the everyday lives of children and adolescents around the world, and that in many cultures, these relationships remain among the most important in individuals' lives across adulthood and into old age (Nuckolls, 1993; Weisner, 1989). Despite dramatic declines in family size in past decades in the US, demographic data reveal that the vast majority of children grow up in homes with at least one sibling (e.g., Hernandez, 1997; U.S. Census Bureau, 2008). Indeed, proportionately more children in the US grow up in a home with a sibling than in a home with a father. And, even in old age, most adults in the US have at least one living sibling (Cicirelli, 1995). As we review below, developmental and family scholars have documented the important role of siblings as sources of socialization and support across the lifespan (e.g., Cicirelli, 1995; Dunn, 2007). In the face of substantial evidence from a range of disciplines on the ubiquity and significance of sibling ties, however, research and theory on sibling relationships have lagged behind those on other family and close relationships.

The goal of this chapter is to provide an overview of the literature on sibling relationships. We highlight the unique qualities of sibling relationships and their significance for one another's behavior, health, and development across the lifespan as well as the commonalities between sibling and other close relationships. Throughout, we describe gaps in the literature on sibling relationships and sibling influences and point to directions for future research. We also argue that, given their centrality in family life, extending our knowledge of sibling relationship dynamics will enhance our understanding of how families operate as systems.

This chapter is organized into two sections. In the first we describe the key dimensions of sibling relationships and review the literature on how sibling relationships change across the lifespan. The remainder of the chapter focuses on influence processes in sibling relationships. Here we consider key theoretical and conceptual

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frameworks that have been applied to explain individual and developmental differences in sibling relationship characteristics and to account for sibling influences on individual development and well-being across the lifespan. We also provide empirical examples consistent with each perspective. Throughout, we take a developmental perspective, highlighting how individuals' changing competencies, tasks, and circumstances serve as forces of change in sibling relationships and their effects. The chapter concludes with a summary of limitations of research to date and directions for future studies.

The Nature and Developmental Course of Sibling Relationships

Dimensions of Sibling Relationships

Sibling relationships are multifaceted (Buhrmester & Furman, 1990; Myers & Bryant, 2008). In the following pages we highlight three dimensions that have been most commonly studied and that characterize many of the group, individual, and developmental differences that are evident in these relationships across time and place.

The first dimension pertains to the extent of *contact and companionship* between siblings. In childhood, siblings are a fixture of everyday life. Time use studies show that European American children spend more out-of-school time with their siblings than with anyone else (McHale & Crouter, 1996), and in ethnic groups in which familism values prevail such as Mexican American families, siblings spend even more time together (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005). Like friends, siblings are a focus of free time activities in childhood, but they also share family-centered activities such as meals and outings. At times siblings may be simply part of the background, observers of their sisters' and brothers' activities and of their social exchanges with parents and peers, but siblings also share a history of family rituals and daily routines. Indeed, siblings' childhood experiences provide the foundation for one of the few lifelong relationships that most individuals experience, and siblings' shared history can serve as a basis for continued emotional connectedness even as their adult responsibilities separate siblings in space and across long time periods.

Beginning in adolescence and continuing into adulthood, sibling companionship begins to decline in Western cultures, as individuals become increasingly involved in the world beyond the family of origin (White, 2001). Given the tasks and transitions of this period in industrialized societies, such as establishing a separate residence, entering the workforce, and family formation, this distancing is not surprising. From a life course perspective, normative activities and roles of adulthood will alter the nature of family relationships, even as siblings' lives remain linked (Elder, 1996). In adulthood, sibling contact may come in alternative forms to everyday companionship. The proliferation of new communications modalities such as email, texting, and social networking websites, may provide expanded opportunities for sibling contact, but these sociohistorical developments have received little research attention. Available data suggest that in the US, sibling contact stabilizes in middle and late adulthood (White, 2001) and that most siblings maintain contact with one another throughout life (Cicirelli, 1995; Spitze & Trent, 2006; White & Reidmann, 1992). For example, studying a nationally representative US sample of 7,730 adults with at least one sibling, White and Reidmann (1992) found that more than half of all brothers and sisters saw and/or contacted one another at least once a month.

Research on adult sibling relationships has been aimed at identifying the factors that explain why some siblings maintain more contact than others, and findings from this research are generally consistent with life course principles. For example, "place" in the form of geographical proximity makes a difference in the extent and nature of adult siblings' direct contact, and social structural factors, including marital status, parental status, and gender also play an important role such that siblings with sisters and those who are unmarried and childless have more contact (Connidis & Campbell, 1995). Also consistent with a life course perspective, life events and

transitions influence sibling contact including marriage, the transition to parenthood, divorce and widowhood, and a parents' declining health or death (Moyer, 1992). Finally, cultural values and practices matter. In non-Western cultures, for example, contact and companionship often extend across the life course because of cultural norms that support proximity including norms about shared households and family obligations (Nuckolls, 1993).

As we elaborate in the next section, contact between adult siblings is thought to be one key element of an attachment relationship between them, and is linked to health and well-being in later adulthood (Cicirelli, 1995). Longitudinal studies of sibling relationships in adulthood have yet to be conducted, however, and we know little about developmental precursors, including family experiences and individual characteristics, that explain why some siblings stay in close contact while other dyads are less involved in adulthood and old age.

A second dimension of the sibling relationship that has received empirical scrutiny is the *emotional tone* of the relationship, including both its valence and intensity. In her seminal review of sibling relationships in childhood and in a series of empirical studies, Dunn and colleagues argued that the emotional intensity of sibling relationships in childhood is a basis for the developmental significance of these ties (e.g., Dunn, 1983; Dunn & Munn, 1986). In childhood, the sibling relationship has been described as a love–hate relationship (e.g., Bryant & Crockenberg, 1980), with the same dyads exhibiting high levels of affection and high levels of conflict (Stocker, Lanthier, & Furman, 1997; Stocker & McHale, 1992). Other research on children and adolescents provides support for the common view that sibling relationships are fraught with conflict and rivalry: observational studies have shown that sibling conflict occurs up to eight times per hour (Berndt & Bulleit, 1985; Dunn & Munn, 1986), and survey data reveal that physical violence between siblings (hitting, biting, punching, and use of weapons like guns and knives) takes place in 70% of families, a rate higher than that of either child or spouse abuse (Strauss, Gelles, & Steinmetz, 1980). Furthermore, how children get along with their siblings is the most frequent source of parent–child conflict in middle childhood (McHale & Crouter, 2003), and is reported by parents to be a chief child-rearing concern (Perlman & Ross, 1997).

What is the basis for conflict in sibling relationships? We address this question in more detail in the next section of this chapter. We note here, however, that, unlike relationships with friends, relationships with siblings, at least in childhood, are nonvoluntary, and many dyads spend large amounts of time together when their activities are not directly supervised by adults. Such conditions may afford opportunities for children to lose their tempers and behave aggressively. Norms and expectations also may play a role, however. Cross-cultural research suggests that sibling relationships may be less conflictual in cultures where roles of older and younger sisters and brothers are proscribed (e.g., Nuckolls, 1993). Further, some work suggests that there are important between-family differences in the emotional tone of sibling relationships in Western societies, with some dyads showing high levels of positivity and negativity, some exhibiting high negativity and low positivity, others behaving in generally harmonious ways and still others experiencing more distant relationships that are neither highly positive nor highly negative (McGuire, McHale, & Updegraff, 1996; McHale, Whiteman, Kim, & Crouter, 2007; Sheehan, Darlington, Noller, & Feeney, 2004).

