

Autonomy as Competence in 2-Year-Olds: Maternal Correlates of Child Defiance, Compliance, and Self-Assertion

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Ninety-five mothers and their 2-year-old children participated in a study of maternal control strategies and child autonomy as measured by children's defiant, compliant, and self-assertive behavior. Mothers and children were observed in a laboratory compliance task and at home at dinnertime. Compliance and self-assertion were associated with mothers' use of less powerful methods of control. Defiance loaded on a different factor than either compliance or self-assertion and was associated with more power-assertive control strategies. In situations in which the child had said "no" to the mother, maternal negative control was more likely than any other control strategy to elicit defiance in both settings. The strategy of combining control with guidance was the most likely to elicit compliance and the least likely to elicit defiance in both settings. These associations are discussed in terms of reciprocity and power sharing in relationships and their congruence with Baumrind's (1973) pattern of authoritative parenting.

An important facet of competence in 2-year-olds is the way in which they negotiate their independence in the context of the requirements of their social world. This ability to "achieve one's goals without violating the integrity of the goals of the other" (Bronson, 1974, p.280) is likely a major aspect of the development of social competence at any age. It may have special significance during toddlerhood, however, because the way in which the issue is resolved during this period of development has the potential for influencing what occurs as development progresses. Erikson (1963) referred to the resolution of this issue in terms of autonomy versus shame and doubt and linked the latter outcomes to parental overcontrol. At issue in the present article is the way in which the strategies parents use to control their children's behavior and the degree of reciprocity in their relations contribute to the development of autonomy in their 2-year-olds. We begin with a consideration of self-assertive, de-

fiant, and compliant behaviors as indicators of competent, autonomous functioning or the lack thereof.

Autonomy as Expressed in Self-Assertion, Noncompliance, and Compliance

One indication of a child's growing autonomy is the ability and willingness to say "no" to parents. Spitz (1957) recognized the significance of negation, describing it as "beyond doubt the most spectacular intellectual and semantic achievement during early childhood" (p.99). He identified the acquisition of "no" as an indicator of a new level of autonomy that accompanies the child's increasing awareness of the "other" and the "self" during the second half of the 2nd year of life.

Spitz (1957) noted, moreover, that with the child's assertion, the process of accommodation and negotiation begins. In response to the child's assertion, the mother may alter her approach, perhaps explaining to the child why he or she should comply or attempting to persuade him or her to do so. She may attempt to engage him or her in the task by making it attractive, or she may abandon the goal in favor of one that the child is more likely to accept. The child may respond by complying or by rejecting the mother's overtures with another "no," in which case the mother may persist in the first response or try another.

We believe that saying "no," which we refer to as self-assertion, is conceptually as well as practically distinct from defiance, another form of resistance to parental goals, but both less competent and less autonomous. Wenar (1982) referred to defiance as "negativism for its own sake" and distinguished it from "realistic negativism" (i.e., self-assertion) by virtue of the intensity and persistence of the child's behavior. The following example illustrates this distinction: A mother tells her child to pick up toys and put them in a box. If the child says, "No, want to play," he would be asserting himself. If instead he takes more toys out of the basket or if he heaves the toy across the room, he

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would be defying her. In the latter exchange, the child's behavior is oriented first and foremost toward resisting the adult; playing with the toy is a secondary concern. It is in this sense that defiance is less autonomous than simple self-assertion.

Studies that have distinguished verbal refusals from more defiant forms of behavior support the view that self-assertion is associated with competence in young children, whereas defiance is not. For example, Kuczynski, Kochanska, Radke-Yarrow, and Girnius-Brown (1987) reported that children who said "no" more frequently engaged in more negotiation with their mothers; Vaughn, Kopp, and Krakow (1984) found that children who said "no" more often were more developmentally advanced than other children; and Matas, Arend, and Sroufe (1978) observed that these children were more likely to be securely attached. In contrast, several studies have revealed that more defiant behavior is associated with abuse and insecure attachments (Londerville & Main, 1981; Matas et al., 1978; Trickett & Kuczynski, 1986).

A child's behavior is considered compliant when it follows and is congruent with a parent's directive or request. Compliance is often considered a desirable socialization goal and a sign of the child's growing maturity (Kopp, 1982). Whether a compliant child is also autonomous is less readily apparent. If the mother's and the child's goals coincide (e.g., if a mother tells a child to do something he is already inclined to do; or if, as a result of a process of negotiation/accommodation, the child willingly engages in behavior that allows the mother to achieve her goal), compliance could be considered autonomous behavior. On the other hand, if a child complies with a parent's request out of fear of what will happen if he or she does not, as abused children sometimes do (Crittenden, 1988), the compliance could not be considered autonomous behavior. Thus, to infer autonomy from compliant behavior, we need to know the conditions under which the compliance occurs.

In sum, compliance, self-assertion, and defiance appear to be distinct dimensions of child behavior that differ in the extent to which they reflect the child's ability to function competently and autonomously. We consider them separately, therefore, in evaluating the literature on child-rearing practices.

Child-Rearing Practices and Autonomy

Erikson (1963) suggested that "the gradual and well-guided experience of the autonomy of free choice" (p. 252) will contribute to the child's autonomy, whereas "overcontrol" is likely to result in the opposite outcome. The extant research is roughly consistent with what we would anticipate from Erikson's description, especially with respect to the harmful effects of overcontrol. Defiant behavior is associated with parental control strategies that are highly power-assertive, such as maternal anger, harshness, and criticism, and excessive control characterized in particular by physical intervention (Crockenberg, 1987; Kuczynski, 1984; Kuczynski et al., 1987; Londerville & Main, 1981; Lytton, 1980; Oldershaw, Walters, & Hall, 1986; Power & Chapieski, 1986; Trickett & Kuczynski, 1986).

