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RETROSPECTIVE SELF-REPORT IN INHIBITED AND UNINHIBITED CHILDREN

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ABSTRACT

Eighteen children whose behavior had been classified as inhibited or uninhibited consistently across assessments at 2.5, 3.5, 5, and 7 years were interviewed at 11 years regarding their memories of early childhood. The interview took the form of specific questions about social and non-social behaviors suggesting fearfulness or shyness such as sleeping with a night light, fear of animals, and participation in activities with peers. Parents completed the same interview with reference to their own childhoods. A subset of 16 questions significantly differentiated the inhibited and uninhibited children, and interview scores were correlated with previous inhibition indices at each age. Parents received higher inhibition scores than children, and parent's scores correlated with children's scores for girls, but not for boys. These results suggest that the tendency toward inhibited behavior is stable during the transition from childhood into adolescence, and that aspects of inhibited behavior are available to the child's conscious inspection.

RETROSPECTIVE SELF-REPORT IN INHIBITED AND UNINHIBITED CHILDREN

Behavioral inhibition is defined as a temperamentally-based disposition to react to uncertain events, both social and non-social, with restraint. A decade of research on this topic offers strong support for the following conclusions: a) Behavioral inhibition is a stable characteristic of some individuals from infancy through early adolescence, particularly if the initial tendency is extreme. b) Behavioral inhibition is often associated with a specific biological profile suggesting greater than normal reactivity of the sympathetic nervous system and/or the hypothalamic adrenal-pituitary axis. c) Inhibited children who possess the biological features are more likely to remain inhibited than those who do not. (See Kagan, Reznick, & Snidman, 1987 and Reznick 1989

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for details.)

An important question that emerges from this work is whether inhibition will be stable through adolescence and into adulthood. There is considerable work on inhibition in adults (where it is called shyness or introversion), but few long-term longitudinal projects have addressed the question of continuity of inhibition from childhood to adulthood. Kagan reported findings from the Fels Longitudinal Study indicating that inhibition with peers observed during the early school years predicted social anxiety in adolescence and adulthood (assessed in an interview) (Kagan & Moss, 1962). Similarly, findings from the Berkeley Guidance Study revealed considerable continuity of shyness from childhood into adulthood: Children's shyness and excessive reserve reported by mothers at ages 8-10 was significantly correlated with teacher-reported shyness during pre-adolescence, and with clinicians' Q-sort descriptions based on interviews conducted 30 years later (Caspi, Elder, & Bem, 1988).

Although these two longitudinal studies indicate that shyness tends to persist from childhood into adulthood, measures of adult shyness are not necessarily equivalent to measures of childhood behavioral inhibition. The construct "shyness" is related to behavioral inhibition in sense meaning but not in measurement context. The term "behavioral inhibition," as it has been used in the research of Kagan and his colleagues, refers to evidence from observation of children in specific contexts where behaviors deemed inhibited can be categorized, counted, or timed. By contrast, research with adults on the construct "shyness" has employed diverse modes of measurement and its definition is not limited to observable behaviors. According to Briggs and Smith (1986, p. 47), shyness "connotes a rich cluster of behaviors, cognitions, feelings, and bodily reactions." In order to capture these multiple aspects of shyness, observational, physiological, and self-report methods have been used (see Briggs & Smith, 1986 for a review of the measurement of shyness). Therefore, it is difficult to compare childhood inhibition and adult shyness due to differences in measurement.

Because research on behavioral inhibition has focused exclusively on children, measures of shyness that require self-description (such as feelings and cognitions) have not been examined. Young children, in particular, may lack the cognitive self-reflection necessary to be able to report on their thoughts and feelings of shyness. The observational measures that have been used, however, are limited by the validity of measurement contexts and the appropriateness of the behaviors measured. Conversely, measures of adult shyness have typically focused on self-report rather than on behavioral observations. A major criticism of self-report is that it often reflects processes whose function is to uphold cognitive consistency or to promote social desirability (Crowne & Marlowe, 1960; Tanaka-Matsumi & Kameoka, 1986). Similarly, because of their more sophisticated social knowledge and broader social experience, it may be difficult to conduct observations of adults in ecologically valid situations where their disposition to shy, restrained behavior can be observed.