We know less about the emotional tone of sibling relationships in adulthood. Extant data suggest, however, that most adult siblings feel close to one another, with dyads that live in proximity and those that include sisters reporting the highest feelings of closeness (e.g., Spitze & Trent, 2006; White, 2001). Furthermore, siblings often are identified as sources of support throughout adulthood, especially in old age (Cicirelli, 1995; Voorpostel & van der Lippe, 2007), and perceptions of close sibling bonds, especially with sisters, are linked with psychological well-being in old age (Cicirelli, 1995). Myers and Bryant (2008) identified concurrent behavioral correlates of "commitment" in adult sibling relationships,

including support provision, everyday talk, and protection, and Voorpostel and van der Lippe (2007) found that emotional support was related to siblings' contact frequency, but also, to their living further apart. The quality of adult sibling relationships may be influenced by the quality of their bonds earlier in life, but as we have suggested, the longitudinal data needed to test this idea have not been collected. Suggestive of the significance of early family experience, however, one study collected retrospective data from adults about their parents' marital conflict and found that these recollections were related to higher levels of sibling conflict and poorer sibling relationship quality in adulthood (Poortman & Voorpostel, 2009). Concurrent relationships in the family of origin also are important: Voorpostel and Blieszner (2008) found evidence for both consistency and compensation processes linking parent–child and sibling relationships, such that poor relationships and low contact with parents as well as high parental support were linked to sibling relationship support. In addition to family dynamics, normative life events of adulthood also can have implications for the emotional tone of sibling relationships. The death of a parent, for example, can provide siblings with opportunities to express and experience support (Moyer, 1992).

A third dimension of sibling relationships, and one that distinguishes them from other close relationships, is their *role structure* (Dunn, 1983; Furman & Buhrmester, 1985). In childhood, parent–child and peer relationships differ in the symmetry of partners' roles. The roles of parents and children are complementary, with parents serving as caregivers and sources of authority, and children in the role of dependents and the focus of socialization efforts. In contrast, friends' roles are more reciprocal or egalitarian. Sibling relationships differ from both parent and peer relationships because they include both complementary and egalitarian elements.

Importantly, however, the role structure of sibling relationships varies across time and place. For example, in childhood, sibling roles differ as a function of structural factors, including (a) gender constellation, with older sisters more so than brothers involved as teachers and caregivers in childhood and sources of emotional support in adulthood (Cicirelli, 1991; Stoneman, Brody, & MacKinnon, 1986; Weisner, 1989; White & Reidmann, 1992); (b) age spacing and birth order, with complementary roles more common when siblings are further apart in age and older siblings providing more guidance and support for younger siblings than the reverse (Buhrmester & Furman, 1990; Dunn, 1983; Voorpostel, van der Lippe, Dykstra, & Flap, 2007); and (c) age, with the premise that sibling relationships become more egalitarian in adolescence and adulthood (Buhrmester & Furman, 1990; Cicirelli, 1991). Cultural norms and values also are implicated. Among non-Western societies, complementarity in siblings' roles in childhood is common and takes the form of sibling caregiving, with older sisters often serving as children's primary caregivers. Indeed, in such societies, siblings' caregiving roles are one of the building blocks of the social structure, and roles based on gender and age may persist across the lifespan (Nuckolls, 1993; Weisner, 1989).

Development of Sibling Relationships

Longitudinal studies of sibling relationship qualities are rare and thus a picture of how they develop across the lifespan has to be pieced together. This picture suggests that many children have positive reactions to the prospect of becoming a sibling, and that despite some initial adjustment problems, children maintain their positive attitudes over the first year of their siblings' lives (Dunn, Kendrick, & MacNamee, 1981; Stewart, Mobley, Van-Tuyl, & Salvador, 1987). During the course of early childhood, siblings become increasingly involved in social exchanges, and together with their involvement, rates of prosocial behaviors increase (Pepler, Abramovitch, & Corter, 1981; Stewart et al., 1987). As noted, role asymmetries in sibling relationships are common at this period: older siblings are more often leaders in social exchanges, younger siblings are more likely to imitate their older sisters and brothers, and older siblings are also more likely to see younger siblings as intrusive or annoying than the reverse

(Dunn & Munn, 1986; Pepler et al., 1981; Stewart et al., 1987).

During the first two decades of life, siblings may be the most positive and mutually involved during middle childhood, though their extensive time together may underlie the high rates of conflict during this period (Brody, Stoneman, & McCoy, 1994; Buhrmester & Furman, 1990; Cole & Kerns, 2001; Kim, McHale, Osgood, & Crouter, 2006). Some findings from cross-sectional (Buhrmester & Furman, 1990; Cole & Kerns, 2001) and short-term longitudinal (Brody et al., 1994) studies suggest that positivity and interest vis-à-vis the sibling relationship decline in adolescence. However, longer term longitudinal data collected from both older and younger siblings, suggest that patterns of change from early in middle childhood (about age 7) through early adulthood (about age 20) vary as a function of the sex constellation of the dyad, with mixed sex dyads becoming closer across the course of adolescence and same-sex pairs increasing in intimacy through early adolescence and then showing small declines across adolescence (Kim et al., 2006). Findings also revealed increases in sibling intimacy in early adulthood from before to after firstborns moved away from home (Whiteman, McHale, & Crouter, 2011). Furthermore, closeness between siblings in adolescence is evidenced by research showing higher rates of particular kinds of positive exchanges, such as intimate conversation (e.g., Cole & Kerns, 2001). Social cognitive development in adolescence may provide for more depth in sibling relationships even in the face of declines in companionship. In addition, the developmental tasks of adolescence and young adulthood, including a focus on the world beyond the family, may serve to reduce rivalry and increase feelings of closeness, at least for some dyads. In some family contexts, such as recent immigrant families, siblings may be a particularly important source of information and advice about the world beyond the family because they have knowledge and experiences that their parents lack.

Very little is known about changes in sibling relationships across adulthood and into old age in terms of either developmental patterns of change, or stability of individual differences in relationship qualities. Results from cross-sectional research on adult siblings suggest that some aspects of the relationship, such as warmth (Connidis & Campbell, 1995; Milevsky, Smoot, Leh, & Ruppe, 2005) and social support provision (White & Reidmann, 1992) increase as siblings get older, whereas conflict decreases (Milevsky et al., 2005; Stewart et al., 2001). Whether these patterns reflect change in relationship qualities or cohort differences, however, is unknown. What we know about stability in individual differences is limited to childhood and adolescence, with some evidence indicating that positive relationships in childhood predict relationship positivity in adolescence (Dunn, 2007). The extent to which sibling relationships show stable individual differences from childhood and adolescence to adulthood and old age, however, remains unknown. From a life course perspective, early experiences are only one set of factors that shape the development of sibling relationships across the lifespan. Sociocultural and social structural factors and life and world events, along with ongoing influences from the family and the role of individuals' own needs and dispositions remain important targets for future research on sibling relationship development (Campbell, Connidis, & Davies, 1999;Voorpostel & Blieszner, 2008).