Whether moderate power assertion, such as commands, are also associated with defiance is uncertain. Commands were included in composite measures of power assertion in studies by Feldman and Sarnat (1986), Kuczynski (1984), and Kuc-

zynski et al. (1987); in each of these studies, the composite was associated with more frequent defiance. Moreover, commands alone were associated with defiance in the Kuczynski et al. (1987) study, but not in Londerville and Main's (1981) work.

From our conceptual analysis of self-assertion, we would expect mothers' use of less power-assertive methods of control to be associated with the frequency of their children's self-assertion, and indeed the results of the only study that has considered this association were consistent with this expectation. Kuczynski et al. (1987) reported that "indirect commands" (suggestions, requests, polite commands), but not direct commands, were associated with more frequent refusals considered separately from direct defiance.

Low to moderate power assertion is typically associated with greater child compliance as well, but it is unclear which specific control strategies are effective under what circumstances. Four studies have considered the effectiveness of offering suggestions or reasons in eliciting compliance. Kuczynski (1984) and Lytton (1980) found a positive association; Lytton further observed that suggestions resulted in more compliance than did commands and prohibitions. Whether reasoning is an especially effective method of gaining compliance remains to be determined. In contrast, Schaffer & Crook (1980) reported that direct commands were more likely than "indirect commands" to result in compliance, whereas Kuczynski et al. (1987) failed to find a significant association between either type of control strategy and compliance. Three additional studies considered only commands, with mixed results. Londerville and Main (1981) and Stayton, Hogan, and Ainsworth (1971) found no association between the frequency of commands and child compliance, whereas Parpal and Maccoby (1985) reported a positive association between "directives" (which included both orders and suggestions) and compliance.

Interpretation of these studies is further complicated by the finding that parents often combine control strategies (Grusec & Kuczynski, 1980; Holden, 1983). To our knowledge, only Lytton (1980) has tested the relative effectiveness of combined control strategies in eliciting compliance. He reported that adding negative control to suggestions or commands diminished their effectiveness and that joining positive action (smiling and praise) with commands increased their effectiveness in eliciting compliance. Moreover, to the extent that parents combine control strategies, the results of studies that have considered strategies singly are suspect because of multicollinearity; co-occurring strategies may contribute to or account for the effects attributed to single control strategies.

Whether commands are more effective than requests or reasons in eliciting compliance may also depend on the situation in which they occur. Lytton (1980) notes, for example, that mothers issued suggestions more frequently in playful exchanges, whereas imperatives were used more often in limit-setting contexts. As a consequence, any apparent advantage of so-called "indirect" strategies over more direct ones may be an artifact of a differential willingness of the child to comply in certain contexts. To determine the relative effectiveness of strategies that differ in the amount of power used and autonomy granted, it is therefore essential that willingness to comply as a function of task attractiveness be controlled in some way.

We have argued that a child's propensity to comply (and to

avoid defiance) may be affected by the extent to which the mother's control strategies allow the child a degree of autonomy. Maccoby and Martin (1983) suggested further that children are more likely to comply if they perceive that they are participating in a reciprocal relationship. According to this view, the child is willing to accept the influence attempt of a partner because the partner has accepted the influence attempts of the child. Parpal and Maccoby (1985) reported results consistent with this hypothesis. Children whose mothers were instructed to allow the child to control their interaction during a play period were subsequently more likely to comply when their mothers asked them to pick up the toys. Moreover, the effect of maternal responsiveness on child compliance was not an artifact of greater maternal warmth. It is possible, of course, that responsive mothers also use less power-assertive methods of obtaining compliance; this possibility would need to be considered in any nonexperimental study.

Direction of Influence

Implicit in the foregoing discussion is the assumption that any association between parent behavior and child compliance or defiance reflects the parent's influence on the child. It is possible, however, that the child's defiance may elicit more powerful responses from the mother and that any correlation between maternal and child behavior may partly reflect this influence. Of the studies cited earlier, only Parpal and Maccoby (1985) controlled for child effects by using an experimental design in which children were randomly assigned to condition and mothers were trained to interact with their children in specific ways. In a nonexperimental study, some type of sequential analysis would have to be used to clearly establish the parent's role in the interaction. To date, only Lytton (1980) has adopted such an approach.

In the present study, we (a) attempt to replicate the observed association between the use of highly power-assertive control strategies and defiance and to extend previous research by determining the extent to which moderately assertive approaches (e.g., commands/directives) are also associated with defiance when it is distinguished from self-assertion; (b) investigate whether certain types of maternal control strategies (e.g., directives vs. suggestions or explanations) are more likely to result in compliance than others, either alone or in combination, and whether associations vary as a function of the context in which mothers and children are observed (a standardized compliance task in which the desired behavior is specified, and in a home setting); (c) investigate the mother's general responsiveness to the child as a possible contributor to child compliance independently of her use of specific control strategies; (d) test the assumption that self-assertion and defiance are distinct forms of child noncompliance associated with different patterns of maternal behavior—self-assertion is conceptualized here as an autonomous behavior, and we would expect it to be associated with less power-assertive control strategies; and (e) address the issue of the causal influence of maternal control strategies on child compliance and defiance by examining sequences of behavior that follow a child's self-assertion.

Method

Subjects

Ninety-five mothers and their 2-year-old children (age range = 23 to 26 months) of an original sample of 105 were included in the study. Subjects were recruited in one of three ways: (a) through fliers distributed to clients of human services and child-care programs (10%), (b) through letters sent to mothers of children of the appropriate age who had been seen as patients at a large medical center serving primarily low-income families (65%), or (c) through a pool of mothers and children who had been identified from birth records as potential subjects in a previous, unrelated study (25%). Mothers were offered \$20 for their participation.

