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Parent–Adolescent Collaboration: An Interpersonal Model for Understanding Optimal Interactions

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Current parent–adolescent behavioral interaction research highlights the importance of three elements of behavior in defining adaptive interactions: autonomy, control, and warmth vs. hostility. However, this research has largely addressed the developmental needs and psychosocial outcomes of adolescents, as opposed to parents, with a focus on how parent and adolescent behaviors influence adolescent adaptation. This paper utilizes both adolescent and mid-life developmental research, as well as parent–adolescent interaction research, to introduce a model for conceptualizing parent–adolescent interactions as a transactional process in which both parental and adolescent development are considered. Further, ideas are presented describing how adaptive parent–adolescent interactions may change across adolescence. The concept of collaboration is proposed as a conceptual tool for assessing one form of adaptive parent–adolescent interactions. The structural analysis of social behavior (SASB) is presented as a model for studying the complex reciprocal processes that occur in parent–adolescent interpersonal processes.

KEY WORDS: adolescent; parent; interactions; autonomy; control

Parent–adolescent relationships have long been deemed by researchers and clinicians as important for adolescent adaptation. The transition from childhood to adolescence often presents several challenges as adolescents rapidly develop physically (Falkner & Tanner, 1978), emotionally, (Steinberg and Silverberg, 1986), socially (Larson & Richards, 1991), and cognitively (Dovidio, Brown, Heltman, Ellyson, & Keating, 1988). Although most families are able to manage this developmental transition smoothly (Steinberg & Silk, 2002), the task of establishing a relationship in which the adolescent has greater equality with parents can be difficult and result in negative affect (Larson & Asmussen, 1991), more bickering (Montemayor, 1983), and less closeness and warmth in the relationship (Montemayor, 1986). Therefore, helping parents and adolescents understand how to achieve a warm and close relationship, while still developing an individuated sense of self, has been the goal of many parent–adolescent researchers.

Parent–adolescent interaction research has been successful in identifying individual adolescent and parental behaviors associated with the successful navigation of this developmental transition (Allen, Hauser, Bell, &O'Connor, 1994a, Allen, Hauser, Eickholt, Bell, O'Connor, 1994b; Barber, 1996; Conger, Neppi, Kim, & Scaramella, 2003; Florsheim, Tolan, & Gorman-Smith, 1996; Grotevant & Cooper, 1998; Hauser, et al., 1984; Larson & Asmussen, 1991). Specifically, interaction researchers have emphasized three overarching elements of behavior present in parent–adolescent interactions as important for successful adolescent development and adaptation. The constructs frequently discussed in the literature will organize the following review paper and include: (1) autonomy, (2) control, (3) and the extent of warmth or hostility associated with parent–adolescent interactions. The literature has shown

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consistently that adolescents and their parents who exhibit autonomous behaviors within the context of parental guidance (moderate control) and warmth demonstrate positive outcomes (Allen, et al., 1994b; Barber, 1996; Conger, et al., 2003).

Traditional parent–adolescent interaction research has focused largely on individual behaviors emitted separately by parents and adolescents and unidirectional patterns of influence (e.g., the effect parents and adolescents have on adolescent outcomes and behaviors). However, when exploring parent–adolescent interactions there are multiple directions of influence. Parent and adolescent interactions could affect one's own and the other person's outcomes. In addition, within an interaction there are complex ways that parent's and children's behaviors relate to one another and to parent and adolescent outcomes. Further, parent's and adolescent's outcomes (e.g., depression, ego-development) may subsequently influence ways in which parents and adolescents interact. Existing parent–adolescent interaction research typically focuses on two of these influences, specifically, the influence of parental and adolescent behaviors on adolescent outcomes. However, parent–adolescent interaction research acknowledges the likelihood of transactional processes in which adolescent and parental behaviors reciprocally influence one another (Allen, et al., 1994b; Florsheim, et al., 1996; Ge, Best, Conger, & Simons, 1995; Grossman, Brink, & Hauser, 1987; Hauser et al., 1984). This work would benefit from an interpersonal model that describes how adolescent and parental behaviors of autonomy, control, and interpersonal warmth relate to one another transactionally.

In this review we provide a framework that emphasizes the processes involved in transactional interactions between adolescents and their parents. This theoretical framework emphasizes transactional processes rather than individual behaviors by building on previous research on parent–adolescent coding systems that examine individual behaviors and their relations with adolescent outcomes. The framework makes predictions for how dimensions of behavior reciprocally and systematically relate to one another. Within this transactional approach, adolescent autonomous behavior would be conceptualized as occurring within a greater social process in which reciprocal parental affirmations of autonomy and adolescent expressions of autonomy would predictably relate to one another. Further, statistical analyses within this transactional approach will focus on the dependency of the parent and adolescent autonomy-related behaviors across time and the relation between this transactional autonomy process and the outcomes of both the parent and the adolescent.

This theoretical perspective is informed by a social contextual perspective that emphasizes understanding the social process as a whole and its relation to outcomes (Rogoff, 1990, 1998; Vygotsky, 1978). From this perspective, the basic unit of analysis should be the social unit, not an individual's behavior (although this can be the focus of attention for particular analyses or coding; Rogoff, 1990, 1998). Rogoff (1998) distinguishes the traditional approach to understanding parent–child interactions from the collaborative perspective by stating, "In traditional work the individual's contributions are in focus while those of the other people are blurred, but one cannot interpret what the individual is doing without understanding how it fits with ongoing events. It is not as if the individual could be taken outside of the activity to have their development analyzed." (Rogoff, 1998, p. 688) Within this perspective, collaboration is defined as brainstorming, negotiating, and working out a plan together (Berg, Meegan, & Deviney, 1998, 2005; Palmer, et al., 2004; Wiebe, et al., 2005). The framework of collaboration will be utilized as a model for what optimal parent–child interactions should be across adolescence and how to characterize the reciprocal process involved in interactions (Allen, et al., 1994a; Ge, et al., 1995; Rueter & Conger, 1995).

The current review will situate parent–adolescent interaction research within the framework of collaboration to describe interpersonally a more transactional view of optimal parent–adolescent interactions than has been forwarded in the past. In order to achieve these goals, first this review will briefly introduce a theoretical model that places specific emphasis on how adolescent and parental behaviors of autonomy, control, and warmth transactionally relate to one another. Second, developmental transitions of adolescents and their parents will be explored to show how parent–adolescent transactions may optimally change across adolescence. Third, a discussion of the major findings of traditional parent–adolescent interaction research and a description of how these results inform the process of defining optimal collaboration will be reviewed. Finally, clinical implications of the model as well as research implications for the transactional process of optimal collaboration will be briefly discussed.

STRUCTURAL ANALYSIS OF SOCIAL BEHAVIOR AND OPTIMAL PARENT–ADOLESCENT INTERACTIONS

The structural analysis of social behavior (SASB) (Benjamin, 1974; L. L. Humphrey and L. S. Benjamin, unpublished) is a dimensional, interpersonal circumplex-based model that provides a beneficial framework from which to define optimal parent–adolescent transactions (see Figure 1). The SASB model contains three fundamental aspects of interpersonal behaviors: (1) the *focus* (is the focus of the behavior on other or self or intrapsychic, this later surface is not interpersonal and will not be used in the present paper), (2) the level of *interdependence* (the vertical axis on both surfaces ranging from extreme autonomy giving or freeing, to extreme control when focused on other, to extreme autonomy taking via assertion, to extreme submission when focused on self), and (3) the level of *warmth vs. hostility* (ranging from extreme hostility to extreme warmth). If the behavior is self-focused, two dimensions are captured by the coder: (1) how autonomous or submissive the behavior is, and (2) how warm or hostile the behavior is. These dimensions, when combined together, place the behavior within a cluster of behaviors on the interpersonal circumplex. If the behavior is focused on another person, coders rate dimensionally: (1) how autonomy giving or controlling the behavior is, and (2) the amount of warmth or hostility present in the action, placing the behavior within a different cluster on the circumplex (see Figure 1). SASB contains the relevant behaviors forwarded in traditional parent–adolescent interaction research (i.e., autonomy, control, warmth) but places these behaviors on the orthogonal dimensions of autonomy/control/submission and warmth vs. hostility, rather than within several different dimensions or categorical ratings.

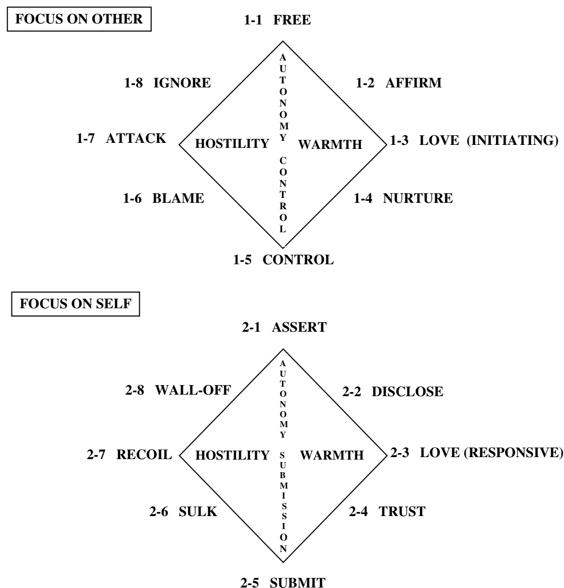

Fig. 1. The structural analysis of social behavior (SASB) adapted from Benjamin (2003).

Therefore, SASB also has further benefits including a focus on rating single dimensions of behaviors rather than dimensions or categories including many types of behaviors. This dimensional focus allows for researchers to disentangle often confounded behaviors such as hostility and control, or autonomy expression and autonomy affirmation, which are frequently included together in one dimension making it difficult to ascertain the unique influence of both on adjustment. This orthogonal approach to the underlying dimensions of interpersonal behavior allows researchers to understand both the unique contributions of these behaviors as well as capture mixtures of parent–adolescent behaviors through the interaction of these dimensions. Thus, orthogonal ratings may allow for easier integration and replication of findings than previous coding systems.

Consistent with the transactional process of collaboration described above, SASB predicts how parent–adolescent behaviors will systematically relate to one another. Specifically, Benjamin, (1974) posits that individual behaviors ‘‘complement’’ one another in a theoretically meaningful and predictable way. Complementarity occurs when one person is focused on the self and the other person is focused on the partner and when their behaviors match one another exactly in the degree of hostility and warmth present and interdependence (i.e., the degree to which autonomy is expressed matches the degree to which it is affirmed, or, the degree to which control is exercised matches the degree to which submission occurs.) For example, when an adolescent is focused on herself, exhibiting moderately high levels of autonomy characterized by warmth (e.g., she discloses, 2–2, by saying ‘‘I really feel like I should take geometry next year, Dad.’’) the principle of complementarity would predict that her father would focus on her, and exhibit moderately high affirmations of her autonomy characterized by warmth (affirming, 1–2, her by saying ‘‘I trust your judgment. That’s a good idea.’’).

Complementarity provides a valuable descriptive tool of how parent and adolescent behaviors relate to one another transactionally. Additionally, the principle of complementarity forwards a transactional perspective by stating that autonomous behaviors, for example, do not occur in a ''vacuum'' as individual acts. Rather, they are part of a greater transactional process in which both autonomy taking and autonomy granting reciprocally relate to one another in a predictable way. Similarly, controlling behaviors are predicted to systematically relate to submission, and interpersonally warm behaviors are more likely to occur within a context of friendliness rather than hostility. Although these predictions are only statements of probability, they provide valuable conceptualizations of how interpersonal interactions may operate and have survived harsh empirical tests (Benjamin, 1994). Although autonomy taking behaviors, for example, are likely to be complemented by autonomy affirming behaviors, these complementary processes do not always occur, and when they do not, these processes may be of particular interest in predicting outcomes (Hauser, et al., 1987). Therefore, rather than focusing primarily on individual acts, SASB provides a framework consistent with collaboration in which behaviors of autonomy, control, and warmth can be best understood as occurring within a transactional process that can be theoretically and systematically explored through specific and testable hypotheses.