Limitations and Research Directions

Despite progress toward understanding sibling relationships and their development across the lifespan, much remains unknown. Limitations of existing research include its focus on child- and adolescent-age, full biological siblings, from White, middle class families in the US. Few longitudinal data are available, especially studies that follow dyads over extended periods of time and through adulthood, and we know much less about sibling relationships in adulthood and old age than we do in childhood and adolescence. Studying the timing and circumstances of individual and family transitions (e.g., one sibling's transition out of the household, a sister's early transition to parenthood) and their implications

for siblings' experiences across the lifespan may provide new insights into the development of these important relationships (East, Weisner, & Reyes, 2006; Whiteman et al., 2011). Another limitation is that many studies include data from only one sibling, precluding analyses of the potentially different experiences of the two relationship partners. Finally, due to small sample sizes, many studies that include both siblings lack statistical power to test whether sibling experiences vary as a function of such basic factors as the sex constellation of the dyad.

A direction for future research will be to move beyond a focus on single dimensions of sibling relationships to investigate how the different dimensions of these relationships provide a context for other dimensions and help to explain patterns of sibling relationship development. Analytic techniques such as cluster analysis and mixture modeling offer a means of investigating multiple dimensions of sibling relationships as experienced by both partners (e.g., Whiteman & Loken, 2006). Another direction is the integration of developmental approaches with an understanding of how cultural forces shape relationship development. In cultural groups that place more emphasis on collectivism than individualism and where family roles are formally defined (often on the basis of gender and birth order) siblings, rather than parent–offspring or marital relationships, may constitute the primary social bond, and sibling relationship development may exhibit quite a different pattern than has been observed in Western societies (Maynard, 2004; Nuckolls, 1993; Weisner, 1989). Finally, attention should be paid to the ways in which family structure serves as a context for siblings and sibling relationship development (e.g., Deater-Deckard, Dunn, & Lussier, 2002). Demographic changes in US families, including rising rates of cohabitation, divorce, remarriage, and single parenthood, mean that experiences of sibling-hood are changing dramatically. By one count, there currently are more than 26 different types of sibling dyads—full, step, half, adopted, etc. (Treffers, Goedhart, Waltz, & Koudijs, 1990)—a statistic that alerts us to the difficulties inherent in charting a "normative" course of sibling relationship development. In short, the variety in forms of sibling relationships, coupled with limitations in our knowledge base suggest caution in drawing conclusions about typical developmental patterns in sibling relationship development and a plethora of directions for future studies.

Sibling Influence Processes

Research on sibling influences has addressed two issues: the factors that explain individual and group differences in the characteristics of sibling relationships and the ways in which siblings affect one another's behavior, health, and development across the lifespan. Generally, the same theoretical and conceptual frameworks have been proposed to account for both kinds of influence processes, and thus our review is organized around the key frameworks that have informed these areas of research. We describe mechanisms theorized to account for sibling relationship phenomena and empirical studies that are illustrative of four sets of perspectives: psychoanalytic/evolutionary perspectives that highlight potential biological bases of sibling relationship processes; social psychological theories that focus on the role of social interactional processes; social learning theories that target observational learning and reinforcement mechanisms in behavior; and family and ecological systems approaches that direct attention to the embeddedness of sibling relationships in larger social contexts.

Psychoanalytic/Evolutionary Perspectives

Alfred Adler's theory of individual psychology (Ansbacher & Ansbacher, 1956) and John Bowlby's attachment theory (Bowlby, 1969) provide a basis for contemporary research on sibling relationship characteristics and influences. Both theories were grounded in psychoanalytic writings from the early 1900s, though these theorists departed in important ways from tenets of the dominant Freudian model. Adler's and Bowlby's theories also drew on ideas from the field of

ethology being advanced at this time, particularly ideas about instinctual/species-typical patterns of behavior within attachment theory, and about the significance of the adaptive value or survival function of social behavior that is evident in both perspectives (e.g., Tinbergen, 1951). The adaptive function of sibling dynamics has seen renewed attention by evolutionary thinkers in recent years. From both of these perspectives, early family experiences, such as with siblings, provide the foundation for personality development and psychological well-being and thereby undergird social relationship experiences across the lifespan.

Attachment Theory

The focus here is on both developmental changes and individual differences in social relationships. Attachment theory targets the adaptive functions of the early bond between infants and their primary caregivers as critical to infants' survival and as the foundation for future relationships. Infants' intrinsic or instinctual behaviors such as crying and clinging promote proximity to the primary caregiver early in life, and over the first year, an attachment relationship emerges that varies in its security depending on the sensitivity and responsiveness of the infant's caregiver. In turn, the nature of this primary attachment relationship, most often with the mother, is the basis for an internal working model of relationships, or individuals' expectations, emotions, and behaviors surrounding their future relationships, including with their siblings. Indeed, some longitudinal research suggests that infants who are *not* securely attached to their mothers show higher rates of sibling conflict and hostility in the preschool years (Teti & Ablard, 1989; Volling & Belsky, 1992).

Equally important from an attachment perspective is that individuals can form attachment relationships with others besides their primary caregivers. Secure attachment relationships are marked by proximity-seeking and distress at separation as well as feelings of security associated with a relationship partner. Early in life, the need for a sense of security means that attachment relationships are based in others' responsiveness to infants' needs, and thus sensitive and involved older siblings may become objects of attachment. A small set of studies has investigated older siblings' roles as attachment figures and shown that they can serve as a secure base by facilitating their young children's exploratory activities (Samuels, 1980) and by providing comfort when a primary caregiver is unavailable (Stewart, 1983; Teti & Ablard, 1989).

Also of importance to sibling relationships is the idea that, with maturity, individuals increasingly form mutual and reciprocal relationships, wherein each partner's responsiveness to the needs of the other become important. In this way, each sibling's working model can influence the creation and quality of the attachment relationship between them. Not all close relationships are attachment relationships, but the contact and companionship and feelings of intimacy that are key dimensions of sibling relationships suggest that secure attachments may characterize the experiences of many sibling dyads (Cicirelli, 1995). One study examined siblings' attachment relationships from early- to late-adolescence and found a sharp increase in attachment in early adolescence, about age 12 in this Dutch sample (Buist, Dekovic, Meeus, & van Aken, 2002). An increasing focus on peer-like relationships in adolescence, shared social experiences, and increasing capacity for intimacy may be factors in this pattern of change, which clearly deserves more research attention. Other work suggests that characteristics of siblings and of the dyad, including shared experiences and empathy, may undergird attachment relationships between siblings, and some of the very few studies of multiple-birth siblings show that relationships between twins are most likely to involve attachment features (Neyer, 2002; Tancredy & Fraley, 2006). Evidence of the role of sibling influences is that attachment relationships with siblings are linked to adolescent well-being and positive development (e.g., Brook, Brook, & Whiteman, 1999).

A program of research by Cicirelli (1991, 1995) on adult sibling relationships provides the strongest evidence of the sibling bond as an attachment relationship. In this research, Cicirelli targeted contact, help and support, and feelings

of closeness and security as markers of sibling attachment. Findings reveal that most adult siblings maintain contact with one another and are identified as sources of support, especially in old age, and close sibling ties also are linked with psychological and physical health in old age.