Mothers ranged in age from 18 to 41 years. The majority of mothers were White; 6 were Black, 6 were Hispanic, 4 were Asian, and 2 mothers described themselves as "other" or failed to declare ethnicity. Six mothers had not completed high school, 16 had completed high school, 31 had attended some college, 16 had completed 4-year degrees, 16 had attended graduate school, and 10 had postgraduate or professional degrees. Forty of the mothers were employed 10 hr per week or more, and 55 mothers were not employed. Family income ranged from under \$5,000 to more than \$80,000 per year (Mdn = \$25,000–\$29,999). Fourteen mothers were single parents. There were 56 male and 39 female children in the study; 31 of the children were only children, and 64 had one or more siblings.

Ten mothers from the original 105 families were excluded from all analyses: 7 for whom home data could not be collected and 3 who failed to meet the criteria as either employed or unemployed in the larger study (e.g., they worked at home). Two families on whom full data were collected were included only in the analysis of laboratory data; in one instance, the child became ill during the home visit, and, in the other, the recording equipment malfunctioned. Thus, 95 mother-child dyads were included in the laboratory data, but only 93 of those were included in the analyses of the home data.

Procedure

Mothers and children were seen on two occasions: in a laboratory setting and at home. During the laboratory visit, the mother was interviewed and the behavior of the mother and child was recorded in three contexts: a free-play situation, a maternal interview, and a compliance task. Only the home data and the data from the compliance task are included in the present study. Different research assistants collected data in the laboratory and at home.

Laboratory observation. Mothers and children came to the laboratory at a time judged by the mother to be optimal for the child. Following a 6-min free-play period and a 35-min maternal interview during which many toys were available to the child, the mother was instructed to have the child pick up all the toys in the playroom and put them in a large basket. No instructions were given about how this should be done. If a mother asked if she could help pick up the toys, she was told "It's all right to help, but we'd like it to be _____'s task." The mother and child were left alone in the room during the clean-up task, and their interaction was videotaped through a one-way mirror.

The compliance task lasted for a maximum of 15 min. Within that limit, however, duration varied from 6 to 15 min, depending on how quickly the clean-up was completed.

Home observation. Children were observed interacting with their mothers and other family members during a home visit that followed the laboratory visit within 1 month in all but a few cases. The observations were scheduled to coincide with dinner preparation and dinner on the assumption that this was a time during which opportunities for mothers to exercise control would be frequent. Verbal interactions between the child and other family members were recorded on audio-

tape, and their nonverbal behavior was recorded simultaneously into a separate channel by one of three trained observers. The observer also provided information necessary to ensure the correct interpretation of the audio recording, for example, describing the force or anger with which a mother enforced her command or identifying the participants in an interaction. Home visits ranged in duration from 40 to 90 min, depending on how long it took the family to complete their dinnertime routine.

Coding Procedures

Videotapes of the laboratory compliance task were transcribed verbatim to provide a complete running record of the mother-child interaction. One of two trained research assistants then coded the transcribed behaviors using event sampling while viewing the videotape and transcript simultaneously. Maternal and child behaviors were coded using a previously developed, comprehensive coding system for describing mother-toddler interactions (Crockenberg, 1987). The coding system emphasized, but was not limited to, maternal control strategies and children's defiance, compliance, and self-assertion. Codes were exhaustive and mutually exclusive, with the exception of affective codes such as *anger* or *annoyance*, which could be assigned simultaneously with codes for specific maternal behaviors, such as *tells* or *suggests/asks*, or for child behaviors, such as *self-assertion* or *compliance*.

Audiotapes of the home observations were transcribed and coded, using event sampling, in a manner similar to that described for the laboratory data. The transcribed behavior records were coded by two research assistants, one of whom had also coded the laboratory data a year earlier. Different assistants coded the laboratory and home data for each family in all but a few cases. Minor modifications in the codes used with the laboratory data were made to better capture the mother-child interactions occurring in the home setting (e.g., a maternal category of *routine care* and child categories of *makes big mess or noise*, *negotiation*, *asks for attention*, and *asks for information* were added).

Raters questioned any behaviors they were unsure how to code (e.g., *anger* vs. *annoyance*), and percentage agreement reliability (agreements divided by total agreements plus disagreements)¹ was determined separately for questioned and unquestioned codings. For the laboratory data, protocols were coded by two raters until average percent agreement was greater than 80% on the unquestioned codes (approximately 90% of the total number of codes) calculated separately for all maternal and all child behaviors. The reliability for questioned codings was invariably lower than that for unquestioned codings (range = 33% to 80%). To correct for this potential source of error, raters continued to question behaviors that they were unsure how to code throughout the coding process, and they discussed and jointly coded the behaviors in question at weekly meetings. They also questioned all affective behaviors (e.g., maternal anger and annoyance, child anger, aggression, and frustration) regardless of their certainty, because these behaviors occurred relatively infrequently and were central to our conceptualization and coding procedures. The procedure was the same for the home data, and average percent agreement was greater than 85% on the unquestioned mother and child codings. Percent agreement for all behaviors included in the maternal composite measures was greater than .75. Percent agreement for the three primary child variables .75 and .91 for defiance; .98 and .85 for compliance; and .96 and .75 for self-assertion in the home and laboratory settings, respectively.

Data Reduction and Preliminary Analyses

Maternal behavior. To reduce the number of maternal variables and to develop conceptually meaningful parent measures, frequencies of specific maternal behaviors were summed to create the four compos-

ites defined in Table 1: *negative control*, *control*, *guidance*, and *responds*. The first three of these represent varying levels of parental power assertion: high-power assertion (*negative control*), moderate-power assertion (*control*), and low-power assertion (*guidance*). The fourth composite, *responds*, reflects the extent to which the mother allowed the child to direct their verbal interaction. The assignment of maternal behaviors to these composites was guided by considerations of face validity (e.g., a threat is more power-assertive than a suggestion; telling is more power-assertive than suggesting) and by distinctions that other researchers have made between power assertion, direct commands, and indirect commands. In some cases, a specific behavior could be assigned to either of two composites depending on its affective quality. Thus, for example, when behaviors characteristic of control (e.g., tells) or of guidance (e.g., suggests/asks) occurred with anger or annoyance, they were considered instances of negative control. Several maternal behaviors (e.g., asks if needs help, mother stands/sits next to child) that correlated significantly and highly with behaviors included a priori in the guidance cluster were added to the cluster to create the final composite. Correlations among the variables included in the composites were all high (greater than .50). In some instances, however, correlations between behaviors included in different composites were also significant, indicating, as we anticipated, that mothers' use of control strategies covaries.