DEVELOPMENTAL CHANGES IN PARENT–ADOLESCENT INTERACTIONS

This framework makes predictions regarding the types of transactions that will be associated with optimal adjustment for both parents and adolescents across development. Although current theory refutes adolescence as a time of ''storm and stress'' (Barber, 1996), several developmental transitions occur that may provide challenges in achieving adaptive parent–adolescent interpersonal processes (Steinberg & Silk, 2002). Perhaps the most important task of adolescence is developing a separate sense of self, an identity in which one's own beliefs, practices, and personal values are formed (Erikson, 1982). Adolescents often seek greater autonomy from their parents, a process that includes depending on parents less, no longer viewing them as omnipotent, becoming more dependent on peers, and having a greater sense of self-reliance (Barber, Olsen, & Shagle, 1994; Greenberger, Josselson, Knerr , & Knerr, et al., 1974; Steinberg & Silverberg, 1986).

Steinberg and Silk (2002) describe this transition as a process by which a balance between the adolescent's desires for autonomy and parents' desires to maintain control over their teen's decisions and activities must be negotiated. Interpersonal difficulties may arise between parents and adolescents as they work together toward achieving a connected, yet separate relationship (Grotevant & Cooper, 1998). For instance, parents may be unaccustomed to adolescents' increased propensity to assert themselves, criticize parental ideas, and rely less on them for advice and support while spending more time with their friends (Larson & Richards, 1991; Youniss & Smollar, 1985). On the one hand, if parents do not grant autonomy, conflicts over family rules are likely (Steinberg & Silk, 2002), and healthy individuation is unlikely to occur (Grotevant & Cooper, 1998). On the other hand, if adolescents are not open and responsive to parental guidance, connectedness will be threatened.

Further, cognitive changes in an adolescent's thinking to become more advanced, abstract, relativistic, and hypothetical (Dovidio et al., 1988; Hauser, Powers, & Noam, 1991; Steinberg & Silk, 2002) may bring about a desire to be included in family decision making, planning, and negotiating (Steinberg & Silk, 2002). Transitioning into a relationship that encourages the adolescents' contributions in decision making, while still maintaining a guiding influence translates into a difficult ''dance'' for parents. Further, skill is required in negotiating adolescents' propensity to challenge what they often perceive as their parent's relativistic belief systems (Collins, 1990; Smetana, 1988; Smetana & Asquith, 1994). Smetana's work (1988) suggests the importance of parents and their adolescents being able to have open dialogue and respect for one another's differing perceptions regarding what issues are matters of personal choice. Rejection of either the adolescents' or parent's perspective will likely lead to psychological difficulties for both (Smetana, Daddis, & Chuang, 2003; Steinberg, 1990, 2001), and should be considered when defining healthy interpersonal processes. These changes mean that exchanges of parent granting autonomy and adolescent taking autonomy may become more important across the adolescent transition.

Changes also occur in the parent–child interactions that are important for understanding the hostility vs. warmth dimension of behavior. Rapid physical

changes associated with puberty are constant visible reminders to parents and adolescents that they are entering a new phase of development in which relationship changes will occur (Steinberg & Silk, 2002). Upon developing physically, adolescents may believe that they are in less need of their parents' direction and may react to parental suggestions negatively (Steinberg, 2001). In addition, puberty has also been associated with high levels of negative mood in adolescents (Larson & Asmussen, 1991), which may have a deleterious impact on parent–adolescent interactions. In a reciprocal fashion, negative mood in adolescents may relate to hostile parenting, and pose difficulties in achieving optimal interpersonal processes (Kim, Conger, Lorenz, & Elder, 2001). Parents may respond to their adolescents by suggesting how to remedy their negative emotions, or perhaps become blaming and controlling. Such parental suggestions would likely be perceived by adolescents as intrusive (Holmbeck, Paikoff, & Brooks-Gunn, 1995) and facilitate parent–adolescent conflict. Therefore, these increases in negative mood across adolescence may challenge parents to respond via warm interactions.

Important developmental transitions in parents of adolescents that occur during mid-life are relevant for understanding adaptive parent–adolescent interactions. Researchers have shown that mid-life may be characterized by several difficulties including low marital satisfaction and risk for divorce (Gottman & Notarius, 2000), as well as decreases in psychological health and increases in bickering associated with parenting an adolescent (Steinberg & Steinberg, 1994). Steinberg and Silk (2002) suggest that one reason parents of adolescents may struggle emotionally during mid-life involves the intersection of mid-life developmental issues with adolescent developmental concerns. Parents may begin feeling unimportant in their adolescent's life as their child begins to rely more on their peers (Steinberg & Silverberg, 1986), and spend less time in the physical presence of their parents (Larson & Richards, 1991). The parental distress felt during mid-life is important as parents utilize less effective parenting techniques when they are emotionally challenged (Gondoli & Silverberg, 1997; Paley, Conger, & Harold, 2000). This distress may compromise parents' ability to express high levels of warmth, a component of optimal parent–child interactions. Further, at a time when adolescents are exerting their autonomy, parents may also need to exert their autonomy into their adolescents' lives, as their influence is waning. Thus, mid-life developmental research suggests that parents of adolescents would likely benefit from interactions in which they are able to express their own views, have these views respected by their adolescent, and do so in a warm environment in which hostile bickering does not have an impact on their emotional health.

These changes in the parent–adolescent relationship across adolescence suggest that parents and children must find a new way of relating that achieves a different sort of balance in the dimensions of interpersonal process (especially the balance in autonomy and control). Collaboration will be used as a metaphor for optimal parent–adolescent interactions across adolescence (Rogoff, 1998). Collaboration denotes a way of relating that involves the active engagement of interactants that emphasizes equal engagement. Collaboration interpersonally will be promoted when it occurs with the appropriate expressions and affirmations of autonomy, mutual engagement and the ability to provide guidance and ideas for decision making within a warm context. Throughout our review of the literature, we will see that this notion of collaboration is consistent with optimal interpersonal processes found in the parent–adolescent interaction literature. This integration of the key dimensions of parent–adolescent interaction within the interaction literature with the conceptual framework of collaboration as a reciprocal and transactional process has the potential to provide a framework that incorporates the development of the adolescent and the parent, rather than focusing on the adolescent alone.

REVIEW OF OBSERVATIONAL CODING OF PARENT–ADOLESCENT INTERACTIONS

During the past two decades, researchers have utilized developmental theory to inform observational coding schemes that define behavioral dimensions of optimal parent–adolescent interpersonal processes (Allen, et al., 1994a, b, 2002b, 2003; Conger, et al., 2003; Grossman, et al., 1987; Hauser, et al., 1984, 1991; Montemayor, 1983; Patterson, 1982; Reid & Patterson, 1989; Rueter and Conger, 1995). This review will illustrate that the existing literature largely focuses on unidirectional sets of influences on adolescent outcomes such as depression, anxiety, ego development (e.g., parent interaction affecting child outcomes, child interactions affecting child outcomes), with more recent research taking a transactional perspective (Allen, et al., 2003; Rueter & Conger, 1995). We will argue that optimal interpersonal behavioral interactions

can be characterized by the construct of collaboration, a larger transactional process that involves dimensions of behavior that are healthy for both adolescents and their parents.

The benefit of the SASB framework is that it integrates and consolidates the observational research findings that examine similar dimensions to those captured by SASB (*autonomy/control/submission and warmth vs. hostility*) into a transactional framework. Specifically, much of the existing literature is based on coding systems that include dimensions that combine different elements of behavior into one code, such as warmth and autonomy (c.f. Allen, et al., 1994; Kim, et al., 2001; Rueter and Conger, 1995), making it difficult to ascertain the unique influence of the two behaviors on outcomes. SASB provides the opportunity to combine dimensions (e.g., warmth and autonomy) or analyze them separately for their relationships to outcomes. Additionally, the existing literature is based upon several different dimensional systems that have some overlap, (but not complete), across their dimensions, making it difficult to integrate findings across laboratories. The SASB framework synthesizes the dimensions captured by many systems into one model and organizes the relevant behaviors on the interpersonal circumplex.

Additionally, although some work posits transactional parent–adolescent processes (Allen, et al., 2003; Hauser, et al., 1987; Reuter & Conger, 1995), few have provided microanalytic coding data along with a model that predicts specifically how several types of behavior will relate to one another across time. Many studies include data obtained from macro-level ratings that summarize the behavior of adolescents and their parents over the course of an entire interaction (c.f. Reuter & Conger, 1995; Melby & Conger, 1996; Paley, et al., 2000). These macro-level systems have provided evidence that interpersonal warmth, autonomy, and proper parental control predict adolescent outcomes.

However, these studies do not provide the type of temporal and microanalytic data that allow for tests of hypothesized transactional moment-to-moment processes. Furthermore, temporal sequences of behaviors that are important for informing treatment plans in clinical interventions (e.g., the adolescent does not take autonomy when it is given to them by their parent) are not captured within macro-level systems (Hauser, et al., 1987). Such molar ratings implicitly take into account how adolescents' behaviors influence parents by virtue of the dependency between adolescent–parent interactions (e.g., coding parents as affirming autonomy likely means that adolescents are asserting autonomy). However, some data suggests that the combination of individual codes (e.g., when autonomy is granted by one person but not taken by the other) is a more important predictor of outcomes than individual codes alone (Gottman, 1994; Hauser, et al., 1987). Therefore, while complementarity in SASB provides valuable predictive principles regarding how individual behaviors should relate to one another in healthy interactions (e.g., autonomy taking and affirming behaviors, control and submission), these processes do not always occur, and when they do not, negative adaptation may be more likely (Hauser, et al., 1987). These transactional questions are better addressed through microanalytic coding systems coding utterances in time and analyzed via statistical analyses such as time series, dynamical systems, or sequential analyses, all of which can address transactional temporal processes. SASB further provides a model for specific and testable hypotheses regarding how the relevant dimensions of behavior will relate to one another through complementary positions on the interpersonal circumplex (see Figure 1 and discussion of complementarity above).

The following section of the paper will review how the existing categories of behaviors often discussed within the literature (autonomy, control, warmth) associate with adolescent outcomes, as well as present hypotheses regarding why these dimensions may be important for parental outcomes. We will also link the established behaviors of interest in parent–adolescent interaction research (autonomy, control, warmth) to the dimensions of interpersonal process examined in the SASB model (the interpersonal focus of the behavior, autonomy/control/submission, and warmth vs. hostility). This section of the paper will accomplish these objectives by (1) outlining how autonomy, control, and warmth vs. hostility have been defined and measured in the existing literature for adolescents and parents and how these constructs link to SASB dimensions, (2) associating the dimensions with adolescent and, (3) parental outcomes, and finally, (4) illustrating a more transactional approach offered by coding with the SASB system and including parental outcomes.

AUTONOMY

Measuring and Defining Autonomy Processes in Parent–Adolescent Interactions

Research on autonomy processes in parent–adolescent interactions examines the extent to which adolescents and their parents can successfully demonstrate appropriate independence while also remaining connected in the relationship. Healthy autonomous behaviors have been coded in terms of expressing one's own autonomy as well as affirming the other person's autonomy. For example, in the autonomy and relatedness coding system (Allen, et al., 1994b, pp. 539–540) often used in this literature, researchers explore ''autonomous-relatedness'' which includes ''codes for expressing and discussing reasons behind disagreements, confidence in stating one's positions, validation, and agreement with another's position, and attending to the other person's statements.'' Similarly, additional work has focused on capturing whether adolescents can assert their own ideas and express disagreements with their parents, while still affirming and respecting their parent's views (Grotevant & Cooper, 1985). Similar constructs of autonomy are captured in Hauser, et al.'s (1984, 1987, 1991) ''Constraining and Enabling Coding System'' that explores behaviors that enable autonomy (e.g., idea expression, acceptance, empathy, focusing, problem-solving engagement, curiosity, and explaining) during parent–adolescent disagreement interactions. Additional coding of appropriate autonomy processes include whether parents and adolescents actively encourage opinions, express their own self-desires, explain reasons behind decisions, show independence of thought, and accept and validate the other person's ideas throughout (Allen, et al., 1994a, b, 1996, 2002b, 2003; Florsheim, et al., 1996; Florsheim, Tolan, & Gorman-Smith, 1998; Grossman, et al., 1987; Hauser, et al., 1984, 1991; Minuchin, 1974).