Taken together this research suggests that an attachment perspective may provide a solid foundation for research on sibling relationships across the lifespan. In turn, research on the sibling relationship, the only lifelong relationship in most individuals' lives, could serve as a forum for testing lifespan tenets of attachment theory. Sibling relationships are characterized by both hierarchical and egalitarian elements, and these change across place and time. Whether and how sibling attachment relationships change—from older siblings serving as attachment objects to more reciprocal ties—is an important question for attachment theory and for our understanding of sibling relationships.

Adler's Theory of Individual Psychology

Adler targeted the role of the family system, including sibling influences, as central in personality development (Ansbacher & Ansbacher, 1956). This theory focuses on how psychological dynamics such as feelings of inferiority have implications for individuals' style of life, and targets social comparisons and power dynamics in the family as key influences. Adler's insights led him to advocate the importance of egalitarianism—including equal treatment of siblings—as a means of promoting healthful personality development and self-esteem. He also highlighted the ways in which individuals compensate for a sense of inferiority such as by creating maladaptive styles of life.

Adler's ideas about the centrality of sibling experiences in personality development are reflected in his focus on sibling rivalry for parents' attention and time and family resources. According to Adler, rivalry between siblings is grounded in each child's need to overcome potential feelings of inferiority. As a means of reducing competition, siblings often differentiate or de-identify, developing different personal qualities and choosing different niches. In this way, sibling differentiation is a key dynamic in families that supports the development of more harmonious and less conflictual sibling relationships. It also is a key dynamic in individual development and psychological adjustment. Indeed, a body of research on parents' differential treatment of siblings is consistent with Adler's theory in documenting links between parents' differential treatment and both the quality of sibling relationships and individual adjustment in Western cultures. Although Adler's theory places siblings at the center of family dynamics and personality development, to date there is almost no data on *how* differences between siblings' personal qualities emerge or, with some important exceptions (Feinberg, McHale, Crouter, & Cumsille, 2003; Whiteman & Christiansen, 2008), whether differences between siblings are related to more positive sibling relationships.

A resurgence of interest in sibling rivalry and competition for parent and family resources was led by Sulloway (1996) in *Born to rebel: Birth order, family dynamics, and creative lives*. Like attachment and Adlerian theories, Sulloway stressed the *adaptive significance* of sibling dynamics, though he grounded many of his ideas in an evolutionary perspective and also highlighted siblings' competition for limited resources within the family. Thus, Sulloway placed sibling rivalry at the core of family relationships and personality development. Building on Adler's ideas, Sulloway argued that sibling differentiation serves to minimize sibling competition, and that children will select unique niches within the family that maximize their access to resources. In the face of its conceptual appeal, Sulloway drew largely from data on adult outcomes. We still know little about the *development* of sibling rivalry and its links to sibling differentiation, as these processes emerge and change across the lifespan.

Behavior geneticists have investigated the role of genetic similarity in sibling differences and similarities through comparisons of siblings who differ in their degree of relatedness, from monozygotic twins whose genes are 100% similar, to dizygotic and full siblings who are 50% genetically similar on average, to half siblings and even unrelated children living together.

Results from this body of work suggest that, in general, siblings are no more similar to one another than they are to unrelated individuals, and that shared genetic factors account for most of the similarity that is observed between siblings. Differences between siblings, in contrast, are attributed to the nonshared environment, which until recently has not been directly measured in behavior genetics research. Parents' differential treatment, however, is thought to be a significant component of the nonshared environment (Dunn & Plomin, 1990).

Available data reveal that parents recognize differences between their children's behaviors, personalities, and needs. Consistent with the behavior genetics concept of gene–environment correlation, parents often cite children's personal characteristics as eliciting their differential treatment (McHale & Crouter, 2003). And, despite social norms in Western culture that call for parents to treat their children equally (Parsons, 1974), differential treatment of siblings is common across the lifespan. From an evolutionary perspective, genetically based sibling differences are adaptive because variation minimizes sibling competition for the same resources, and variation among siblings' traits also increases the likelihood that at least one sibling will survive under adverse circumstances (Belsky, 2005; Lalumiere, Quinsey, & Craig, 1996). Most research on the role of families in development and adjustment targets one child, but research ranging from behavior genetic (e.g., Dunn & Plomin, 1990) to demographic analyses (Conley, 2000) confirms that within-family differences between siblings in areas ranging from personality and adjustment to adult status attainment are as large and sometimes even larger than between-family differences.

Parental differential treatment of siblings appears to be responsible for at least some of these sibling differences. Differences in parents' affection, discipline, involvement, and other forms of preferential treatment toward siblings also are linked to less positive sibling relationships from early childhood through adolescence (Brody, Stoneman, & Burke, 1987; Shanahan, McHale, Crouter, & Osgood, 2008; Stocker, Dunn, & Plomin, 1989) and to adjustment problems in siblings (Daniels, Dunn, Furstenberg, & Plomin, 1985; McGuire, Dunn, & Plomin, 1995). The context in which differential treatment occurs makes a difference for its adjustment implications, however. For example, siblings who view differential treatment as fair tend to have more positive sibling relationships (Kowal & Kramer, 1997), and in some cases, fairness ratings are linked more consistently with sibling positivity than the amount of differential treatment *per se* (McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000). Differential treatment may also have different implications depending upon the domain (e.g., warmth, discipline) in which it occurs. Further, cultural factors may play a role, such that differential treatment has more negative implications in individualistic than in collectivistic cultures (McHale, Updegraff, Shanahan, Crouter, & Killoren, 2005; Nuckolls, 1993).

In adulthood, differential treatment dynamics persist (e.g., Suitor & Pillemer, 2006, 2007; Suitor, Pillemer, & Sechrist, 2006). This work suggests that differential treatment in adulthood is often linked to siblings' needs (Fingerman, Miller, Birditt, & Zarit, 2009; Suitor et al., 2006), but that structural and relational factors also make a difference. For example, daughters are more likely to be viewed by their mothers as "favorites" than are sons; further, though lastborns have the closest affectional ties with their mothers, firstborns provide more instrumental support; and, mothers also report closer ties to offspring who live close by. Beyond these structural factors, mothers report feeling closer to offspring with similar values (Fingerman et al., 2009; Suitor & Pillemer, 2007). Despite the recognition that differential treatment of siblings continues to operate in adulthood, there is little systematic research on its consequences for sibling relationships or individual well-being. Consistent with childhood research, one study found that adult sibling relationships were most positive when siblings were treated equally by parents (Boll, Ferring, & Filipp, 2003), and another showed that siblings' "justice evaluations" mediated the links between differential treatment and sibling relationship quality (Boll, Ferring, & Filipp, 2005).

Clearly, the implications of differential treatment in adulthood remain an important research direction. Challenges will be to move beyond a focus on individuals' reports to treat the family as the unit of study, including both mothers and fathers, and to expand on examinations of contextual factors to include cultural norms and parental beliefs and attitudes about differential treatment and its implications. In all of this work where social and psychological mechanisms are postulated, researchers also should measure those mechanisms directly and explicitly test their mediation effects (Whiteman, McHale, & Crouter, 2007). Finally, as in other areas of study, the field needs to move beyond its current focus on full biological siblings to learn about whether relationship processes operate differently across different family structures.