Tests for skewness were calculated for each composite. Negative control (in the laboratory and in the home) had a skew level greater than 3.0, and this was corrected in the analyses using a cube-root transformation. Because total time observed varied from subject to subject and across settings, time observed was regressed on negative control, control, guidance, and responds, and residuals were calculated for use in all subsequent analyses. These "corrected" scores are similar to calculations of rate used by Bakeman and Gottman, 1986, but have the advantage of completely removing the correlation with time observed (Cohen & Cohen, 1983, pp. 72-74).

Pearson correlations among the four maternal composite variables are reported in Table 2. In both settings, negative control and control correlated positively and significantly, as did guidance and responds. We did not combine these pairs of variables, however, because one purpose of the study was to determine whether control strategies that varied on their face in degree of power assertion would be differentially associated with child behavior. In the laboratory setting, control correlated negatively with responds, whereas in the home setting the association of control with both guidance and responds was positive. Of the maternal behaviors, only control and negative control were significantly stable between the laboratory and home assessments.

Child behavior. The three categories of child behavior (*defiance*, *compliance*, and *self-assertion*) are also defined in Table 1. Of these, only defiance is a composite; it includes any response to the mother's control attempt that intensifies the original behavior or that is directly opposite to what the mother wants, and includes all expressions of anger and aggression toward the mother. These behaviors were combined on conceptual grounds; all indicated strong resistance focused on the mother. Low frequencies of anger and aggression precluded confirmatory analyses of the composite. Self-assertion included all instances in which the child indicated his unwillingness to do what the

¹ We have used percent agreement rather than kappa coefficients in calculating reliability because our statistical consultant is convinced that there are too many questionable assumptions involved in their application to event-sampled data. Although Bakeman and Gottman (1986) wrote about using kappa for event-coded data, they stated that "our preference is for computing kappas using a time interval as the unit, but this requires timing onsets and offsets, timing pattern changes, or coding intervals directly" (p.89). We did none of these things.

Table 1
Definitions of Maternal and Child Behaviors and Behavior Clusters

Behavior	Definition	Laboratory		Home	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Maternal					
Negative control	Control that is intrusive on child's person or conveys negative feeling toward child; includes anger, annoyance (alone or combined with other behavior; e.g., tells), criticize, nonempathic behavior, force/restrict ^a , undermine, punish, spank/slap, threaten	6.56	11.00	5.11	7.41
Control	Includes tells (a directive or prohibition providing no choice) and bribe (a reward offered contingent on compliance)	45.76	38.01	34.84	28.69
Guidance	Attempts to direct child's behavior nonintrusively; includes ask if needs help, persuades/explains, suggest/ask, stand or sit next to, verbal assist ^b	76.96	43.83	55.94	37.26
Response	Response to child's verbal or nonverbal cue	20.40	13.71	34.70	23.90
Child					
Compliance	Behavior congruent with direction/request; in lab, puts toy away in basket	24.74	18.65	9.27	6.88
Self-assertion	Responds with "no" to direction/request	5.42	9.48	5.76	5.60
Defiance	Does the opposite, intensifies behavior, or expresses anger or aggression in response to direction/request	5.38	7.80	2.98	3.36

Note. Means and standard deviations are derived from raw frequencies.

^a In the home setting, this behavior also included negative physical assistance that could not be reliably distinguished from forces/restricts from audiotape. ^b In the laboratory setting, this behavior also included compromise

mother wanted by saying "no" or "don't want to" or by shaking his or her head in response to the mother's attempt to control his or her behavior, with two exceptions: Self-assertion that accompanied non-compliance, anger, or aggression was included only in the defiance composite; "no" in response to a genuine question (e.g., "Don't you like that dolly?" or "Do you want a hot dog?") was coded as *communication negative* in the laboratory and as "no" *communication* in the home.

In both settings, compliance referred to child behavior that was consistent with what the mother wanted the child to do. In the home setting, compliance was the child's affirmative response to any maternal control attempt. To distinguish compliance from the child's independent decision to engage in the behavior, the child's compliant behavior had to occur within a reasonable time of the control attempt. Coders used the time elapsed since the command/request was made and the presence of intervening maternal or child behavior to judge

what constituted a "reasonable time." In the laboratory setting, compliance was coded only if a child put a toy in the basket. This allowed us to determine the relative effectiveness of different control strategies when the goal was held constant. Moreover, the act of putting a toy in the basket was coded as compliance regardless of its proximity to a specific control attempt by the mother, on the assumptions that (a) the goal was understood by the child because all mothers made numerous attempts to direct their child's behavior to this end and (b) children would not have spontaneously put the toys in the basket.

As with the four maternal variables, the three child variables (defiance, compliance, and self-assertion) were corrected for variations in time observed by computing residuals. These variables were also tested for skew, and in both settings defiance and self-assertion were corrected using a cube-root transformation.

As shown in Table 3, only child compliance was relatively stable across settings. In addition, defiance and self-assertion were correlated in both settings. The moderate degree of association between defiance and self-assertion indicates that the two are not identical behaviors. The fact that they correlated, however, challenged our conceptualization of self-assertion and defiance as distinct constructs representing more autonomous and less competent behavior, respectively.