In addition to appropriate expressions and affirmations of autonomy, researchers have also identified processes that undermine healthy autonomy in parent–adolescent interactions. Specifically, these behaviors include excessively gratifying or submitting to the other person, withholding opinions or withdrawing from the conversation, distracting the other person from the topic at hand, over-personalizing arguments, pressuring for conformity without explanation, or making rude and sarcastic remarks (Allen, et al., 1994a, 2002; Hauser, et al., 1984). Many of these behaviors overlap heavily with conceptualizations of psychological control (Barber, 1996) and enmeshment (Mincuhin, 1974) and are thought to impede healthy autonomy development.

The SASB system provides an effective framework to synthesize, organize, and measure the varied autonomy processes described in the literature by utilizing the interpersonal circumplex. Specifically, the autonomy behaviors described in the literature as optimal coincide well with the SASB models, but reflect behaviors on separate surfaces that focus on either one's ability to express appropriate levels of self-autonomy (behavior that is self-focused, and moderately high in autonomy taking, and warmth, 2–2), or on one's ability to affirm and encourage appropriate autonomy in the other person (behavior that is other focused, moderately high in autonomy affirming, and warmth, 1–2). The SASB system provides some order on the diverse coding methods by seeing some aspects of autonomy on a single dimension. For instance, rather than viewing autonomy expression or undermining one's own autonomy by being overly submissive or recanting one's own position as different dimensions of behavior, these behaviors vary on a single dimension (on the self-focus surface, the vertical dimension of Figure 1). Similarly, facilitating another person's autonomy vs. undermining the other's autonomy would also be seen as varying on a single dimension (on the other-focus surface, the vertical dimension of Figure 1). Therefore, SASB has the ability to explore the effects of both types of autonomy processes separately (i.e., expressing and affirming autonomy) on adaptation.

As discussed above, while the SASB defines optimal autonomy processes as warm and moderate in autonomy affirming (1–2) and expressing (2–2), it also provides within the same dimension of behavior definitions of maladaptive autonomy processes. Within the SASB model behaviors that devalue, judge, distract, pressure, or rudely over-personalize arguments are characterized as other focused, controlling, and either neutral (1–5 on Figure 1) or hostile (1–6 on Figure 1) in nature. These types of behaviors are reflected in the SASB on the same dimension of behavior as autonomy granting, but are represented at the bottom of the vertical axis which represents control, a behavior that will be fully discussed later in the review (see Control section). When parents or adolescents withdraw from the conversation or show indifference, these behaviors are characterized within the SASB model as focused on other,

as extreme in autonomy giving to the point of ignoring, and are neutral (1–1 on Figure 1) or hostile in nature (1–8 on Figure 1). Furthermore, when parents or adolescents do not express their own opinions or autonomy, and instead excessively go along with their adolescent or take back their own position without good reason, these behaviors are characterized within SASB as focused on the self, extremely submissive, and either neutral (2–5 on Figure 1) or hostile (2–6 on Figure 1) in nature.

Autonomy and Adolescent Outcomes

Researchers have repeatedly found strong positive associations between healthy autonomous behaviors exhibited by adolescents, as coded in parent–adolescent interactions, and adaptive adolescent outcomes (Allen, et al., 1994a, b; Grossman, et al., 1987; Grotevant & Cooper, 1998). For example, when adolescents display healthy autonomy by engaging in problem solving, confidently stating their own ideas, and yet still affirming their parent's autonomy, high levels of ego development, self-esteem, attachment security, and successful identity exploration are more likely (Allen, et al., 1994a, 2003; Hauser, et al., 1984; Grotevant & Cooper, 1985). Therefore, healthy adolescent autonomy behaviors are defined interpersonally by two, somewhat distinct, constructs: the ability to express independent opinions and ideas, and the ability to maintain a positive relationship with parents through affirmation, and support of parental viewpoints.

An adolescent's over-assertion of autonomy, without respect for maintaining the parent–child relationship, will likely result in disrupted and conflictual interpersonal processes. This type of autonomous behavior is represented in SASB as self-focused, extremely autonomous, and lacking in warmth (2–1 in Figure 1). However, excessive affirmation and submission to parental ideas, while perhaps relationship maintaining, may result in an enmeshed relationship in which successful individuation does not occur (Minuchin, 1974). Enmeshed relationships may become more detrimental as adolescents age and have a greater need to establish independence. Future research should explore the potential moderating influence of age on autonomy processes and adaptation, as the ability to assert autonomy may increase in importance across adolescence.

In addition to adolescent behaviors that appropriately express and affirm autonomy, specific parental behaviors also relate to adolescent outcomes. Although the literature typically examines the relations between parental autonomy behaviors and adolescent outcomes separately from the relations between adolescent autonomy behaviors and their outcomes, clearly these are dependent on each other. That is, an adolescent is less likely to exhibit autonomous behaviors if their parents are constraining them (Florsheim, et al., 1996; Hauser, et al., 1984). Parents who ask for their adolescent's opinions, and affirm their ideas have children who are comfortable in asserting their autonomy (Florsheim, et al., 1996), exhibiting a more transactional approach (Steinberg and Silk, 2002). In addition, parental behaviors exhibiting independence of thought, self-expression, and assertiveness, paired with interest and validation of adolescent opinions, have been linked to lower levels of adolescent internalizing and externalizing difficulties (Allen, et al., 1994a), higher levels of adolescent ego development and self-esteem (Allen,et al., 1994b), and a lower association with prior psychiatric hospitalizations (Hauser, et al., 1987). From this research it is clear that in addition to adolescent behaviors that appropriately exhibit autonomy, parental behaviors that similarly assert and affirm independence are also beneficial.

Parents may encourage healthy autonomy processes via a direct route and an indirect route. For instance, parental behaviors that specifically encourage expressions of autonomy, such as asking for the adolescent's opinion, affirming their ideas, and involving the adolescent in decision making (Lamborn, Dornbusch, & Steinberg, 1996), may relate transactionally to adolescent self-exploration and assertion. When parents actively involve their adolescents in this manner, it likely conveys the message that they are competent, and able to positively contribute to the discussion at hand (Holmbeck, et al., 1995). Alternatively, parental self-expression, and independence of thought during problem-solving discussions likely models appropriate self-exploration, self-assertion, and independence (Hauser, et al., 1987). Consistent with a social learning perspective (Bandura, 1977), adolescents may model their parent's autonomous behaviors and in so doing develop healthy independence. In summary, the presence of parental behaviors that either directly or indirectly elicit or model adolescent autonomy are important predictors of positive adolescent adaptation and should be present in healthy parent–adolescent communication patterns.

Researchers have shown that adolescents are more likely to experience internalizing or externalizing

symptoms depending upon whether adolescents undermine their own or their parent's autonomy (Allen, et al., 1994b). On the one hand, the active undermining of adolescents' own autonomous expressions (e.g., excessive submission to parents, recanting one's position without having been persuaded one's position is wrong) has been found to be uniquely related to internalizing problems such as depression, low self-esteem, and anxiety (Allen, et al., 1994b; Isberg, et al., 1989), and is likely related to the failure to create an independent identity (Erikson, 1968). On the other hand, adolescents who undermine their relationship with their parents through making rude or sarcastic comments that devalue parental viewpoints may be particularly vulnerable to externalizing, or behavioral difficulties (Allen, et al., 1994b; Steinberg, 1990). When adolescents undermine the relational connection they have with their parents, this may be associated with contexts in which there is little desire to please their parents by following rules, resulting in behavioral difficulties (Allen, et al., 1994b). However, just as healthy autonomy expressions are likely facilitated and reciprocated by certain parental behaviors, unhealthy adolescent autonomy processes are also likely related to specific parental behaviors.

Parental behaviors that actively threaten healthy autonomy are also important to consider when studying the adaptability of parent–adolescent interactions. Specifically, when parents rudely or sarcastically devalue, judge, or criticize their adolescent's contributions, or pressure for conformity without reason, adolescents have higher rates of internalizing and externalizing disorders, psychiatric hospitalizations, and lower levels of ego development than when these behaviors are not present (Allen, et al., 1994a, b, 2003; Florsheim, et al., 1996; Hauser, et al., 1984, 1987, 1991). In addition, parents also undermine healthy interactions when they do not exhibit their own autonomy or ignore the autonomous contributions of their adolescent. That is, parents can undermine healthy autonomous processes by showing indifference, withdrawing from the conversation with their adolescent, being excessively gratifying to their adolescents' position, or recanting their own position without good reason (Allen, et al., 1994a, b; Grossman, et al., 1987; Hauser, et al., 1984). These types of parental behaviors may undermine healthy autonomy as they do not model appropriate expression of independent thought, and may convey a message of indifference to the adolescent regarding the adolescents' autonomous contributions.

Therefore, parents' interference with autonomous development presents adolescents with the difficult charge of meeting the developmental task of identity exploration within a familial context that may directly and indirectly limit their ability to do so. From a more transactional perspective, Hauser, et al. (1984) found that adolescents respond to their parents devaluing of their contributions by limiting their expression of ideas, and withdrawing from the conversation. Withdrawal impedes the adolescent's ability to explore an identity, develop self-esteem, and achieve normal developmental tasks such as developing healthy peer relationships (Allen, et al., 1994b, 2002; Grotevant and Cooper, 1985). Adolescent withdrawal associated with parental undermining of autonomy, has also been linked to adolescent psychiatric hospitalizations (Hauser, et al., 1987), eating disorders (Maharaj, Rodin, Connolly, Olmstead, & Daneman, 2001), and depression (Sheeber & Sorenson, 1998). Allen, et al.,(1994a) have suggested that adolescent withdrawal may be a maladaptive process that adolescents engage in to assert autonomy and meet developmental needs when their parents actively discourage autonomous behaviors. Parental behaviors that constrain autonomous functioning create a level of developmental frustration associated with a hostile desire on the adolescent's part to "blast out" of the relationship (Allen, et al., 2002). Parent–adolescent connectedness may then become threatened, and externalizing behavior problems may be more likely to occur (Allen, et al., 1994a). Although parents of adolescents are likely overwhelmed at times by their adolescent's increasing self-reliance, peer-affiliation, and parental de-idealization (Larson & Richards, 1991; Steinberg & Silverberg, 1986), the urge to constrain the autonomous behaviors of adolescents in an intrusive manner (Holmbeck, et al., 2002) should be resisted in order for optimal collaboration to occur.

Premature Autonomy

Although parent and adolescent behaviors that undermine or inhibit appropriate autonomy are associated with detrimental outcomes, recent research has also shown that the premature granting of autonomy to the adolescent is also problematic (Dishion, Poulin, & Medici Skaggs,2000). Specifically, premature autonomy refers to a process by which parents of adolescents gradually disengage from monitoring their adolescent while the adolescent becomes increasingly involved with deviant peer

group relationships and exhibits conduct problems (Dishion, Nelson, & Bullock, et al., 2004). The granting of premature autonomy is often not an explicit or conscious decision by parents, but rather, is conceptualized as an insidious bidirectional process where parents' disengagement reciprocally relates to problematic adolescent behaviors and peer relationships (Dishion, et al., 2004). In essence, the adolescent becomes too autonomous too early. This research suggests that autonomy granted to adolescents should be moderate (rather than characterized by extreme disengagement), and should occur in combination with appropriate parental guidance, especially within the context of the adolescent developing problematic peer relationships. Therefore, although increasing autonomy and independence is an important part of adolescent development, the amount and timing of autonomy granted to the adolescent is an important factor in determining optimal collaborative processes in parent–adolescent interactions.

Premature autonomy granting, would be represented on SASB as behaviors that focus on the other person, are extremely high in autonomy granting and are either neutral or hostile in nature (1–1, or 1–8 behaviors on Figure 1). For example, a parent may not ask where their adolescent is going or what time they are coming home, which represents an extreme form of autonomy granting behavior lacking guidance and control. The adolescent is prematurely granted the ability to make her own decisions without parental input or involvement.