Social Psychological Processes in Sibling Relationships

Social psychological theories are directed at explaining how individuals are influenced by others, including the role of individuals' cognitive constructions, in social interactional behaviors. Social psychologists also are interested in group processes, including social norms, social roles, and social interaction dynamics. Despite their relevance to sibling relationships, however, social psychological theories are not typically applied in research on siblings.

Attribution theory (Heider, 1958) focuses on individuals' explanations of the causes of behavior and events, including their own and that of social partners, and stresses the significance of these cognitive constructions for reactions to interpersonal events and experiences. Attribution theory has rarely been applied in studies of sibling relationships, but one study showed that adolescents who attributed negative intentions to their siblings (e.g., the sibling behaved in particular ways "just to be mean") reported more negative sibling relationships over time (Matthews & Conger, 2004). Findings that children's ideas about the reasons for their parents' differential treatment moderate its effects on adjustment (Kowal & Kramer, 1997) likewise support the significance of siblings' cognitive constructions of their relationship experiences.

A social psychological perspective of special relevance to sibling dynamics is social comparison theory. Proposed by Festinger (1954), social comparison theory holds that individuals are intrinsically motivated to evaluate themselves based on how they measure up against others, particularly others who are perceived to be like themselves. An important part of this inborn motivation system is self-esteem enhancement (Suls, Martin, & Wheeler, 2002). Individuals compare themselves to admired others, termed upward comparisons, and enhance their sense of self; via downward comparisons, individuals enhance their sense of self in a defensive way when they find themselves better off than others. Given their shared family background and experiences, siblings are obvious targets for social comparison, and indeed, analytic/evolutionary theories about sibling rivalry assume that siblings compare themselves and their family experiences to those of their sisters and brothers. And, as social comparison theory predicts, individuals who receive more favorable parental treatment relative to their siblings exhibit more positive psychological adjustment (Feinberg & Hetherington, 2000; Feinberg, Neiderhiser, Simmens, Reiss, & Hetherington, 2000; McHale et al., 2000; Shanahan et al., 2008). With some important exceptions (e.g., Connidis, 2007; Feinberg et al., 2000; Noller, Conway, & Blakeley-Smith, 2008), sibling researchers have not studied social comparison processes directly, however, and this important area remains a topic for future research.

Equity theory (Walster, Walster, & Berscheid, 1978) builds on the phenomena of social comparison in its explanations of the role of relationship dynamics in individuals' satisfaction and involvement in their relationships. From this perspective, individuals compare their contributions to and rewards from their relationship *relative to those of their partners*. Relationship dissatisfaction and efforts for relationship change, including withdrawing from a relationship, result from an imbalance between partners' ratios of rewards

vs. contributions. A related perspective, social exchange theory (Thibaut & Kelley, 1959), focuses on individuals' rewards from vs. investments in their social relationships. From this perspective, when a relationship's costs outweigh its benefits, individuals will choose to withdraw from that relationship, particularly when alternative, more satisfying relationships are available to them. There have been some efforts to apply equity theory to adult siblings' experiences, particularly around the care of their elderly parents. Although equity may be stressed in the family system, the provision of care for a parent usually falls on the shoulders of one offspring (Suitor & Pillemer, 1996). And, often the primary caregiver reports feelings of distress and disappointment when other siblings are not helpful (Ingersoll-Dayton, Neal, Ha, & Hammer, 2003; Suitor & Pillemer, 1996). Consistent with the idea that inequity motivates change, Ingersoll-Dayton et al. found that siblings engaged in a variety of behavioral as well as psychological strategies to reestablish equity, and that, when efforts to create equity were unsuccessful, distress increased. Strawbridge and Wallhagen (1991) found that siblings sometimes stopped interacting or even sought legal action against one another when distress over caregiving became too intense. As with the literature on parents' differential treatment, research within an equity theory framework highlights that perceptions of fairness or justice can mediate the links between inequity and relationship qualities (e.g., Boll et al., 2005).

Importantly, equity and exchange tenets are studied in the context of "voluntary" relationships, because these theories imply a level of autonomy and choice to withdraw from a relationship. As such, these processes may not be generally relevant to children's sibling relationships. To the extent that sibling relationships become more voluntary in adolescence and adulthood, however, equity and exchange theories could be usefully applied to explain differences between sibling dyads that remain close vs. those with more distant relationships, particularly when cultural norms regarding sibling roles are unscripted. These theories also could be applied in efforts to understand different types of sibling dyads that may vary in their degree of "voluntariness" such as full vs. step-siblings. Applying these social psychological perspectives can advance our understanding of sibling relationships, and studying these kinds of processes over time in sibling relationships, as they presumably change from proscribed to voluntary ones, could also provide new insights into how equity and exchange processes emerge in the course of development. As in other areas, an important step will be to directly measure the social and psychological processes that are thought to explain individual, group, and possibly, developmental differences in sibling relationships.

Social Learning Theories

From a social learning perspective, individuals acquire novel behaviors, including cognitive behaviors such as attitudes and beliefs, through two key social mechanisms, observation and reinforcement (Bandura, 1977). These social learning processes are probably the most common set of mechanisms used to explain youths' sibling relationships, including both relationship characteristics and sibling influences on one another's development. To the extent that there is continuity in sibling relationships across the lifespan, social learning processes in the family of origin may have implications for adult sibling relationships, but this theoretical perspective tends not to be applied directly in studies of adult siblings.

The tenets of observational learning suggest that family members will be salient agents in social learning given that individuals are most likely to imitate models who are warm and nurturant, high in status, and similar to themselves (Bandura, 1977). These tenets also imply that parents will be important sources of influence on sibling relationships, particularly when parents are warm and loving and when they are viewed as competent and powerful. That is, in the course of their everyday interactions with parents, children may acquire social behaviors that they use in the context of the sibling relationship, such as supportiveness, self-control, and caregiving and

teaching strategies, and they also may learn controlling and coercive behaviors and ineffective conflict resolution styles when those behaviors are modeled and reinforced within the parent–child relationship. Research documents that warm and involved parent–child relationships are linked to more positive sibling relationships in childhood (e.g., Blandon & Volling, 2008), and similar findings have emerged for adults (e.g., Voorpostel & Blieszner, 2008).

Parents also influence their children's sibling relationships when they help their children understand their siblings' feelings or scaffold conflict resolution skills in the context of sibling exchanges. In childhood such parental behaviors are associated with siblings using effective conflict resolution strategies like compromise and perspective-taking, to resolve sibling disputes (Kramer, Perozynski, & Chung, 1999; Perlman & Ross, 1997). Indeed, intervention programs designed to train parents to manage sibling relationships have found positive effects for reducing sibling conflict, promoting positivity, and improving conflict resolution skills. Siddiqui and Ross (2004) trained mothers to use a four-step mediation with their children to promote conflict resolution. At the 1-month follow-up, children in the experimental (mediation) group used more conflict resolution strategies that promoted social understanding. Longer term studies of these types of interventions need to be undertaken.

We know less about the role of parents' behavior in adolescent or adult sibling relationships, but parental interventions in sibling conflict may be ineffective after childhood (Felson & Russo, 1988). Indeed, adolescent sibling relationships actually may be more negative in the face of direct parental intervention, possibly because parents only continue to intervene in sibling relationships after childhood when those relationships are very poor (Kramer et al., 1999; McHale, Updegraff, Tucker, & Crouter, 2000).