In an effort to further justify this conceptualization, all of the coded child behaviors that occurred with sufficient frequency were subjected to a principal-components analysis with varimax rotation, with the number of factors for extraction unspecified. Separate analyses were run for the home and laboratory data. For the home data, 12 behaviors were factored: asks for help, asks for information, compliance, positive communication, cries, frustration, ignores mother, makes mess or noise, self-assertion, negotiation, "no" communication, and defiance. For the laboratory data, fewer variables were coded, and only eight were included in the analyses: asks for help, compliance, positive communication, cries, frustration, ignores request/directive, defiance com-

Table 2
Zero-Order (Pearson) Correlations Among Maternal Variables in Laboratory and Home Settings

Variable	1	2	3	4
1. Negative control	.32**	.67***	-.08	-.14
2. Control	.61***	.34***	-.20	-.32**
3. Guidance	.21*	.36***	.17	.46***
4. Responds	.05	.28**	.65***	.03

Note. Correlations for laboratory behaviors ($n = 95$) are presented above the diagonal, those for home behaviors ($n = 93$) below the diagonal. Cross-setting stability correlations are reported on the diagonal.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

Table 3
Zero-Order (Pearson) Correlations Among Child Variables in Laboratory and Home Settings

Variable	1	2	3
1. Defiance	-.08	-.02	.43**
2. Compliance	.21*	.35**	-.09
3. Self-assertion	.36**	.20	-.01

Note. Correlations for laboratory behaviors ($n = 95$) are presented above the diagonal, those for home behaviors ($n = 93$) below the diagonal. Cross-setting stability correlations are reported on the diagonal.

* $p < .05$, two-tailed. ** $p < .001$, two-tailed.

posite, and self-assertion. The results of these analyses are presented in Table 4.

For the home data, this procedure generated three factors. Compliance and self-assertion loaded on the first factor along with other child behaviors such as positive communication. Defiance loaded on the third factor along with child behaviors such as makes big mess or noise and ignores mother. The three child behaviors (defiance, compliance, and self-assertion) had factor loadings ranging from $-.04$ to $.30$ on the factors other than the one on which they loaded most highly. For the laboratory data, four factors were generated. Defiance loaded on the first and third factors, compliance loaded on the second factor, and self-assertion loaded on the fourth factor. Factor loadings for these variables on the other factors were uniformly low, ranging from $-.25$ to $.20$. That defiance and self-assertion loaded on different factors in both settings supported our contention that self-assertion and defiance are distinct aspects of child behavior. Moreover, the other behaviors with which self-assertion, compliance, and defiance loaded are consistent with the conceptualization of self-assertion and compliance as more competent behaviors than defiance. The results of subsequent analyses are consistent with this inference.

Results

Zero-Order and Partial Correlations Between Maternal and Child Behaviors

Correlational analyses were used to determine whether maternal control strategies (negative control, control, guidance, responds) were associated with child behaviors (defiance, compliance, and self-assertion) in the ways we had hypothesized and whether these maternal and child behaviors varied as a function of the sex of the child or the mother's education. Both zero-order and partial correlations were calculated. The latter removed variance associated with the child's sex, mother's education, and all other maternal composite variables to capture the unique effect of each. The zero-order and partial correlations between maternal and child behaviors are reported in Table 5.

In addition, hierarchical regression was used to investigate the possibility that maternal control strategies might be differentially associated with child behavior as a function of the child's sex or the mother's education in view of evidence that the mother's behavior varied as a function of those variables. (More educated mothers used more guidance, $r = .28$, $p < .01$, and $r = .18$, $p < .10$, and were more responsive to their children's cues, $r = .27$, $p < .01$, and $r = .21$, $p < .05$, than less educated mothers in the home and laboratory settings, respectively; they used less

negative control and less control in the laboratory, $r = -.33$ and $-.31$, respectively, $ps < .005$. In the laboratory setting only, there was a trend toward mothers' using more negative control and more control with boys, $r = -.19$ and $-.17$, respectively, $ps < .10$, and more guidance with girls, $r = .19$, $p < .10$.) In these analyses, the child's sex, the mother's education, and the four maternal composites (residuals) were entered simultaneously in Step 1. Eight interaction variables (each maternal behavior with child sex and with maternal education) were then entered in Step 2. Each interaction variable was examined first as if it were the sole variable entered in Step 2 and again with all other interaction terms entered simultaneously in that step. Separate analyses were carried out for the home and laboratory variables respectively.

Defiance. In both laboratory and home settings, defiance was more frequent among mothers who used high levels of negative control and control. At home, defiance was also reliably associated with maternal responds and guidance, although less strongly so. When all of the other maternal behaviors were partialled out, however, only negative control was significantly associated with defiance in both the laboratory and home; control was also associated with defiance at home. In the home, there was only a trend toward boys' being more defiant than girls ($p < .10$), and there were no significant interactions with child's sex or mother's education.

Compliance. Zero-order correlations indicated that in the laboratory, only control correlated with compliance. In the home, compliance correlated significantly with maternal responsiveness and with all three control strategies, although the correlations with guidance and control were significantly stronger than the correlations with negative control. When all other maternal behaviors were partialled out, however, control was the only maternal behavior associated with compliance in

Table 4
Factor Loadings for Child Behavior in the Laboratory and at Home

Home		Laboratory	
Factor 1: Competence		Factor 1: Emotionality	
Asks for help	.51	Cries	.76
Asks for information	.77	Frustration	.79
Compliance ^a	.58	Defiance ^a	.53
Positive communication	.92	Factor 2: Compliance	
Self-assertion ^a	.57	Asks for help	.81
Negotiation	.57	Compliance ^a	.78
Factor 2: Emotionality		Factor 3: Defiance	
Cries	.83	Ignores request/directive	.70
Frustration	.57	Defiance ^a	.50
"No" communication	.82	Factor 4: Self-assertion	
Factor 3: Defiance		Positive communication	.40
Ignores request/directive	.63	Self-assertion ^a	.94
Makes mess/noise	.71		
Defiance ^a	.73		

Note. These analyses were performed before excluding subjects because of lack of home data and mixed employment status. $N = 105$ for the laboratory, 96 for the home. All behaviors that loaded .40 and above are reported.