Within the SASB model, appropriate autonomy granting would be characterized by behaviors that focus on the other person, are moderately high in autonomy granting, and interpersonally warm (1–2 on Figure 1), as well as occurring in combination with parental guidance and nurturing (represented on the SASB model as behavior focused on the other person, moderate in control, and interpersonally warm 1–4 on Figure 1). For example, a parent may ask their adolescent where they would like to go out with their friends and what time they would like to come home (1–2 on Figure 1). Following the adolescent's response, the parent may appropriately provide guidance and limits if needed by negotiating a reasonable compromise to the adolescent's desires (1–4 on Figure 1). This type of autonomy granting combined with parental guidance allows for the development of autonomy while avoiding the detrimental impact of prematurely allowing the adolescent to function completely independently.

Autonomy and Parental Outcomes

Although a great deal of research has documented the influence of autonomous processes on adolescent outcomes, little, if any, research has considered the relations among autonomy processes and parental outcomes, an idea consistent with a transactional model of parent–adolescent processes. Therefore, hypotheses regarding the benefits of autonomous behaviors for parental outcomes are speculative. Mid-life developmental work suggests that the expression of autonomy by parents during parent–adolescent interactions may be beneficial for parental outcomes as well as adolescent outcomes (Gottman, 1994; Steinberg & Silverberg; 1986). Parents of adolescents feel particularly challenged by their adolescents' increasing emotional, behavioral, and cognitive independence (Keating, 2004; Steinberg & Silk, 2002; Steinberg & Silverberg, 1986). Adolescents' newfound independence, and/or greater reliance on peers (Larson & Richards, 1991; Steinberg & Silverberg, 1986) may be associated with parents feeling distant from their adolescents, which likely relates to a need to express their own opinions, and thoughts in an attempt to remain influential and connected with their adolescents.

Autonomous behaviors may provide parents with a sense of parenting efficacy and relationship satisfaction, as they are able to remain connected and influential by disclosing their own feelings and thoughts to their adolescents. Parents who are unable to display autonomy, such as submissive deference to their adolescent, and/or not speaking their thoughts, may feel helpless and even more disconnected than is normal during this transition. This may be particularly detrimental in the case of same gender dyads (i.e., mother–daughter, father–son) as it has been shown that same-gender parent–adolescent dyads may have a greater impact on one another than different-gender dyads (Steinberg & Silk, 2002).

In addition to mid-life developmental research, marital interaction literature also suggests indirectly that the expression of autonomy may be important to healthy interactions for both adolescents and parents (Gottman, 1994; Gottman & Notarius, 2000). Non-regulated couples tend to withdraw from interactions rather than express autonomy, and express less positive emotions of interest, caring, joy, and enthusiasm, all

behaviors that would be considered in the adolescent literature as inhibiting, or constraining autonomy (Allen, et al., 1994a; Gottman, 1994; Hauser, et al., 1987). Furthermore, non-regulated couples are characterized by a great deal of defensiveness (Gottman, 1994), which may relate to over-personalizing arguments, a behavior that inhibits self-disclosure and independence of thought (Hauser, et al., 1984). Although marital interaction research is different in the relationship examined, it suggests that autonomy expression may not only be important for adolescent adjustment, but is likely beneficial for parental adjustment as well. Drawing from this literature, it is possible that adolescent devaluing or judging of parental contributions may specifically affect parental adjustment, as parents at this stage are already sensitive to their adolescent's increasingly less idealized view of them (Steinberg & Silverberg, 1986; Steinberg & Silk, 2002). Furthermore, parents may benefit emotionally from their adolescent's own assertions of independence as this may be a sign to parents that their adolescent is developing healthy independence and responsibility.

Autonomy Sequences and Reciprocity: Illustrations of a Transactional Approach

Explicitly considering the transactional context in which autonomy-related behaviors take place and the reciprocal influences that occur in parent–adolescent interactions will likely lead to a better understanding of adaptive interactions. For instance, Hauser, et al. (1987) demonstrated that sequences in which adolescents fail to respond to parent's autonomy granting behavior with an autonomous action better predicted adolescent adjustment than measuring simple frequencies of autonomous behaviors. Furthermore, when adolescent expressions of autonomy are followed by warmth and support, adolescents tend to reciprocate this warmth by openly expanding upon their ideas and stating them more clearly (Hauser, et al., 1984).

Although not analyzed sequentially, the fact that autonomy granting behaviors are highly related to autonomy taking behaviors suggests that when parents and adolescents either grant or assert autonomy, an individuated response from the other is more likely to occur (Florsheim, et al., 1996, 1998; Humphrey, 1989). In addition, Hauser, et al. (1984, 1987) found that "constraining" and "enabling" autonomy behaviors of parents and adolescents are also highly correlated, indicating that these behaviors may often relate to each other in a reciprocal fashion. Therefore, a transactional process in which constraining behaviors relate to constraining responses, and enabling behaviors associate with reciprocal enabling responses, may be operating in parent–adolescent interactions. The SASB framework helps to describe how these reciprocal processes take place, and provides predictions regarding specific behaviors that may facilitate or hinder subsequent healthy responses. Specifically, through the principle of complementarity described earlier, the SASB system makes predictions regarding how certain expressions and affirmations of autonomy may relate to one another in moment-to-moment exchanges.

Summary of Healthy Autonomy Processes

Optimal parent–adolescent interactions are characterized by healthy autonomy expressions and affirmations exhibited by both adolescents and their parents. Behaviors that exhibit and affirm moderate autonomy such as expressing independent ideas, asserting one's own opinions and feelings, asking for the other's opinions and being empathetic and receptive to differing viewpoints, constitute healthy autonomy processes and are represented on the SASB models as 1–2 and 2–2 behaviors. These behaviors provide a context in which adolescents and their parents are able to develop and maintain healthy, independent identities, while remaining close and connected within their relationship. In addition, these autonomy processes avoid the detrimental impact of extreme autonomy granting that prematurely gives adolescents too much independence, too early in their development. Healthy expressions and affirmations of autonomy are likely reciprocally and sequentially related to one another. The SASB model provides a transactional framework that establishes some order to the various coding systems which have placed expressions and affirmations of autonomy in different dimensions, by characterizing these behaviors on the same dimension, but with different interpersonal foci (self vs. other).

CONTROL

Measuring and Defining Control Processes in Parent–Adolescent Interactions

Although control is an important dimension in circumplex models of interpersonal behavior (Benjamin, 1974; Kiesler, 1996) and the marital interaction

literature (Brown, Smith , & Benjamin, 1998), it is infrequently used explicitly as a behavioral code in the parent–adolescent literature (Barber, 1996; Barber, et al., 1994). Control has also been identified as a key dimension of parenting in the self-report and parenting typologies literature (Baumrind, 1991; Maccoby & Martin, 1983; Rollins & Thomas, 1979; Steinberg, 1990). However, in observational coding, control has been only implicitly coded within dimensions that include additional elements of behavior (for exceptions see Barber, 1996; Florsheim, et al., 1996, 1998; Humphrey, 1987). The indirect observation of control makes it somewhat difficult to ascertain the unique effect of controlling behaviors on adaptation (Barber, 1996). However, when possible, the following section will integrate work that explicitly observes and codes controlling behaviors (Barber, 1996; Florsheim, et al., 1996, 1998; Humphrey, 1987; Kenny-Benson & Pomerantz, 2005) with research that places actions reflecting control in more general dimensions of behavior (Allen, et al., 1994a; Hauser, et al., 1984; Patterson & Stouthamer-Loeber, 1984).

The research reviewed focuses on the amount of control exerted by the parent toward the adolescent and how this control affects adolescent outcomes. The SASB approach explicitly codes the amount of control present (exerted by both adolescent and parent), and the warmth or hostility associated with it. On the SASB models, control is represented on surface 1 (focus on other) within the bottom half of the vertical dimension, representing the opposite of autonomy granting behaviors discussed above. Although the SASB models reflect control as occurring on the same dimension of behavior (although opposite end of the dimension) as autonomy granting, control is discussed in this separate section as a result of the literature often studying the specific associations of different forms of control on adolescent outcomes independent of autonomy processes. The SASB approach to coding control (as well as autonomy) may reduce problems with construct validity common within coding systems that combine control with warmth or hostility, and may create less difficulty in replicating results (Florsheim, et al., 1996, 1998; Humphrey, 1987; L. L. Humphrey & L. S. Benjamin, unpublished).

Researchers agree that there are different forms of parental control, and that the type of control observed should be considered when defining optimal parent–adolescent communication (Barber, 1996; Barber, et al., 1994; Baumrind, 1991; Florsheim, et al., 1996, 1998; Humphrey, 1987; Maccoby & Martin, 1983; Patterson & Stouhamer-Loeber, 1984; Rollins & Thomas, 1979). Recently, Barber has built on previous work that emphasized the importance of psychological control (Becker, de Boer, & van der Wal,2001; Schaefer, 1965), and has differentiated this form of control from behavioral control (Barber, 1996; Barber, et al., 1994).

Psychological Control

Psychological control has been defined as "parental control attempts that intrude into the psychological and emotional development of the child (i.e., thinking processes, self-expression, emotions, and attachment to parents)" (Barber, 1996). Psychological control is characterized behaviorally by the constraining of verbal expressions, invalidation of adolescent feelings, personal attacks on the adolescent, adolescent guilt inducement, the withdrawal of love from the child, and displays of erratic emotions (Barber, 1996). Additional research has coded similar processes to psychological control including parental belittling, blaming, attacking, and rejecting of adolescent ideas (Florsheim, et al., 1996, 1998; Humphrey, 1987). As discussed in the autonomy section, researchers have also captured behaviors that reflect hostile and extreme control through the interruption of ideas, making rude or sarcastic comments, devaluing, or judging the other person's contributions, pressuring for conformity without providing reasoning, and over-personalizing arguments (behaviors coded as "constraining autonomy" and "inhibiting relatedness" in Allen and Hauser's coding schemes) (Allen, et al., 1994a, b; Hauser, et al., 1984, 1987, 1991). Furthermore, research has identified "Angry coercion" as a parenting behavior that includes attempts to control adolescents in an angry manner or through threats (Ge, et al., 1995; Kim, et al., 2001; Melby & Conger, 1996; Paley, et al., 2000; Rueter & Conger, 1995; Scaramella & Conger, 2003).

Within the SASB framework, psychologically controlling types of behaviors are characterized as focused on other, high in control and neutral (1–5 on Figure 1) or hostile (1–6 on Figure 1) in nature. Control and warmth vs. hostility are separate dimensions that can be analyzed for their unique contribution to adaptation as well as in combination with one another. Therefore, researchers and clinicians are able to decipher whether the control itself is

important in predicting outcomes, whether it is the hostility present that relates to adjustment, or whether the combination of extreme control with hostility is most pertinent to study or modify.

Behavioral Control

Barber (1996) differentiates *behavioral control* from *psychological control* in that behavioral control influences the adolescent's behavior rather than the psychological and emotional development of the child (Barber, 1996). Observational research has implicitly captured elements of behavioral control that reflect when parents explain reasons behind decisions, focus the conversation at hand, and make suggestions to the adolescent (Allen, et al., 1994a; Hauser, et al., 1987). Furthermore, the ''nurturant/involved parenting'' construct utilized in several observational coding studies reflects control processes by capturing instances in which parents provide firm and straightforward guidance characterized by warmth to their adolescents (Ge, et al., 1996; Melby & Conger, 1996; Paley, et al., 2000; Rueter, et al., 1999).

Additionally, parental ''monitoring'' research has measured and described the importance of parental behaviors that attempt to manage or control adolescents' social lives during a period of increasing adolescent independence. Specifically, parental monitoring and general family management practices frequently cited in the literature include observing and measuring the extent to which parents ask about the adolescent's social activities (e.g., who the adolescent will be with, for how long, and what they will be doing) along with how often parents apply consistent limits, discipline, and structure, in order to manage the adolescent's behavior (Dishion & McMahon, 1998; Fletcher, Steinberg, & Williams-Wheeler,2004; Herrenkohl, Hill, Hawkins, Ick-Joong, & Nagin, 2006; Lamborn, et al., 1991; Patterson, 1982; Patterson & Stouthamer-Loeber, 1984). Furthermore, self-report research has commonly utilized the ''authoritative'' parenting construct to define adaptive parenting processes, which is characterized by high levels of warmth along with the provision of structure and guidelines (Steinberg, 2001; Steinberg, & Sheffield Morris,2001). Therefore, throughout the literature elements of behavioral control are included as important aspects of exploring adaptive parent–adolescent relationships and interactions.