Another line of study has examined how parents serve as models in the context of the marital relationship. The link between marital and sibling relationships is positive as evidenced by studies showing that negativity and violence in marital and sibling relationships are linked in childhood and adolescence (e.g., Brody et al., 1994; Dunn, Deater-Deckard, Pickering, & Golding, 1999; Yu & Gamble, 2008), and that these associations extend to sibling relationships in young adulthood (Milevsky, 2004; Panish & Stricker, 2001). Retrospective accounts of parents' marital conflict during childhood also have been linked to sibling conflict later in adulthood (Poortman & Voorpostel, 2009). In some of this research, relationships of siblings with divorced vs. nondivorced parents have been compared, and reveal that marital conflict and dissatisfaction account for more variance in sibling relationships than family structure per se (Panish & Stricker, 2001; Poortman & Voorpostel, 2009). In contrast, Jenkins (1992) found that in the context of intense marital conflict, some siblings actually grew *more intimate*, turning to one another for emotional support. In a longitudinal study linking sibling and both marriage and parent–child relationships, Kim et al. (2006) likewise found evidence of such a compensation process. These compensatory processes are inconsistent with predictions from social learning theory, and are rare in the sibling literature (see Voorpostel & Blieszner, 2008, for another example), but worthy of scrutiny in future research.

Some researchers have moved beyond patterns of bivariate associations between marriage and sibling relationships to learn more about the mechanisms linking them. For instance, parenting practices mediated the links between marital conflict and sibling relationship difficulties (Dunn et al., 1999; Stocker & Youngblade, 1999). Other work highlights reciprocal influences between marital and sibling relationships and effects of the sibling dyad on parents' marriage (Ross, Stein, Trabasso, Woody, & Ross, 2005; Stoneman, Brody, & Burke, 1989). Taken together, these findings support the idea that parents model relationship behaviors in the context of their marriage, but suggest that observational learning is not the only process underlying the links between marital and sibling relationships.

Social learning processes within the sibling relationship also may account for sibling relationship dynamics as well as for siblings' influences on one another's development. First, siblings

influence one another and their relationship in everyday social interactions. Sibling relationships can serve as a "training ground for aggression" when siblings are involved in coercive cycles and learn that escalating negative behavior is rewarded (Patterson, 1984). Siblings also mutually promote negative behavior through deviant talk, when they reinforce one another with positive regard and by imitation for stories and plans about risky and delinquent behaviors and activities (Bullock & Dishion, 2002). In adolescence, siblings also serve as gatekeepers to delinquent peers and risky activities (Rowe & Gulley, 1992; Windle, 2000).

More generally, in her early writings on sibling relationships, (Dunn, 1983; Dunn & Munn, 1986) argued that sibling exchanges provided powerful opportunities for the development of social competencies. Because siblings interact on a daily basis, because of their shared understanding of family norms and roles, and because of the emotional significance of their relationship, siblings display social abilities that they are not pressed to exhibit in other social contexts. The fact that most sibling dyads differ in age also may be a factor in siblings' unique influences (Howe & Recchia, 2005). And, a body of studies documents that siblings can learn social cognitive skills and prosocial behaviors in the context of their social exchanges, including conflict resolution, perspective-taking, emotional support provision, and emotion regulation (Brown, Donelan-McCall, & Dunn, 1996; Karos, Howe, & Aquan-Assee, 2007; Killoren, Thayer, & Updegraff, 2008; Kennedy & Kramer, 2008). Importantly, evidence from intervention studies reveals that siblings can be effectively taught to use a variety of prosocial skills (e.g., initiating play, resolving conflicts, regulating emotions) that enhance the overall quality of the sibling relationship (Kennedy & Kramer, 2008; Kramer, 2004).

Siblings also serve as models for individual development, a process that may contribute to findings of similarity between siblings in many different domains, including delinquency and aggression (e.g., Bank, Patterson, & Reid, 1996; Slomkowski, Rende, Conger, Simons, & Conger, 2001), substance use (e.g., McGue, Sharma, & Benson, 1995; Slomkowski, Rende, Novak, Lloyd-Richardson, & Niaura, 2005), sexual behavior (e.g., Rodgers & Rowe, 1988), and social competencies (Tucker, Updegraff, McHale, & Crouter, 1999; Whiteman, Bernard, & McHale, 2010). With a few exceptions (e.g., McGue et al., 1995; Slomkowski et al., 2005), findings on sibling influences must be viewed with caution when studies fail to include information about the larger family environment. For example, siblings share genes, parental models, and other environmental influences, and thus it is important to conceptualize and study sibling influences by taking into account other family characteristics and processes.

Sibling modeling processes may be moderated by the personal qualities of the siblings. For example, the social learning tenet regarding model similarity means that observational learning may vary as a function of the sibling dyad constellation, with older and same gender siblings more likely to serve as models than younger and opposite-sex siblings. Siblings close in age may be imitated due to their similarity, but a larger age gap between siblings also may invest an older sibling with power and high status and thereby promote modeling. Sibling relationship qualities also may make a difference, such that siblings with close relationships are more likely to treat one another as models. Consistent with these principles is stronger evidence of modeling by younger siblings and in sibling pairs that are same sex, close in age, and in warm relationships (Conger & Reuter, 1996; Feinberg & Hetherington, 2000; McGue et al., 1995; McHale, Bissell, & Kim, 2009). The same characteristics that promote sibling modeling may also account for sibling relationship qualities. For example, sister–sister dyads tend to be the most intimate, perhaps by virtue of their shared gender and gender role scripts and socialization that promote nurturance and kin-keeping orientations in girls and women (Eagly, 1987; Kim et al., 2006; Tucker et al., 1999). In adolescence, opposite-sex pairs become more intimate, possibly because the sibling gains status as a source of knowledge and information that becomes increasingly relevant as youths become more interested in the other sex (Kim et al., 2006). Social learning

principles, however, do not completely account for sibling similarities or relationship qualities. For instance, older siblings often model their younger siblings (Branje, van Lieshout, van Aken, & Haselager, 2004; Pike, Coldwell, & Dunn, 2005), and complex interactions that involve sibling gender, relationship qualities, and temperament have emerged in some studies (e.g., Munn & Dunn, 1989; Shanahan, Kim, McHale, & Crouter, 2007a).

Although there are some small sample and anecdotal reports, we know little about variations in the qualities of sibling relationships as a function of genetic relatedness. Using data from the National Longitudinal Study of Adolescent Health, however, one study found that monozygotic twins reported the closest relationships (Rende, Slomkowski, Lloyd-Richardson, & Niaura, 2005), and using the same data set, a second showed that sibling relationship quality mediated the link between siblings' degree of relatedness and their similarity in sexual risk behavior (McHale et al., 2009). In other words, their closer relationship explained why monozygotic twins were more similar in sexual risk than other kinds of sibling dyads. A smaller scale study showed that, although full and half siblings reported more positive relationships than stepsiblings, youths' relationship reports were generally positive (Ganong & Coleman, 1993). Given changes in family structure—divorce, remarriage, and use of fertility drugs that increase chances of multiple births, research that examines the role of structural characteristics in sibling dynamics is clearly warranted.