^a Variable used in the primary analyses.

Table 5
Zero-Order and Partial Correlations Between Maternal and Child Behaviors in Laboratory and Home Settings

Behavior	Defiance				Compliance				Self-assertion			
	Laboratory		Home		Laboratory		Home		Laboratory		Home	
	<i>r</i>	<i>r_p</i>	<i>r</i>	<i>r_p</i>	<i>r</i>	<i>r_p</i>	<i>r</i>	<i>r_p</i>	<i>r</i>	<i>r_p</i>	<i>r</i>	<i>r_p</i>
Negative control	.48****	.34****	.50****	.29**	-.03	-.18	.32***	-.13	.31***	.18	.27**	.02
Control	.34***	.09	.54****	.25*	.16	.25*	.64****	.53****	.24*	.12	.40****	.23*
Guidance	.15	.19	.28***	.01	-.03	-.03	.53****	.35****	.23*	.22*	.40****	.24*
Responds	-.03	-.06	.27**	.14	.05	.12	.38****	-.02	.09	.04	.27***	.02

Note. All other maternal behaviors, mother's education, and child sex are partialled. $n = 95$ in the laboratory; $n = 93$ at home.
* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$. All one-tailed.

both settings, although guidance also predicted compliance at home.

There were no main effects of child's sex or mother's education in relation to child compliance. However, maternal education moderated the association between control and compliance in the laboratory, and the child's sex moderated the association between guidance and compliance in the home. High control in the laboratory was more effective in eliciting compliance for more highly educated than for less highly educated mothers, $F(14, 84) = 4.82, p < .05$. Frequent use of guidance at home was associated with compliance more frequently for girls than for boys, $F(10, 82) = 5.26, p < .025$, but the interaction was no longer significant when the other seven interactions were entered into the regression equation. Because of only minimally sufficient case-to-predictor ratios, these findings should be treated with caution. It is noteworthy, however, that the latter interaction does replicate Minton, Kagan, and Levine's (1971) finding that girls were more compliant than boys in response to moderate control.

Self-assertion. Self-assertion was significantly associated with guidance, control, and negative control in both laboratory and home settings and with responsiveness at home. When all other maternal behaviors were partialled out, however, only guidance significantly predicted self-assertion in both settings; control was significantly associated with self-assertion in the home only. There were no main effects of child's sex or mother's education and no significant interactions with either variable.

In sum, defiance was more frequent when mothers used power-assertive methods of control, and compliance and self-assertion were more frequent when mothers used less powerful approaches to influence child behavior. Moreover, the use of control in the form of directives and bribes appears to be at least as likely as requests, persuasion, and reasoning (guidance) to be associated with compliance. This latter finding is qualified, however, by the contingency data reported below.

Contingency Analyses

To investigate further whether mothers' use of more and less power-assertive control strategies contributed to differences in child defiant, compliant, and self-assertive behavior, we examined sequences of behavior following a child's self-assertion. We identified all instances of child self-assertion (the signal that an

opportunity for negotiation has occurred), the next child behavior to occur (defiance, compliance², or self-assertion), and all intervening maternal behaviors. We reasoned that if the mother's behavior affected what the child did next (escalated to defiance, repeated the self-assertion, or complied), defiance would be more frequent than other child behaviors following mothers' use of power-assertive strategies; compliance and self-assertion would be more frequent following less power-assertive strategies.

Mothers' responses to self-assertion were assigned to one of five categories: *negative control* (as defined in Table 1), *control* (as defined in Table 1), *suggests/asks, persuades/explains*, and *other*, a category that included all other maternal behaviors. Episodes in which "other" maternal behavior was the only intervening response constituted less than 5% of the total number of episodes in both laboratory and home settings and were not included in the calculation of means reported below. When mothers engaged in multiple behaviors during a single episode, all were coded, and this yielded several combinations of control strategies (e.g., control + suggests/asks; control + persuades/explains). Preliminary chi-square analyses revealed no differences in the distribution of child outcomes for suggests/asks relative to persuades/explains either singly or when either occurred with the other or with control, and these categories were therefore combined to yield two categories of control: *guidance*³ (suggests/asks, persuades/explains, or both) and *control + guidance*.

In the laboratory setting, 63 families contributed at least one "no" episode, $M = 5.60, SD = 8.13, \text{range} = 1 \text{ to } 48$. In the home setting, 84 families contributed at least one episode, $M = 4.60, SD = 4.28, \text{range} = 1 \text{ to } 23$. Because certain families contributed

² In the contingency analyses, compliance was not always to the mother's original request, but often to some variant thereof. Thus, a child who continued to talk when the mother said, "Eat your dinner," might comply when she modified the request to "How about two bites?" Compliance that was accompanied by crying was not included in these analyses in an effort to exclude instances of compliance that might have been in response to high pressure from the mother.

³ Because we were interested specifically in the distinction between persuades/explains (reasoning) and suggests/asks, we did not use all of the behaviors included in the original guidance cluster in the contingency analyses.

Table 6
*Comparisons of Probabilities of Occurrence of Each Child Behavior
 Following Each Maternal Control Strategy*

Maternal control	Child behavior					
	Defiance		Compliance		Self-assertion	
	Probability	Unconditional probability	Probability	Unconditional probability	Probability	Unconditional probability
Laboratory setting (<i>n</i> = 373 sequences)						
Negative control	16.62	.35	0.01	.30	10.43	.34
Control	0.29	.19	4.05	.22	5.25	.59
Guidance	1.53	.16	2.45	.24	6.14	.60
Control plus guidance	5.37	.12	23.97	.51	6.93	.37
Other	0.02	.22	5.49	.09	4.22	.70
Unconditional probabilities		.21		.31		.49
Home setting (<i>n</i> = 404 sequences)						
Negative control	9.37	.36	7.47	.19	0.00	.45
Control	1.25	.26	0.47	.31	0.08	.43
Guidance	2.88	.16	1.15	.29	6.19	.55
Control plus guidance	3.34	.15	13.82	.49	4.06	.35
Other	0.10	.19	0.84	.43	0.37	.38
Unconditional probabilities		.22		.34		.44

Note. The critical chi-square value is 3.84, $p < .05$. Associations that are significant in both settings are in boldface.

more data points to the analyses than others, the analyses that follow must be considered descriptive. These data were subjected to three types of analyses, each of which yielded somewhat different information.