Within the SASB framework, behaviors consistent with behavioral control are differentiated from those similar to psychological control in terms of the amount of control present and the warmth vs. hostility present. Specifically, control attempts that are reflective of behavioral control are represented on the SASB model as focused on other, moderate in control, and interpersonally warm (1–4 on Figure 1).

Control and Adolescent Outcomes

Research has consistently shown a relationship between negative adolescent outcomes and high levels of parental control that lack warmth. Note that such codes (high control and low warmth) provide blends of control together with hostility and constraining autonomy that are separate orthogonal dimensions in SASB. Specifically, adolescents who report their parents as psychologically controlling are more depressed and have greater problems with juvenile delinquency than adolescents who do not report these parental behaviors, especially in mother–daughter dyads (Barber, 1996; Barber, Olsen, Shagle 1994). Furthermore, parents who belittle or blame their adolescent, and attack or reject their ideas, have adolescents with higher rates of internalizing and externalizing disorders, eating disorders, and display hostile autonomy behaviors (e.g., walling off, avoidance) (Florsheim, et al., 1996, 1998; Humphrey, 1987). Furthermore, when parents interrupt adolescent's ideas, are sarcastic toward them, or pressure for conformity without reasoning, lower levels of adolescent ego development, and self-esteem are present, as well as higher levels of negative affect and psychiatric difficulties (Allen, et al., 1994a, b; Hauser, et al. 1984, 1987, 1991). Parental ''angry coercion'' (i.e., attempts to control the behavior or thoughts of the adolescent in an angry manner or through threats) is also associated with adolescent conduct problems, depression, ineffective problem-solving skills, poor academic performance, and later hostility toward peers, the adolescent's own children, and their romantic partners (Ge, et al., 1995; Kim, et al., 2001; Melby and Conger, 1996; Paley, et al., 2000; Rueter and Conger, 1995; Scaramella & Conger, 2003). Thus, convincing evidence indicates that control characterized by hostility, anger, and coerciveness, is related to poor adolescent adaptation.

Theorists posit different hypotheses regarding the links between psychologically controlling parental behaviors and poor adolescent adaptation, and suggest that psychological control may be particularly detrimental for older adolescents. First, psychologically

controlling behaviors may undermine adolescents' ability to achieve an independent self and portray a message of incompetence to the adolescent (Pomerantz & Ruble, 1998). As adolescents grow older, and the urgency to develop their own identity becomes greater, messages from parents of incompetence may be particularly upsetting. Second, adolescents may over time develop stronger internalizations from parental messages that their thoughts, feelings, and actions are not acceptable, which may relate to depression, low self-esteem, and other internalizing difficulties (Barber, 1996; Steinberg, 2001). Finally, attachment theorists posit that psychologically controlling parents provide a negative template for adolescents, which shapes how they expect interactions with others to develop. Negative expectations for social interactions may relate to difficulties in creating and maintaining social relationships (Rueter & Conger, 1995; Scaramella, Conger, & Simons, 1999), a problem especially important for older adolescents who spend more time developing peer friendships than younger adolescents (Larson & Richards, 1991; Steinberg & Silverberg, 1986). Therefore, extreme parental control, characterized by a lack of warmth and often hostility, acts via several potential pathways to poor adolescent adaptation, and may be particularly detrimental as adolescents age. Future research should attempt to establish how observed psychological control relates to adolescent adaptation across this developmental transition, and if this type of control is particularly detrimental to older adolescents.

In contrast to psychological control, parental control characterized by warmth and guidance is an important aspect of optimal adolescent–parent interpersonal processes and is consistently related to positive adolescent outcomes (Barber, 1996). Observational research by Allen, et al. (1994a, b, 2003) and Hauser, et al. (1984, 1987, 1991) finds that parental behaviors such as explaining reasons behind decisions, as well as focusing and making suggestions to the adolescent involve warm guidance. These parental behaviors are associated with adaptive adolescent outcomes including lower rates of psychiatric difficulties, and negative affect, as well as higher levels of ego development, self-esteem, and attachment security. Furthermore, parents who provide firm, yet warm, guidance to their adolescents seem to foster positive adolescent adaptation (Barber, 1996; Ge, et al., 1996; Melby & Conger, 1996; Paley, et al., 2000; Rueter, et al., 1999).

Parental "monitoring" behaviors are likely an important component of optimal parental control processes (Dishion and McMahon, 1998; Fletcher, et al., 2004; Lamborn, et al., 1991; Patterson, 1982; Patterson & Stouthamer-Loeber, 1984). Specifically, poorly "monitored" adolescents tend to be involved in antisocial behaviors (Patterson & Stouhamer-Loeber, 1984), use illegal substances (Flannery, et al., 1994), do worse in school (White & Kaufman, 1997), and engage in risky sexual practices (Metzler, Noell, Biglan, Ary, Smolkowski,1994). Furthermore, high levels of parental supervision, the communication of clear expectations, and consistent discipline are also related to lower levels of adolescent violent behavior (Herrenkohl, et al., 2006). This body of research generally suggests that when parents are actively involved in guiding their adolescents' social lives and behavior through moderate guidance and control, positive outcomes are more likely to occur.

Effective parental monitoring is not only a result of adaptive parental control and guidance, but also to adolescents' willingness to disclose information to their parents about their social lives (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Parents' knowledge about their adolescents' behavior is equally, if not more important, than control behaviors for predicting adolescent outcomes, and this knowledge largely derives from adolescent disclosure (Crouter & Head, 2002; Stattin & Kerr, 2000). Therefore, guiding and actively monitoring adolescents' behavior involves multiple components including control and monitoring as well as processes that encourage communication and adolescent disclosure (Fletcher, et al., 2004). Adolescent disclosure provides a context in which parents gain very important knowledge about their child's behavior and allows for the opportunity to appropriately guide them (Kerr & Stattin, 2000). In the SASB model, healthy parental attempts to elicit adolescent disclosure would be characterized as focused on the other person, as moderately high in autonomy giving, and interpersonally warm (1–2 on Figure 1). Appropriate adolescent disclosure would be represented by a complementary behavior to the parents' position and is focused on the self, moderately high in autonomy expressing, and interpersonally warm (2–2 on Figure 1).

Based upon new conceptualizations of effective parental monitoring, a process model of monitoring which includes elements of parental control and guidance as well as adolescent disclosure has recently been suggested (Hayes,Hudson, & Matthews, 2003).

Defining Optimal Parent–Adolescent Interactions

This model suggests a temporal and transactional process in which parents first set guidelines, provide limits, and inquire about activities planned (traditional monitoring, or control behaviors). Next, the parent encourages adolescent disclosure by soliciting information from the adolescent or the adolescent freely discloses information. Finally, the parent can respond to the situation with either more guidance and limits, or provide similar autonomy and independence based upon how the event unfold. The adolescent then reacts to the parental response, which may include submission or defiance, partly based upon the interpersonal nature of the parental behaviors, the temperament of the adolescent, and the parent–adolescent relationship (Hayes et al., 2003; Fletcher, et al., 2004).

Adaptive levels of behavioral control across adolescence may be characterized by a balance between attempts at influencing adolescent behaviors, and respect for the adolescent's growing independence through parental submission and openness to adolescent ideas (Allen, et al., 1994a, b; Ge, et al., 1996; Melby & Conger, 1996; Hauser, et al., 1984, 1987, 1991; Steinberg, 2001). Due to the unequal power in the parent–child relationship, parents will likely exhibit more control over their adolescents than submission to their ideas, as parents should be "the leaders" (Dishion, et al., 2004). However, parent–adolescent interactions exclusively dominated by parental control, even behavioral control, without submission or affirmation to any adolescent ideas, may undermine the parent–adolescent relationship, and ultimately the adolescent's ability to develop self-competence, internal behavior regulation, and individuation. Further, excessive amounts of behavioral control for older adolescents who have well-developed cognitive reasoning skills (Keating, 2004) and more fully developed identities (Grotevant & Cooper, 1985), may be particularly problematic for adolescent adjustment.

In summary, adaptive behavioral control and parental monitoring likely occurs as a dynamic process in which parents of adolescents allow for autonomy and independence, evaluate the results of the autonomy granting process, and then respond by either providing more guidance, if needed, or allowing for more independence (Hayes, et al., 2003). Future research should explore if optimal parent–adolescent interactions include a set proportion of behavioral control vs. parental submission and if the benefits of frequent parental control decreases across adolescence.

Control and Parental Outcomes

In addition to the relation between parental control behaviors and adolescent outcomes, it is likely that control in the parent–adolescent interaction is associated with psychosocial outcomes of parents. There is very little work that has explored the associations between adolescent control behaviors and parental adaptation; therefore, the hypotheses set forth are merely speculative. Although not observational in nature, C.A. Berg et al., (unpublished) found that when mothers perceived their adolescent as being controlling they had lower levels of positive emotion. This was especially the case when the adolescent was younger. C.A. Berg et al., (unpublished) suggest that adolescents engaging in controlling behaviors toward their parents may be perceived by parents as developmentally off-course, and may be associated with feelings of low self-efficacy among parents, and less positive emotions (C.A. Berg et al., unpublished). From C.A. Berg et al.'s research (unpublished) it is unclear whether mothers' appraisals were reflective of either psychological control or behavioral control. Future research should explore the type and proportion of adolescent control that is healthy for parental outcomes as well as for adolescent adaptation.

The marital interaction literature also provides some tentative evidence that dimensional control may relate to parental adjustment, although the marital relationship is very different in nature than the parent–adolescent relationship. Consistent with an approach that emphasizes a balance of control and submissive behaviors as adaptive in parent–adolescent interactions, married couples that exhibit controlling behaviors interspersed with submission, frequent validation, and affirmation (e.g., compromise and negotiation) report positive marital adaptation and emotional well-being (Gottman, 1994; Gottman & Krokoff, 1989). This work suggests that parental acts of friendly control, coupled with autonomy giving behaviors, and mutual acts of submission, will be beneficial for parent outcomes, as well as adolescent adaptation. Parental behaviors that influence adolescents in a warm way are likely to give parents a sense of parenting self-efficacy (Ryff, Lee, Essex, & Schmutte,1994; Steinberg & Silverberg, 1987), and relate to positive adaptation. In contrast to well-regulated married couples, non-regulated couples with poorer emotional adaptation engage in hostile blaming, personal attacks, and escalating negative affect (Gottman, et al., 1998). These optimal interactions from marital interaction research

may surface as important for predicting parental outcomes associated with parent–adolescent interactions and should be an important direction for future research.

Control Sequences and Reciprocity: Illustrations of a Transactional Approach

Although parenting research has largely focused on the unidirectional associations of parental control on adolescent behaviors and adaptation, several researchers have suggested that adolescents also affect their parents' controlling behaviors in a reciprocal, and sequential manner (Allen, et al., 1994a; Amiel, Sherwin, & Simonson,1986; Barber, 1996; Florsheim, et al., 1996, 1998; Humphrey, 1987; Maharaj, et al., 2001; Rueter & Conger, 1998). For instance, Humphrey, (1987) found that daughters who are defensive, sulky, and whiny, have mothers who exert hostile control over their adolescents, an association posited to be bi-directional in nature. In addition, when parents perceive their adolescents as difficult to deal with, or when adolescents are overly submissive, parents engage in coercively controlling behaviors, guilt induction, and hostile sarcasm (Florsheim, et al., 1998; Simons, Whitbeck, Conger, & Melby, 1990). Furthermore, longitudinal research has shown that parents exhibit coercively controlling behaviors when adolescents are uninvolved and defiant, and that positive, involved, parenting decreases when adolescents are belligerent while interacting with their parents (Rueter & Conger, 1998). Finally, adolescent delinquency, and depression are related to the later utilization of psychological control by parents (Barber, 1996).