Taken together, social learning approaches target a multitude of processes through which family members and dyads influence sibling dynamics and each sibling's development. Importantly, social learning and other kinds of dynamics coexist in individuals' lives and should be studied in combination rather than in isolation. Further, the salience of different social learning mechanisms is likely to shift across developmental periods, highlighting the need for longitudinal work in this area and the paucity of research on sibling relationships in adulthood. Equally important to theory development are direct tests of these socialization processes through experimental manipulations such as intervention studies designed to modify sibling relationships or sibling influences.

Family and Ecological Systems Approaches

The tenets of family systems theory are derived from general systems theory (Bertalanffy, 1950). Within a systems framework, families are seen as hierarchically organized into interdependent, reciprocally influential subsystems that range from individuals, to dyads (e.g., sibling relationships, marital relationships, parent–child relationships) and higher order groups (e.g., parent–sibling triad), and are best understood when studied holistically. Importantly, each new level in the hierarchy is emergent and not reducible to its component parts. Thus a dyadic relationship cannot be reduced to the characteristics of individual relationship partners, triads are not reducible to the component dyadic relationships, and so forth. In this way, a systems approach requires a departure from that taken by much of the family relationship research literature, wherein a single dyad is isolated for study apart from the larger context of family dynamics. In addition to the systems ideas of reciprocal influence, family systems theorists have described the family as an open and dynamic system, subject to influence from the outside world and in a continual process of change. Below we apply these ideas in considering sibling relationships in a family context.

Family Systems are Comprised of Interconnected Subsystems

The idea that subsystems in the family are interrelated and thus mutually influential is documented in research on siblings. Probably the clearest example is research linking sibling relationship qualities and both the marital and parent–child subsystems (e.g., Dunn et al., 1999; Stocker & Youngblade, 1999). Consistent with family systems theory, these links appear to be reciprocal, in that sibling relationships impact other subsystems and vice versa (Kim et al., 2006; Yu & Gamble, 2008).

Also related to the idea of connections between family subsystems is the concept of subsystem boundaries advanced by family systems theories in an effort to distinguish healthful from dysfunctional families. Family systems theory holds that subsystems within families should have flexible boundaries that allow for, but are not determined by, influences of other subsystems, and that some boundaries, particularly intergenerational boundaries such as those between the marital and child subsystems, are more important to maintain than other boundaries, such as those between pairs of siblings. Coalitions in families refer to subsystems with overly rigid boundaries and are thought to be a sign of family dysfunction. Research on sibling relationships and sibling well-being supports this idea in showing that coalitions involving a parent's favoritism toward one sibling are linked to problematic sibling relationships, youth adjustment problems, and marital discord (McHale, Crouter, McGuire, & Updegraff, 1995; Kan, McHale, & Crouter, 2008; Volling, 1997).

Subsystems in families can have both direct and indirect influences on one another. Most research focuses on how siblings directly influence one another in their everyday social exchanges, but sibling influences also are indirect. One line of study shows how a child can influence parents' expectations, knowledge, and parenting behavior, with implications for siblings. For example, parents can learn from their experiences with earlier-born children (Whiteman & Buchanan, 2002). Comparisons of siblings' relationships with parents at the same chronological ages, for example, show that parents exhibit more effective parenting behaviors with secondborn than with firstborn adolescents (Shanahan, McHale, Osgood, & Crouter, 2007b; Whiteman, McHale, & Crouter, 2003). Intervention studies also document how the experiences of one child can cross over to affect siblings. For example, an intervention designed to promote parental support for firstborns' school success revealed benefits for later born children (Seitz & Apfel, 1994). A similar pattern was apparent in intervention studies with high-risk families, with parent-focused interventions extending beyond the target child to siblings (Brotman et al., 2005; Klein, Alexander, & Parsons, 1977). Not all of what parents learn from their experiences with one child has positive implications for other offspring, however. East (1998) argues that teenage childbearing by an older sister may increase the chances of a younger sister also becoming a mother in the teenage years because mothers come to believe that they are unable to control their daughters' sexual activities and give up on parenting efforts toward other daughters.

Siblings also may affect family life and ultimately, developmental outcomes of their siblings, by taxing parents' emotional resources and family material resources. For example, developmental and family research ranging from studies of handicapped and chronically ill children to studies of the transition to parenthood document how a sibling with special needs and dependencies may affect both parents' mental health and the quality of the marriage relationship (e.g., Demo & Cox, 2000; Dyson, 1991). Parents' well-being, in turn, has implications for their relationships with and the well-being and development of their other offspring. Research on becoming a sibling, for example, shows that firstborns react more adversely when their mothers report feeling tired and depressed after the sibling's birth (Dunn et al., 1981). Siblings also have implications for families' material resources. As East (1998) explains, teen parenting by an older sister may adversely affect the family's financial situation, with implications for a younger sister's probability of becoming a teen mother herself. Demographers have long been interested in the relations between sibship size and birth order and status attainment. Consistent with a "resource dilution" hypothesis, some studies show a link between larger family size and poorer academic achievement, lower occupational attainment, and less wealth (Downey, 1995; Keister, 2003). Importantly, in this line of study, the putative mediating processes linking childhood experiences and adult outcomes have rarely been assessed. Further, most of this research compares adults from different families as a function of family size or birth order rather examining within-family differences between siblings (e.g., Conley, 2000).

Siblings also influence the family system to the extent that the presence and characteristics of siblings provide new possibilities for family roles and relationships. A systems perspective directs attention to the emergence of new family subsystems that the presence of siblings entails. Novel family roles also are possible for both children and parents, as when older siblings take on caregiving activities or parents learn to play the mediator in sibling disputes. Family gender dynamics are also affected by siblings—specifically by whether individuals have sisters vs. brothers. When parents have both sons and daughters, those with traditional values have the opportunity to treat their daughters and sons in sex-typed ways (e.g., by spending more time with a same-sex child or assigning different chores to daughters vs. sons), and those with egalitarian values can compare their treatment to ensure that their sons and daughters are provided with similar resources and choices. The choice to engage in or refrain from sex-typed differential treatment of siblings, however, cannot be made in families with one child or with only same-sex children. More generally, siblings provide opportunities for social comparisons that have implications for children's adjustment (Feinberg et al., 2000). Less understood are parents' social comparisons vis-à-vis their offspring. Parental expectations and treatment of offspring may have more to do with how children compare to their siblings than how children behave or perform in an absolute sense. For instance, what counts as poor athletic or artistic ability in one family due to the presence of a very talented sibling may be evaluated quite differently in another family, and parents' evaluations of their children's *relative* talents may have implications for how they allocate family resources and guide their children's development. To date, however, such processes have not been a focus of study.

Families are Open Systems

Families have been described as open systems—subject to external influences, and also influencing the contexts within which they are embedded. We know little, however, about how forces outside the family influence sibling relationships. Ecological and life course models of individual development (e.g., Bronfenbrenner, 1979; Elder, 1996) can also be applied in studies of how contextual factors shape sibling relationships, but have not been systematically applied to their study. Bronfenbrenner's ecological model targets the multiple, embedded systems within which sibling relationships develop, ranging from the proximal contexts of everyday life such as the family, to more distal, macro-level forces such as cultural norms and values. A life course perspective directs attention to the individual's position in the larger social structure; it also emphasizes the significance of historical time and developmental timing in how experiences have implications for individuals and their connections to others. Thus for example, a sister's transition to parenthood will have different implications for the sibling relationship when it takes place in adolescence than in mid-adulthood, and those implications also will vary across culture and historical time.