Conditional probabilities. We first compared the conditional with the unconditional probabilities of each child behavior following each maternal control strategy to determine whether the probability of occurrence exceeded chance. Table 6 presents the unconditional and conditional probabilities and the chi-square comparisons of those probabilities for the laboratory and home data.

In an effort to highlight the consistent findings, only combinations of mother-child behavior that occurred more frequently than expected in both settings are noted here: Mothers' use of negative control increased child defiance; mothers' use of control plus guidance increased child compliance; and mothers' use of guidance increased child self-assertion above chance levels. These findings indicate that certain maternal behaviors increase the likelihood of certain child responses. The findings do not reveal, however, whether one combination occurs more frequently than another (e.g., whether defiance is more frequent following negative control than following control or whether compliance is more frequent following control plus guidance than following either guidance or control alone).

Comparisons of the relative effectiveness of each control strategy. To determine whether certain control strategies were more effective than others in eliciting defiant, compliant, or

self-assertive child behavior, we compared the relative frequencies of each child behavior for all possible pairs of maternal control strategies using chi-square analyses. The individual 2×2 analyses are reported in Table 7.

Comparisons that were consistent for both settings are summarized as follows: Defiance was more likely to occur relative to either compliance or self-assertion following negative control than following control plus guidance or guidance alone; and compliance was more likely to occur relative to either defiance or self-assertion following control plus guidance than following any other control strategy—it was more effective than either guidance or control used alone.

Nor did the sheer number of different strategies that mothers used in any episode account for the effectiveness of combining control and guidance. When the effects of control plus guidance on child behavior were compared with those of another combination strategy, negative control and control plus guidance, the former was significantly more effective than the latter in eliciting compliance and avoiding defiance in children, $\chi^2(1) = 12.56$, $p < .001$. The combined strategy of negative control plus control plus guidance was more likely, however, to result in compliance or self-assertion and less likely to result in defiance than negative control alone, $\chi^2(1) = 19.36$, $p < .005$.

In sum, the 2×2 chi-square analyses confirm and extend the results obtained by comparing the conditional and unconditional probabilities of occurrence of each mother-child combination. These analyses indicate that (a) although negative con-

Table 7
Relative Frequencies of Each Child Behavior for Each Pair of Maternal Control Strategies

Maternal control	Child behaviors		
	Defiance versus compliance	Defiance versus self-assertion	Compliance versus self-assertion
Laboratory setting			
Negative control versus control	0.60	10.63	5.71
Negative control versus guidance	1.91	13.42	4.88
Negative control versus control plus guidance	15.62	7.72	1.70
Control plus guidance versus control	4.50	0.02	15.10
Control plus guidance versus guidance	4.98	0.22	14.11
Control versus guidance	0.28	0.14	0.07
Home setting			
Negative control versus control	3.05	0.54	1.42
Negative control versus guidance	7.43	7.03	0.28
Negative control versus control plus guidance	16.57	2.30	8.74
Control plus guidance versus control	3.82*	0.74	3.97
Control plus guidance versus guidance	1.68	0.86	9.03
Control versus guidance	1.25	3.82	0.70

Note. The critical chi-square value is 3.84, $p < .05$, $df = 1$. Associations that are significant in both settings are in boldface.

* $p < .10$.

control increased the probability of child defiance more than some other maternal control strategies, notably those that include guidance, it was not consistently more likely than control alone to do so, and (b) control plus guidance was more likely than either control or guidance alone to increase the probability of compliance. Because certain families contributed more data points to the analyses than others, however, it is possible that these effects are attributable to only a few families. We tested this possibility in a third set of analyses.

Sign tests. Sign tests were calculated comparing the relative frequency of each child behavior (defiance, compliance, and self-assertion) separately for each pair of control strategies. For each individual family, we determined, for example, whether defiance occurred more frequently following negative control than following control, and this was repeated for each child behavior and for every possible pair of strategies. Each family contributed only a single data point to each comparison, and we could therefore have confidence that the findings were not an artifact of the interactions in a few families.

The results confirm those obtained in the 2×2 chi-square analyses. Negative control was more likely to elicit defiance than any other maternal control strategy (control plus guidance, $p < .05$, control, $p < .05$, and guidance, $p < .10$), but only in the home setting. Control plus guidance was more likely to elicit compliance than any other control strategy (control alone, guidance alone, or negative control) in both settings, $p < .01$ for all comparisons except for guidance in the laboratory ($p < .05$). Consistent with our predictions that self-assertion would occur more frequently when mothers used less power-assertive control strategies, children were more likely to say "no" when

mothers used either guidance or control than when they used negative control. This pattern of findings was apparent in both the home and the laboratory, and differences were significant at $p < .05$, except for guidance in the home ($p < .01$).

Discussion

We infer from these results that defiance, compliance, and self-assertion are distinct dimensions of child behavior. Not only does defiance load on a different factor than self-assertion or compliance, but maternal behavior is associated with each child behavior in ways that confirm this distinction. These findings are consistent, moreover, with our conceptualization of self-assertion as a more competent, autonomous form of non-compliance than defiant behavior. For the most part, these associations are consistent across home and laboratory settings and can be expected for that reason to be ecologically valid.