This research points to the transactional nature of control-submission processes. For optimal interaction, parents and adolescents need to avoid engaging in reciprocal sequences of interactions characterized by psychological control and responses of uninvolvement, sulkiness, and overly submissive behaviors that threaten autonomy development. The SASB model provides a framework for examining these bidirectional processes making specific predictions regarding what healthy control and submissive behaviors look like, how these sequences typically transpire, and how they might change across adolescence. The model explores how parents and adolescents may facilitate control-submission sequences that are not extremely enmeshed (Minuchin, 1974) to the point of undermining healthy autonomy development. Adaptive control-submission sequences are likely characterized by reciprocal relations between moderate amounts of behavioral control, interspersed with affirmation of autonomy, and submissive behaviors that are not characterized by hostility, or uninvolvement (e.g., trusting, relying upon, etc.). The SASB model provides interpersonal descriptions of how to increase the probability of healthy adaptive sequences characterized by moderate levels of warm control (1–4 on Figure 1) and the complementary position of moderate levels of warm submission (2–4 on Figure 1) (see discussion below). As adolescents age, parents use of frequent control will need to decrease and be replaced by simple autonomy granting behaviors in optimal interactions. However, autonomy granting should not be extreme as reflected by parental disengagement, as this behavior reflects premature autonomy granting and is related to poor outcomes (Dishion, et al., 2000, 2004).

A transactional approach to understanding healthy control-submission processes builds upon decades of research and clinical practice that emphasizes the importance of healthy control patterns within the social context of the family (Alexander, 1973; Patterson & Stouthamer-Loeber, 1984). Disseminating information regarding adaptive control-submission patterns to parents and adolescents may decrease the chance of "power struggles" characterized by coerciveness and hostility (Barber, 1996; Patterson & Stouthamer-Loeber, 1984; Steinberg & Silk, 2002).

Summary of Interpersonal Control

Different forms of control are healthy vs. unhealthy in parent–adolescent interactions. Psychological control by parents (e.g., coerciveness, hostility, and undermining emotional independence) is associated with poor adolescent outcomes. Behavioral control (e.g., warmth, guidance, monitoring of adolescents' behavior together with adolescent disclosure to parents) is linked to positive adolescent adaptation. The amount of parental behavioral control may optimally decrease across adolescence and be replaced by more autonomy giving behaviors. In addition to understanding the associations of parental control with adolescent adaptation, future research should explore a transactional model that shows how control relates to parental adjustment. The SASB model provides specific predictions

regarding how parent and adolescent control-submission processes may occur transactionally and disentangles control from warmth and hostility providing important information for clinicians and researchers.

WARMTH AND HOSTILITY

Measuring and Defining Interpersonal Warmth and Hostility in Parent–Adolescent Interactions

In addition to understanding the role of interpersonal autonomy and control in defining adaptive parent–adolescent collaboration, research has shown that the amount of warmth vs. hostility present within the interaction is also an important predictor of adolescent adjustment. However, the majority of parent–adolescent behavioral coding research combines warmth and hostility with other behaviors in constructs, making it difficult to ascertain the unique associations of warmth and hostility with adolescent outcomes. In addition to the level of warmth in the interaction, researchers have included in their ''warmth'' codes behaviors such as ''responsive listening,'' ''assertiveness,'' ''approval,'' ''affirming statements,'' ''quality time,'' ''empathy,'' and ''supportiveness'' (Cui, Conger, Bryant, & Elder, 2002; Ge, et al., 1996; Isberg, et al., 1989; Scaramella, Conger, Spoth, Simons 2002; Sheeber, Hops, Alpert, Davis, Andrews,1997; Sheeber & Sorenson, 1998). The coding of these behaviors captures not only elements of warmth, but also behaviors that promote and exhibit autonomy, and other general relationship factors. Therefore, within existing research, a confound between ''warmth'' and autonomy exists that makes it difficult to understand the unique contribution of warmth to adolescent adaptation.

A similar issue exists with regards to hostility, as behaviors such as ''coercive control,'' ''rejection,'' ''disapproval'', ''aggression,'' ''criticism,'' and ''derogation,'' have all been included, along with hostility, in constructs that together represent ''hostility'' (Cui, et al., 2002; Ge, et al., 1996; Isberg, et al., 1989; Rueter & Conger, 1995; Scaramella, et al., 2002; Sheeber, et al., 1997; Sheeber & Sorenson, 1998). These behaviors represent not only hostility, but also elements of control that may be partially accounting for the relations between ''hostility'' and adolescent adaptation.

The confounds of warmth and hostility with autonomy and control are addressed in the SASB framework and future work will address the relative importance of warmth and hostility in understanding adaptive parent–adolescent interpersonal processes. The SASB system allows for coders to separately rate the amount of hostility and warmth present within a speech unit before combining it with the separate judgment of how much autonomy and control were present to create a code. Therefore, one can analyze for the unique associations of warmth, hostility, autonomy, or control with outcomes, or the interaction of these behaviors (e.g., autonomy combined with warmth) and relations with outcomes. Within the SASB system, interpersonally warm behaviors are found on the right side of the circumplexes and hostile behaviors are found on the left side of the circumplexes. Behaviors that are considered neutral (neither warm nor hostile) are reflected on the very top and bottom of the circumplexes (i.e., 1–1, 1–5, 2–1, 2–5).

Warmth vs. Hostility and Adolescent Outcomes

The associations of warmth and hostility with adolescent outcomes are straightforward and predictable. Parents and adolescents whose interactions are characterized by high levels of warmth have adolescents who experience more positive relations with their peers (Cui, et al., 2002; Kim, et al., 2001; Paley, et al., 2000), high levels of self-esteem and self-reliance (Capaldi & Patterson, 1987; Isberg, et al., 1989; Montemayor, 1986; Steinberg & Silk, 2002), strong problem-solving skills (Capaldi and Patterson, 1987; Forgatch, 1989; Scaramella & Conger, 2003), and few depressive symptoms or conduct problems (Florsheim, et al., 1996, 1998; Kobak, Sudler, & Gamble, 1991; Scaramella et al., 2002; Sheeber, et al., 1997; Sheeber & Sorenson, 1998). Parent–adolescent interactions characterized by hostility relate to adolescents who interact with hostility toward their peers and their future children (Cui, et al., 2002; Kim, et al., 2001; Scaramella & Conger, 2003), experience high levels of negative affect and depression (Kim, et al., 2001; Sheeber, et al., 1997), low levels of self-esteem (Isberg, et al., 1989), poor academic performance (Melby & Conger, 1996), and difficulty with delinquent friendships, conduct problems and problem-solving effectiveness (Capaldi, Forgatch, & Crosby, 1994; Florsheim, et al., 1998; Scaramella, et al., 2002).

Optimal collaboration must not only balance the adolescent's needs for autonomy with proper levels of guidance, but this balance must take place in the context of warmth, rather than hostility. For example, behaviors exhibiting and affirming autonomy

characterized by warmth rather than hostility (e.g., affirming others and disclosing independent feelings vs. neglecting the other, or walling off with one's own feelings) are important for determining whether autonomous behaviors are adaptive (Florsheim, et al., 1996, 1998; Humphrey, 1987). Similarly, parental control or challenges characterized by warmth, rather than hostility (guiding suggestions and encouragement vs. put downs, blaming, and criticisms), are likewise beneficial (Allen, et al., 1996; Barber, 1996; Cui, et al., 2002; Ge, et al., 1996; Rueter and Conger, 1995), and emphasize the importance of warmth and hostility in deciding upon adaptive and maladaptive control. Therefore, the existing literature appropriately posits that it may not be that warmth, hostility, autonomy, and control behaviors independently predict adaptation, but rather, the combination of these behaviors may be key to understanding adjustment.

Warmth vs. Hostility and Parental Outcomes

Although most behavioral coding of parent–adolescent interactions focuses on the effect of warmth and hostility on adolescent outcomes, a transactional model emphasizes that parental outcomes are likely to be associated with these behaviors as well. Although little, if any, research has explored the relationship between warmth and hostility in parent–adolescent interactions and parental outcomes, it is probable that parents are similarly affected by warmth and hostility. In related marital interaction research, Gottman (1994) has identified that non-regulated married couples who reported poor adaptation, displayed hostility (i.e., ''hostile couples,'' and ''hostile/detached couples''), while regulated couples were characterized by behaviors that contained elements of warmth. Therefore, it is not unreasonable to assume that parents benefit from warm interpersonal interactions with their adolescents.

Warmth vs. Hostility Sequences and Reciprocity: Illustrations of a Transactional Approach

Consistent with a reciprocal, transactional, model of parent–adolescent interactions, several researchers have found sequential and mutual relations between parent and adolescent warmth and hostility. That is, warm or hostile behaviors from either parents or adolescents are likely to relate to a warm or hostile response from the other (Florsheim, et al., 1998). For instance, researchers have found that depressed adolescents elicit hostile parenting responses and decreases in warm parenting techniques, which may relate to further adolescent withdrawal and depression (Kim, et al., 2001; Slesnick & Waldron, 1997). Also consistent with a bi-directional model, related research has shown that parental hostility is both a response to adolescent antisocial behaviors, and a contributing factor to the development of these behaviors (Florsheim, et al., 1998; Scaramella, et al., 2002). In addition, hostile behaviors in parent–adolescent interactions have been shown to mutually reinforce and complement one another until hostility dominates the interaction completely (Kim, et al., 2001), a condition that has been found to undermine effective problem-solving behaviors (Reuter & Conger, 1995). Optimal parent–adolescent interactions will include reciprocal acts of warmth, rather than hostility, which tend to mutually reinforce one another across time.

The ability of parent–adolescent dyads to facilitate warm interactions and impede hostile exchanges is a key component of optimal interpersonal processes. Although conflict and hostility are not as prominent in parent–adolescent relations as once thought (Steinberg & Silk, 2002), these behaviors are characteristic of early adolescent and parent interactions (Laursen & Collins, 1994), and may impede effective parent–adolescent collaboration. Warm responses to hostile behaviors by either parents or adolescents may break the chain of hostility within an interaction, and facilitate subsequent warm reciprocity, and optimal interactions (Slesnick & Waldron, 1997). However, when warm behaviors are consistently met with incongruent hostile reciprocity, this may be particularly detrimental, as the warmth present may eventually become difficult to maintain and result in escalating hostility (Patterson & Stouthamer-Loeber, 1984). Future work would benefit from sequential analyses that explore how often warm vs. hostile behaviors complement each other. If parents and adolescents can avoid escalating hostility and facilitate warmth, they may change the interpersonal processes present within their interactions. The ability of either parents or adolescents to do so may be an important factor in teaching parents and adolescents how to effectively communicate about difficult issues (see Steinberg & Silk, 2002 for a review of this issue), and is likely a key component of optimal interactions.

Summary of Warmth vs. Hostility

Research has consistently shown predictable relationships between interpersonal warmth in parent–adolescent interactions and adaptive adolescent adjustment, and between interpersonal hostility and poor adolescent adjustment. These associations are consistent across adolescence, indicating that optimal interactions should contain warmth regardless of adolescent age. However, coding systems have often combined warmth and hostility with other dimensions of behaviors, such as autonomy and control, making it difficult to ascertain the unique associations of warmth and hostility with adaptation. In addition, research has shown bi-directional relations between parent and adolescent expressions of warmth and hostility are likely, and indicate that affiliative behaviors may mutually reinforce one another in a sequential fashion. The ability of parents and adolescents to mutually reciprocate warmth and facilitate change in hostile interactions through providing warm responses to hostile behaviors contributes to maintaining optimal collaboration. Warm interactions are likely to be associated with positive outcomes in parents as well as adolescents.