There is a limited literature on how forces outside the family affect sibling relationships. Environments shared by both siblings, such as culture, socioeconomic status (SES), and neighborhood, are contexts within which sibling exchanges occur. When SES has been measured, most sibling researchers treat it as a control variable, and available findings are mixed: some studies show that lower SES is linked with more negative sibling relationships (Conger, Conger, & Elder, 1994; Dunn, Slomkowski, & Beardsall, 1994; Updegraff et al., 2005), whereas others find the opposite (McHale et al., 2007; Updegraff & Obeidallah, 1999). Neighborhood characteristics have not been systematically linked to sibling dynamics, though Updegraff and Obeidallah (1999) found that young adolescents living in neighborhoods with many common play areas (parks, playgrounds) were more likely to develop intimate relationships with their peers than with their siblings. Finally, a small, but growing body of work has examined how cultural forces shape sibling relationships. For example, familism values, prevalent in collectivistic cultures, are linked to intimacy in Mexican American sibling dyads and may mitigate the negative effects of parental

differential treatment (McHale et al., 2005; Updegraff et al., 2005). Research on African American siblings also suggests that discrimination experiences, ethnic identity, and relationships with extended kin are key sociocultural forces associated with sibling relationship quality (Brody, Stoneman, Smith, & Gibson, 1999; McHale et al., 2007). Cross-cultural research also emphasizes the caregiving responsibilities of older siblings and the hierarchical structure of sibling roles in non-Western societies, as well as cultural differences in dynamics such as rivalry and competition (Maynard, 2004; Nuckolls, 1993; Weisner, 1989).

Families are Dynamic Systems

A systems approach highlights the dynamic nature of family structure and process and directs attention to the ways in which families adapt in response to changes in internal and external needs and circumstances. Although dynamic, systems strive toward a balance between stability and change. In families, some processes promote stability—for instance family norms regarding sibling involvement and support, whereas others promote systems change—such as developmental changes in young adulthood including entry into full time work and family formation that limit sibling involvement. Family systems theorists argue that both rigid adherence and continual fluctuations characterize dysfunctional relationships, but to date, this idea has not been tested with siblings. A systems perspective also suggests that systems are more open and susceptible to change during transition periods. Empirical work supports this idea in that changes in sibling dynamics are observed around the transition to adolescence (Kim et al., 2006; Brody et al., 1994), parental divorce (Sheehan et al., 2004), and when the firstborn sibling moves out of the family home (Whiteman et al., 2011).

In sum, research on sibling relationships fits well within a family systems perspective. In the face of its conceptual appeal, however, family systems theory is rarely applied in sibling research, and much work remains. One challenge is that family systems processes are often difficult to operationalize. Including siblings in studies of families, however, can provide a window into systems dynamics by allowing researchers to move beyond a focus on individuals and dyads in the family. Importantly, a family systems perspective is limited in its theoretical propositions in the sense of defining specific mechanisms of influence. As such, bringing relationship dynamics proposed by analytic, social psychological and social learning theories to bear within a family systems framework will be a fruitful research direction.

Conclusions and Research Directions

As our review reveals, a range of theoretical perspectives can be applied to illuminate both the nature of sibling relationships—including individual, group and developmental differences—and sibling influence processes. Importantly, processes that affect sibling relationship dynamics operate at a variety of levels, ranging from intra-psychic processes such as attachment, to relational dynamics such as social learning, to distal influences such as sociocultural forces. And, although longitudinal research on sibling relationships is rare, our review underscores the necessity of a developmental perspective and suggests that different dynamics and influence processes may be apparent at different periods of the life course. Given that sibling relationships are the longest lasting relationship most individuals share, it is essential that future work examine them over longer periods of time. Longitudinal research on siblings offers family scholars a window into how family relationships develop and change as well as the opportunity to understand the multiple processes and contexts that influence lifelong bonds.

Another important direction will be to design studies that incorporate analyses of a broader range of influence processes in an effort to illuminate how insights from various perspectives complement one another. Research rooted in psychoanalytic traditions has been important in understanding how dynamics such as parents' differential treatment relate to sibling relationship qualities. Yet, a more complete understanding of these links is possible when other psychological and social processes such as

notions of equity and fairness, as proposed by social psychological theories, and sociocultural forces, as proposed by ecological and systemic perspectives, are taken into account.

Equally important to testing theoretical propositions regarding the nature and correlates of sibling relationship processes and influences are carefully designed experimental interventions (Kramer, 2004). Interventions focused on promoting positive sibling relationships or ameliorating negative dynamics are notably absent in the literature. The few exceptions document that sibling relationships can be improved through parent education (Siddiqui & Ross, 2004) or by teaching children social interaction skills (Kennedy & Kramer, 2008). Intervention research showing that nontargeted siblings benefit from interventions directed toward one at-risk child supports the systems notion of families as interconnected subsystems (Brotman et al., 2005; Klein et al., 1977). Identifying the processes through which interventions improve nontargeted siblings' relationships or adjustment is an important next step. In addition to providing insights on improving sibling relationships, intervention studies also allow testing of theories of sibling and family processes.

At a broader level, research that encompasses sibling dynamics and the perspectives of multiple siblings within a family moves the field beyond typical between-family comparisons to understand within-family differences and variability. Most developmental and family research assumes that studying one individual or dyad in a family is sufficient to understand family influences, but research on siblings reveals that two individuals from the same family are often as different as unrelated individuals (Conley, 2000; Dunn & Plomin, 1990). An important direction for research is to examine differentiation processes in families. In this way, the study of siblings can provide new insights into how families work. Recent advances in data analytic techniques have reduced some of the complexities typically associated with nonindependent data from siblings including in person-oriented techniques (e.g., Whiteman & Loken, 2006) and variable-oriented approaches such as multilevel modeling (e.g., Singer & Willett, 2003).

Our review directs attention to the embeddedness of siblings in a larger family system of relationships as well as within a larger sociocultural context (Maynard, 2004; Nuckolls, 1993; Weisner, 1989). Indeed, Weisner argues that what is most important to know about siblings is the "cultural place" in which they grow. From comparative work we can learn about similarities and differences across cultures in sibling relationships and roles. From ethnic-homogeneous studies we can learn how cultural values and practices shape sibling relationships and their influences (McHale et al., 2007; Updegraff et al., 2005). Greater attention to sibling relationships in minority families, through both ethnic-comparative and ethnic-homogeneous designs, is important given the rapidly changing demographics in the US and the increasing racial/ethnic diversity in families. The design of culturally appropriate interventions to promote sibling relationships also requires a foundation of knowledge on sibling relationships in a range of cultural contexts.

Taken together, our review reveals that the study of sibling relationships can inform the research literatures on individual development, close relationships, and family functioning. Siblings serve as social partners and sources of support across the lifespan. For students of close relationships, sibling relationships provide a model for the study of lifelong relationship development, and their unique properties may serve as a focus of comparison with other close relationships. Finally, sibling characteristics and dynamics help to shape larger family dynamics, and incorporating the perspectives and experiences of multiple siblings can provide new insights into how families operate as systems. Including the study of siblings and their relationships in the mainstream of family research is long overdue.

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