Specifically, power assertion in the form of negative control—threats, criticism, physical intervention, and anger—was associated with more defiance in the laboratory and at home, thereby confirming the results of earlier research. Moreover, the mother's use of negative control following the child's self-assertion was more likely than other strategies to result in defiance and was less likely to result in compliance or self-assertion, depending on context. This latter set of findings is consistent with the Brehms' theory of "psychological reactance"—that individuals will oppose threats to their freedom if the cost is not too high (Brehm & Brehm, 1981). We believe, moreover, that the results of the contingency analyses support an inference of mother-to-child influence. In these analyses, all

mothers were confronted with the same child behavior (a simple refusal), and their responses to this assertion predicted the children's subsequent behavior.

That mothers' reactions to "no" predicted children's subsequent behavior does not rule out the possibility that children influence their mothers as well. In the contingency analyses, other child behaviors preceding a child's "no" may have provided additional information to mothers and affected their reactions in subtle ways. It is possible, for example, that frequent self-assertion by the child contributed to growing frustration on the mother's part and hence to more power-assertive maternal responses. The sign test results indicating that negative control elicited defiance and that control plus guidance elicited compliance across families effectively rules out the possibility that the mother's use of negative control occurred primarily or exclusively in families in which a high frequency of "no" episodes was observed. Whether the probability of a highly power-assertive response from the mother increases with repeated child self-assertion warrants further study, however, as does the possibility that a child's defiance in response to a mother's use of negative control increases the likelihood that the mother will repeat her use of power assertion in an effort to regain control of the interaction.

Whether simple control in the form of directives and bribes also elicits defiance in children appears to depend on the context in which the control occurs. Control correlates with defiance at home, and it does so independently of negative control, as indicated by the results of the regression analysis. The contingency data suggest a possible explanation for this finding. Recall that when a mother issued a directive following a child's refusal, the child was less likely to comply and more likely to become defiant than when the directive was combined with additional attempts to guide the child's behavior in the desired direction. When a mother issues a directive following a child's self-assertion, she may be signaling her unwillingness to negotiate with or to accommodate him. If the child complies at this point, he does so in response to his mother's assertion of power and at the expense of his autonomy. He may be more likely, therefore, to repeat the refusal or to become defiant in that context.

The effectiveness of strategies that combine control and guidance for eliciting compliance after a child's initial refusal may also explain in part why simple control (but not negative control) correlated with compliance in both home and laboratory settings. Simply put, the effect of direct parental control on child behavior may depend on the child's interpretation of the parent's behavior based on the context in which it occurs. When control is combined with guidance, it provides the child with clear information about what the parent wants, but at the same time it invites power sharing. When a mother requests that a child do something (e.g., "Would you pick up the toys, please?") or attempts to persuade through reasoning (e.g., "You made the mess, so you need to clean it up"), there is an implicit recognition that the child is a person who is separate from the parent and who has needs and wishes of his own. We speculate that this recognition has two consequences. First, it keeps the negotiation going and allows the child to "decide" to adopt the mother's goal. Second, the mother's acknowledgment of the child's autonomy establishes a *quid pro quo*: Because mother

has been responsive to the child's needs, the child may be more willing to respond to hers. From Pappalardo and Maccoby's (1985) data, we know that 2-year-old children do respond reciprocally (are more likely to comply when their mothers have responded to them during a previous play session). Although in this study the mother's responsiveness was not associated with the child's compliance independently of her use of guidance, guidance as we defined it implies a responsiveness to the child that may account, in part, for its effectiveness.

That reasons were no more effective than suggestions in eliciting compliance after self-assertion provides indirect support for the view that guidance, which includes both behaviors, encourages compliance because it limits the threat to the child's autonomy (or freedom; Brehm & Brehm, 1981). Apparently, it is not the specific content of the message but the information that it provides about the balance of power in the mother-child relationship to which the 2-year-old child responds, at least in the immediate situation.

Guidance alone is not as effective, however, as guidance combined with control in eliciting compliance after a child's refusal. The most likely response to the strategies included in this category of control is self-assertion. This may occur because influence attempts that rely solely on requests and reasons may convey to the child that the balance of power lies not with the parent but with the child herself or himself. An invitation to comply (e.g., "Could you pick up the toys now?") appears to offer the child a choice, and the child may well feel free to turn it down in the absence of a clear expression of the parent's wishes. It may be this pattern of parental behavior that researchers in an earlier era referred to as *permissive* and linked to less competent child behavior.

The combination of maternal behaviors associated with self-assertion and compliance (control and guidance) are consistent with previous research indicating that some combinations of strategies increase the likelihood of compliance (Lytton, 1980). They are reminiscent, moreover, of Baumrind's (1973) authoritative pattern of parenting: Authoritative parents exerted firm parental control and made appropriate demands for maturity, but they also listened to what their children had to say and could be influenced by them. The present research brings into clearer relief what may be entailed in authoritative parenting as it is practiced with toddlers. Mothers who were effective in eliciting compliance from their children and deflecting defiance were very clear about what they wanted, but in addition to listening to their children's objections, they also accommodated them in ways that conveyed respect for the children's autonomy and individuality. Often, the process of obtaining compliance was quite extended; mothers reasoned, persuaded, suggested, and adapted their requests to what they thought the child would accept. In doing so, they encouraged competent behavior on the part of their toddler.

The present study focuses attention on the process by which parents resolve conflicts with their young children. As with other close relationships, strategies that are intrusive and power-assertive are typically ineffective in achieving a resolution that most parents would consider satisfactory, whereas strategies that combine a clear statement of what the parent wants with an acknowledgment of the child's perspective (even implicitly) are quite effective in both effecting compliance and

avoiding defiance. The developmental implication of this similarity (in effective conflict resolution) is that parents may bring to their negotiations with their children the skills and perspectives that they use in resolving marital disputes, and these skills may well hold the key to the link between measures of marital quality and certain aspects of child behavior. Moreover, the process by which parent and child negotiate conflict may constitute a primary arena in which the child develops negotiation skills that he brings to other relationships with peers and siblings. Investigating these hypotheses are a task for future research of parent-child conflict resolution.

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