CODING INTERPERSONAL BEHAVIOR USING THE STRUCTURAL ANALYSIS OF SOCIAL BEHAVIOR

The literature reviewed lends support to the importance of the dimensions underlying the SASB (Benjamin, 1974; L. L. Humphrey & L. S. Benjamin, unpublished). The SASB model provides a dimensional theoretical model based on the interpersonal circumplex (Florsheim, et al., 1998; Smith & Brown, 1991) to define optimal parent–adolescent collaboration. Specifically, SASB includes an interdependence dimension (i.e., the vertical axis of the circumplex) that allows for coders to determine, on the *other*-focus surface, the extent to which behaviors affirm the autonomy of others or control them. In addition, for the *self*-focus surface, coders determine the extent to which an individual expresses autonomy or submits. The self/other focus dimensions allows for the unconfounding of expressing vs. affirming autonomy that is frequently present in the literature (Allen, et al., 1994a). In addition, the horizontal axis of the model allows the coder to determine the extent to which behaviors are either warm, neutral, or hostile in nature, a dimension also consistently linked to adaptation and often confounded in the literature. Interpersonal circumplex models have achieved tremendous success in the marital interaction literature in understanding the basic dimensions of marital interaction (Smith and Brown, 1991) and can be fruitfully applied to the adolescent–parent interaction literature as well.

The SASB system also provides a circumplex-based coding system to apply to parent–adolescent interactions. If a behavior is self-focused, coders rate dimensionally how autonomous or submissive the behavior is and then how warm or hostile the behavior is. If the behavior is focused on another person, coders rate dimensionally how autonomy giving or controlling the behavior is and then the amount of warmth or hostility present in the action. The SASB system allows for the opportunity to assign "complex" codes to behaviors that have multiple interpersonal meanings. For example, if a behavior is both autonomy giving and controlling (e.g., "Why do you always do it that way?" said in a hostile manner, indicating both the desire for an autonomous explanation, but also inferring control) both codes can be given. Therefore, by allowing the behavior to include two separate codes, SASB provides the opportunity to code complicated behaviors important for defining optimal processes. At the same time, SASB allows for the codes to be analyzed separately, giving the researcher the ability to ascertain the unique associations of autonomy, control, warmth, and hostility with outcomes. The SASB system has been a successful tool for coding parent–adolescent interactions in previous research (Florsheim, et al., 1996, 1998; Humphrey, 1987, 1989).

As indicated before, SASB provides descriptive probabilities regarding how parent and adolescent behaviors will reciprocally relate. For instance, Benjamin (1974) posits that certain behaviors are likely related to certain interpersonal responses and often "complement" one another. Complementarity occurs when behaviors emitted by one person are complemented by another with the same warmth or hostility (horizontal axis) and level of interdependence (vertical axis). For example, an expression of autonomy characterized by warmth (self-focus, 2–2 in Figure 1) would be predicted by SASB to be followed by a warm affirmation of the autonomy expression (other focus, 1–2 in Figure 1). Further, a behavior that exhibits hostile control (other focus, 1–6 in the Figure) would be predicted to relate to hostile submission from the other person (self-focus, 2–6).

Additionally, Benjamin (1974) posits that "antithesis" behaviors, which are the opposite of complementary behaviors, provide interpersonal methods of attempting to change a detrimental sequence of communication, or facilitate a positive interaction. For example, if an adolescent is walled off in hostile autonomy (self-focus, 2–8), the complementary code that would likely facilitate the walled off stance would be to ignore or neglect them (other focus, 1–8). However, if the parent attempted to engage the adolescent by displaying nurturant behaviors (other focus 1–4, the opposite of 1–8) this may be associated with the adolescent changing to trust (2–4 in Figure 1). Therefore, SASB provides valuable descriptions that help explore the reciprocity and sequences of both adaptive and maladaptive interpersonal communications.

DEFINING OPTIMAL COLLABORATION FROM AN INTERPERSONAL PERSPECTIVE

As we described, we use collaboration as a metaphor for optimal parent–adolescent interaction during adolescence. We now define an optimal collaborative process, beneficial for both parents and adolescents alike, by integrating prior parent–adolescent interaction with the tools that SASB provides. This section will briefly describe from an interpersonal perspective what optimal collaboration may look like, and how it might change across adolescence from an interpersonal, SASB-based perspective. For a summary of relevant SASB-based codes required for optimal collaboration see Table I.

Optimal Interpersonal Warmth

Consistent with prior parenting research (Baumrind, 1978; Steinberg & Silverberg, 1986; Steinberg & Silk, 2002), and SASB-based theory (Benjamin, 1974) a baseline of interpersonal warmth is important for defining the adaptiveness of parent–adolescent interactions. That is, whether behaviors are autonomy taking, autonomy granting, controlling, or submissive, optimally, they will be characterized by warmth. Although researchers have found mixed results regarding the benefits and detriments of both autonomy and control on adolescent outcomes (Barber, 1996; Florsheim, et al., 1996; Grotevant & Cooper, 1985; Steinberg & Silverberg, 1986), this may be due to confounding of these dimensions with warmth and hostility. There is more than one way to be autonomous or controlling (hostile methods and warm methods), and warmth should accompany both autonomy granting and taking behaviors, as well as controlling and submissive behaviors in order to be optimal (Florsheim, et al., 1998). In addition, consistent with a transactional model of collaboration, warmth is posited to elicit warmth, and facilitate adaptive outcomes, while hostility is likely to escalate into a coercive and maladaptive process (Patterson, 1982). Furthermore, the ability to follow hostile behaviors with a warm response may help to avoid

Table I. Description of Selected SASB Codes for Optimal Collaboration

Code Name	Code Description
Nurturing/protecting (1–4)	Behavior that is both controlling and warm. Includes, as examples, behaviors that guide, provide sensible analysis, monitor, and remind.
Trusting/relying (2–4)	Behavior that is warm and deferential. Includes, as examples, behaviors that accept reasoning, ask for help, take in and learn from, depend on, and trust in.
Disclosing/expressive (2–2)	Behavior that is warm and autonomy taking. Includes, as examples, asserting one's own ideas and feelings, clearly expressing a position, and openly disclosing and revealing one's experience.
Affirming/understanding (1–2)	Behavior that is warm and affirming of autonomy. Includes, as examples, fairly considering another's position, listening to another, confirming another's ideas, and showing empathic understanding.
Nurturing/protecting (1–4) *plus*, Affirming/understanding (1–2)	Behavior that is warm and both moderately controlling and autonomy granting. For example, questions that encourage a response of autonomy, but are constructively leading and guiding in nature. Also could be part of negotiation, for example, a parent asking how an adolescent would feel about a compromised curfew.
Disclosing/expressive (2–2) *plus*, trusting/relying (2–4)	Behavior that combines a warm expression of desires, feelings and thoughts with warm deference. For example, an adolescent who politely asks to extend his curfew.

coercive and hostile interactions (Patterson & Stouthamer-Loeber, 1984). Therefore, a baseline of warmth is a key component of optimal collaboration, and should characterize adaptive interactions across adolescence. Warm behaviors are found on the SASB model on the right side of the circumplexes (see Figure 1).

Optimal Autonomy Processes

An additional component of healthy collaboration involves the ability to maintain connectedness while exerting autonomy (Allen, et al., 1994a; Grotevant & Cooper, 1985; Hauser, et al., 1984), which is defined by SASB as moderate levels of autonomy. Moderate levels of autonomy, both expressing and affirming, must not threaten the connectedness in the parent–adolescent relationship, and also allow for the development and maintenance of an independent sense of self (Allen, et al., 1994a; Hauser, et al., 1987; Grotevant & Cooper, 1985). These autonomy behaviors fall into behaviors labeled 1–2, 2–2, 1–4, 2–4 within the SASB model (see Figure 1) and generally reflect behaviors that encourage, and assert, friendly autonomy, and that do not affirm autonomy to the point of ignoring (1–1, 1–8 behaviors on the model) or extreme and hostile separation from others (2–1, 2–8 behaviors on the model). Consistent with Hauser,et al.'s (1987) work emphasizing the importance of sequential analyses, when optimal collaboration occurs, moderate levels of autonomy taking and affirming behaviors will complement one another and may reciprocally reinforce one another in time. Moderate autonomy processes will likely relate to the type of "teamwork" that collaborative coping researchers refer to (Berg, Meegan, & Deviney,1998; C.A. Berg et al., unpublished; Wiebe, et al., 2005), and be associated with benefits for parents and adolescents alike. Moderate autonomy processes should also be warm in nature, rather than hostile, as when autonomy is combined with hostility, it is associated with poor adaptation (Florsheim, et al., 1998; Humphrey, 1987).

When adolescents or parents do not express appropriate autonomy, the ability of the other person to encourage autonomous contributions is a key to maintaining healthy interactions. At times, this process may involve interpersonal complexity in which the granting of autonomy is combined with warm and nurturing guidance in order to facilitate progress and engagement, especially with younger adolescents (e.g., "It is probably good to talk about your feelings, don't you think?" 1–2 combined with 1–4 on the model). However, the complex combination of autonomy giving behaviors with hostile control (e.g., "Are you just going to keep doing it wrong?", 1–2 combined with 1–6 on the model), or autonomy taking behaviors combined with blame (e.g., "You always make me feel bad about myself.", 2–2 combined with 1–6 on the model), are likely to escalate into hostile and coercive processes (Patterson, 1982). In addition, principles of antithesis (Benjamin, 1974) may inform how parents can engage an adolescent who is "sulking" (2–6 on the model) with warm affirmation (1–2, the opposite of 1–6, which is the complementary position to the adolescent's behavior on the model) that encourages self-expression (2–2 on the model). Both examples of engaging autonomy require parents and adolescents to identify a lack of healthy autonomy and respond in a way that increases the probability of a healthy autonomous response.

Finally, optimal autonomy processes may change across adolescence and relate to positive adjustment for adolescents and parents. Although healthy parent–adolescent interactions usually include autonomous functioning, across adolescence the frequency of autonomous behaviors may optimally increase. That is, behaviors that affirm and display autonomy (1–2, and 2–2 on the model) should increase in frequency as adolescents develop their own unique identity (Grotevant & Cooper, 1985; Steinberg & Silk, 2002) and as their cognitive capabilities increase (Keating, 2004; Steinberg & Silk, 2002 for a review). In addition, parents will likely benefit from an increasing ability to work with their adolescent as a collaborative partner in a coping process that allows them to assert their own ideas and feelings, and have these disclosures affirmed at a time when they may feel particularly distant from their adolescent (Steinberg & Silk, 2002). Future research should explore if these age-related changes occur, when these changes are optimal, and how they relate to adaptation in both parents and adolescents alike.

Optimal Control Processes

In addition to autonomy and warmth, the amount and type of control and submissive behaviors present in an interaction is also an important piece to defining interpersonally optimal parent–adolescent collaboration. Similar to adaptive autonomy, moderate control and submission processes characterized by 1–4 and 2–4 behaviors on the model (see figure 1),

are posited to be optimal for parent–adolescent interactions. These clusters are defined generally as warm and moderate control attempts (other focus, 1–4 on the model) and warm and moderate submission to these attempts (self-focus, 2–4 on the model). These control and submissive behaviors reflect authoritative parenting and represent a middle ground between permissive parenting (Baumrind, 1978) characterized by a lack of guidance (seen as 1–1, or 1–8 behaviors in the model) and submission (seen as 2–1, and 2–8 behaviors in the model), and authoritarian parenting styles, characterized by intrusive or psychological control (Barber, 1996; Holmbeck, et al., 2002, seen as 1–5 and 1–6 behaviors in the model) and complete or hostile submission (seen as 2–5, or 2–6 behaviors in the model). SASB posits that warm control attempts (1–4 on the model) will be complemented by warm submission (2–4 on the model) and will reciprocally and sequentially relate to one another. These patterns are consistent with behavioral control attempts, and are likely to provide an interpersonal context in which guidance, nurturance, and protective support are coupled with trust, reliance, and compliance, to form optimal control-submit sequences for parents and adolescents.

Although parents may engage in more control behaviors and less submissive behaviors than their adolescents, during late adolescence parents and adolescents will benefit when the proportion of parental control to submission behaviors become more equal than during younger adolescence, when more guidance and protection is developmentally appropriate (C.A. Berg et al., unpublished; Wiebe, et al., 2005). Parents may trust and submit to more adolescent ideas as the adolescent shows greater capacity to actively contribute (evidenced by more parental 2–4's in the model). In addition, it is likely that influence attempts by parents will optimally decrease across adolescence (1–4's, 1–5's on the model) and be replaced by simple autonomy giving processes (1–2's on the model) as part of a renegotiation of roles during adolescence. Adolescent's submissive behaviors (2–4's and 2–5's) will optimally decrease across adolescence, and be replaced by more active influence attempts (1–4's). Furthermore, healthy parent adolescent collaboration will involve control-submission sequences best categorized as negotiation. From a SASB perspective, these interchanges may be optimally characterized by adolescent submission that is complex in nature including autonomy assertion, combined with trust and reliance (e.g., after being asked to be home by 10 o'clock, an adolescent might respond by asking, "I would really like to stay until 11 instead of 10 if that's ok?", a 2–2 combined with a 2–4 on the model). In negotiation, a parent might respond with an autonomy granting behavior (1–2) combined with warm control (1–4), for example, "How would you feel about 10:30 instead?" However, in order to avoid the detriments of premature autonomy (Dishion, et al., 2004), it is also important that even older adolescents continue to stay connected with their parents through submitting to their parents in a warm way, rather than not submitting at all, or submitting in a hostile manner (2–4's rather than 2–1's, 2–6's and 2–8's.)

Engagement in Collaboration

Finally, optimal collaboration involves a high level of engagement by all involved in the interaction. The importance of mutual engagement in collaboration for adaptation is emphasized in coping research (Berg, et al., 1998; C.A. Berg, et al., unpublished; Bodenmann, 1997; Lyons, et al., 1998; Wiebe, et al., 2005) and in parent–adolescent interaction research (Allen, et al., 1994b, 2002; Grotevant & Cooper, 1985; Hauser, et al., 1984; Sheeber & Sorenson, 1998). Frequent participation in an interaction is a required component of optimal collaboration as it is evidence of the teamwork, negotiation, and brainstorming that collaborative coping researchers emphasize (Berg, et al., 1998; Bodenmann, 1997; Lyons, et al., 1998). That is, an individual who very infrequently engages, but when engaged behaves in ways consistent with optimal collaboration is not considered highly collaborative. In these cases, although the individual's codes may reflect collaborative processes, there is not enough engagement to reflect true collaborative processes. Future research should explore how much participation is required for optimal interactions across adolescence and whose engagement is most important (parents' or adolescents'). Frequent engagement may become more important in defining optimal collaboration as adolescents become older and more developed cognitively and socially.

Culture, Ethnicity and Socioeconomic Status and Optimal Collaboration

The nature of optimal parent–adolescent interactions may differ across cultures, ethnic groups, and socioeconomic status. Although it is beyond the

scope of the current review to address all of these issues specifically, it should be noted that the same parental behaviors predict differently adolescent and children outcomes depending on culture, ethnicity, and socioeconomic status (see Hill, 2006, for a review). For example, the effect of parental autonomy granting is moderated by the socioeconomic status of the adolescent's family (Boykin-McElhaney & Allen, 2001). Adolescents reared in low income, high-risk environments have better outcomes when their mothers do not grant a great deal of autonomy, while adolescents in low risk contexts have better relationships with their mothers when autonomy granting occurs frequently (Boykin-McElhaney & Allen, 2001). When the risks of the social context are high, autonomy granting behaviors may be perceived by adolescents as neglectful and uncaring, and may allow for the adolescent to engage in delinquent behaviors (Crittendon, Claussen, & Sugarman,1994; Sheeber, et al., 1997).

In addition, parenting practices that are high in control such as "authoritarian" styles vary in predicting outcomes depending upon the cultural background or socioeconomic status of the family. Specifically, in Mexican families who are not particularly acculturated in American society, harsh discipline and control are related to fewer conduct problems in children and were perceived as warm and caring (Hill, et al., 2003). Furthermore, while harsh control and discipline have been associated with negative outcomes in European-American families, in African-American families and other ethnic groups, this type of control has not been associated with more conduct difficulties (Deater-Deckard & Dodge, 1997; McLoyd, et al., 2005). However, recent research suggests that previous work may have confounded the influences of culture and SES on outcomes and suggests that an interaction effect between the two should be considered when examining the effects of different types of parenting on children's outcomes (Hill, 2006). Thus, when defining optimal parent–adolescent collaboration, careful consideration should be given to understanding the impact of culture, ethnicity, and socioeconomic status on what is considered optimal processes.

IMPLICATIONS FOR CLINICAL INTERVENTIONS

The transactional approach forwarded above regarding parent–adolescent interactions has several implications for clinical interventions. Specifically, this perspective emphasizes the importance of working clinically with parents and adolescents together. This perspective builds upon decades of successful clinical work that has emphasized complex and reciprocal processes involved in family interactions that contribute to adaptation (Alexander, 1973; Patterson & Stouthamer-Loeber, 1984). Teaching an adolescent how to properly express his autonomy without teaching the parent how to appropriately affirm the autonomous behavior may result in the eventual extinction of the adolescent's autonomous acts. However, working with an adolescent on how to express appropriate autonomy while simultaneously helping the adolescent's parent to appropriately affirm the autonomous expression makes it more probable that the adaptive behaviors will continue. Similar transactional processes should be emphasized for reciprocal controlling and submissive behaviors as well as for facilitating warmth in parent–adolescent interactions. As mentioned earlier, the influence of culture, ethnicity, and socioeconomic status should carefully be considered when working clinically as a moderator of the relationships between parent–adolescent interactions and outcomes.

Furthermore, although SASB is a valuable research tool, the model is also an important clinical tool that allows for clinicians to conceptualize case formulations derived from interpersonal behavioral coding (Benjamin, 1982). SASB coding accomplishes this by providing links to clinical interventions that are specific and observable. SASB coding provides details regarding where a parent–adolescent relationship is currently at on the interpersonal circumplex, and thus allows the clinician to hone in on the specific dimensions of behavior that need work to reach optimal processes. For example, a parent–adolescent relationship may be characterized by complementary positions of extreme amounts of autonomy assertion by the adolescent and freeing of that autonomy by the parent (2–1 and 1–1 behaviors on the model). Coding this process of autonomy through SASB would tell a clinician specifically that a therapeutic goal may include honing in on helping the parent and adolescent add warmth and moderation to the autonomy behaviors so that their autonomy would be characterized as disclosing and affirming (2–2 and 1–2 behaviors on the model). Additionally, progress toward therapeutic goals is testable through future coding of the parent–adolescent relationship. That is, as a result of specific and observable therapeutic goals informed by SASB, the clinician would be able to continually examine progress in the case by

referring specifically back to where the parent and adolescent relationship is functioning on the interpersonal circumplex.

Additionally, while SASB complementarity ideas forward a transactional view of coding parent–adolescent interactions, they also provide theory regarding potentially problematic interpersonal relationships with others in the adolescent's or parent's life (Benjamin, 2003). Specifically, complementarity theory asserts that the patterns of relating to one another formed in parent–child relationships often transfer themselves over into patterns of relating to others in separate contexts. For example, SASB theory would state that an older adolescent who is having extreme difficulty asserting himself with his friends, and thus has submitted (2–5 behavior on the model) to using drugs in order to be accepted, may be reenacting an extreme control-submit process that characterizes his relationship with his father. Furthermore, a parent who chronically submits to his adolescent's demands for money (2–5 on the model) may be reenacting an extreme control-submit process that was present in his own relationship with his father. Therefore, complementarity theory is not only a useful research tool, but provides insight into why specific interaction processes may be occurring, and how they may be the target of the intervention.

LIMITATIONS OF THE SASB

Although SASB is a valuable tool that can help researchers and clinicians define and organize optimal parent–adolescent transactional processes, like other coding systems, it is not without its limitations. First, SASB is a microanalytic coding system that requires coders to code each utterance spoken. This coding approach, as opposed to macro-level coding systems that summarize behavior across an entire interaction, is time consuming to code, takes a substantial amount of time to establish reliability, and may not be as efficient as macro-level coding depending upon one's research question. Macro-coding could include global ratings of how well the parent and adolescent brainstormed, negotiated, compromised, collaborated and may be useful in exploring relationships between parent–adolescent interactions and adolescent outcomes. However, these macro-based coding systems do not allow for the researcher to utilize temporal data analysis techniques that allow for specific tests of moment-to-moment transactions and their relations to outcomes.

Additionally, while there are several studies that relate SASB coding to concurrent well-being in adolescents (Florsheim, et al., 1996, 1998; Humphrey, 1987, 1989), research is only now underway that examines the predictive validity of SASB longitudinally with an adolescent sample (P. Florsheim, personal communication, November 27, 2006). Therefore, many of the coding systems discussed within the current review (Allen, et al., 1994a; Hauser *et al.*, 1987; Melby and Conger, 2001) likely have more longitudinal evidence in predicting outcomes. Furthermore, the SASB system is process-based and therefore contains little information regarding the content of parent–adolescent interactions. Therefore, if a researcher or clinician is interested primarily in "what" parents and adolescents discuss, rather than "how" they discuss it, SASB is not the appropriate tool.

SUMMARY AND CONCLUSIONS

During the past 20 years researchers have responded to modern conceptualizations of adolescent development by emphasizing the importance of autonomy, control, and interpersonal warmth vs. hostility in parent–adolescent interactions. From this research it is clear that the ways in which parents and their adolescents interact is a key correlate of adolescent adaptation. Generally, parents and adolescents who engage in friendly autonomous processes that display and encourage independence, and who provide appropriate levels of control characterized by warmth and guidance have adolescents who experience positive adaptation. The relationships between parent and adolescent behaviors are posited by many to be sequentially and reciprocally related. The SASB model was forwarded as one way to explore how these reciprocal interactions may take place, how they may change across adolescence, and how they may relate to parental well being. The SASB model posits that optimal collaboration includes friendly levels of moderate autonomy and control processes coupled with the ability to facilitate reciprocal sequences, and change detrimental sequences, all while maintaining high levels of mutual engagement.

Collaboration was advanced as a metaphor for understanding a transactional model of parent–adolescent interactions by emphasizing a process in which each member's behaviors reciprocally relate to the behaviors and outcomes of all within the social network. Collaboration emphasizes mutual

engagement, negotiation, brainstorming, and working as a team as important aspects of adaptive parent–adolescent interactions (Meegan & Berg, 2002; Rogoff, 1998). Collaboration is a process that is beneficial for parents and adolescents, rather than just adolescents. Although, collaborative problem-solving research largely focuses on whether "two heads are better than one" rather than how interpersonally two heads can produce better outcomes, defining optimal collaboration from an interpersonal perspective will be beneficial for the collaborative literature as well (see also Berg, et al., 2005). More research is needed that will help parents and adolescents identify what healthy collaboration is composed of interpersonally, and how they may work toward achieving a transactional process that is beneficial for the entire social network (see Steinberg, 2001; Steinberg & Silk, 2002, for specific calls for this research need).

The SASB model was offered as a theoretically based interpersonal system that is sensitive to the relevant issues of adolescence and has the ability to organize interpersonally what optimal collaboration looks like. Although several coding systems exist and have been quite successful in identifying components of healthy interactions, these systems have their limitations and have not ascertained the unique impact of certain dimensions of behavior. Further, existing research in this area does not typically include specific descriptive predictions regarding interpersonal sequences and reciprocity in moment-to-moment exchanges. The SASB system was offered as a transactional approach that focuses on analyzing the dependency of parent and adolescent behaviors on one another, and subsequently utilizing the dependency of the parent and adolescent behaviors to predict outcomes of parents and adolescents. This dependency approach emphasizes the importance of understanding acts of autonomy, control, and interpersonal warmth as being reciprocally related to one another, rather than occurring as individual acts. Such an approach will require the use of new statistical tools that can capture the dyad as the unit of analysis (e.g., Kenney's actor-partner model, 1990 and multivariate hierarchical linear modeling with application to matched pairs, Raudenbush, et al., 1995).

As researchers and clinicians continue to explore the complexities of parent–adolescent interactions, a theoretical shift toward understanding a bi-directional model of interpersonal processes is warranted. Parents and adolescents need to know what optimal interactions look like interpersonally and how these processes might change across adolescence. A theoretical shift emphasizing a reciprocal collaborative process will facilitate a more comprehensive picture regarding how parents and adolescents may both benefit from healthy interactions.

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