In spite of these methodological difficulties, it may be possible to determine whether adults were inhibited as children. To address this question, we developed a self-report measure of inhibition that could be used with both children and adults. Although self-protective mechanisms are likely to interfere with concurrent self-assess-

ments of behavior, retrospective reports of behavior in the long-distant past may be less vulnerable to this criticism. Of course, retrospective reports are vulnerable to detrimental effects of time, such as forgetting or selective remembering, but answers about specific events may be more accurate than recall of more general states.

The Retrospective Self-Report of Inhibition (RSRI) consists of specific questions pertaining to childhood inhibition. The content of the questions is based on interviews with the Harvard longitudinal cohorts (i.e., children who had been classified as extremely inhibited or uninhibited based on results from a battery of observational measures) and their parents, and thus has a strong claim for content validity. The questions pertain to social and non-social behaviors indicating inhibition such as sleeping with night lights, fear of animals, and participation in activities with peers.

In the present experiment, the validity of the RSRI as a measure of inhibition was tested by administering it in a concurrent (rather than retrospective) format to inhibited and uninhibited 11-year-olds from Cohort Two of the Harvard Longitudinal Sample (whose childhood inhibition had been assessed through observational procedures). The RSRI was also administered to the parents of these children. Similarities between the degree of inhibition reported by parents and their children would be interesting in light of the evidence suggesting genetic mediation of this trait.

METHOD

Subjects. The children were members of a longitudinal cohort recruited when they were 2.5 years old to be either extremely inhibited or uninhibited. The original inhibition classification was based on responses to an unfamiliar peer (variables included: time proximal to the parent, latency to explore toys, latency to approach the other child), to a stranger (initial reaction), and to an unfamiliar object (latency to approach the object). See Snidman (1989) for details of this assessment.

Subjects were retested periodically to reconfirm their inhibition status. At 3.5 and 5 years the test battery included the contexts described above plus a set of cognitive tests administered by an examiner. The primary inhibition variable in this context was spontaneous comments. See Kagan et al. (1988) for details. At 7 years the children participated in a "birthday party", and were coded for variables such as participating in group activities, talking, and solitary activities. See Kagan et al. (1988) for details.

Most children retained their inhibition profile across time and correlations across time tended to be high, but some children did change. For present purposes, we focused on a subset of children whose inhibition classification remained consistent over time. Specifically, we determined the median inhibition score at each assessment and only included children whose original classification was maintained at 7 years (i.e., was above or below the median), and at one or more of the other two assessments (3.5 and 5 years).

Of the original 66 children, 43 were retested at 7 years. Thirty of these met the consistency criterion, and 16 were retained for the present analysis. Two additional children who were not tested at 7 years but who were consistent across assessments at 3.5 and 5 years were also included. Thus, the present sample represents 18 of the

original 66 children, 9 boys and 9 girls, 8 inhibited and 10 uninhibited. Fourteen other subjects were eligible, but had already been tested at 11 years before the current measure was added to the test battery.

Data were also gathered from parents (28 mothers and 16 fathers) of children in the original cohort. The fact that there are more data from parents than from children is explained below.

Materials. The version 2.0 of the Retrospective Self-Report of Inhibition (RSRI) is a set of 35 questions regarding behaviors reflecting behavioral inhibition in childhood. The items are very specific, pertaining to the presence of fears (e. g., of the dark, of animals, of being kidnapped, of school), and explicit behaviors (e. g., needing a night light, trying new foods, participating in party games, sleeping over at friend's houses). Each question is answered on a 5-point scale, with the dimension including "never", "rarely", "sometimes", "often", and "always" or comparable terms appropriate for the question.

The RSRI was prepared as a self-administered questionnaire, with two alternative formats. In the retrospective format the questions were stated in the past tense, and the instructions were to "think of yourself as you were in elementary school (grades 1-6)." In the concurrent format the questions were stated in the present tense and instructions were to report current behavior. For example, the retrospective question, "Did you willingly participate in group singing or plays?" was asked concurrently as "Do you willingly participate in group singing or plays?". Five alternative answers were provided for each question (ranging from "never" to "always" or comparable terms) and subjects circled the answer they considered most appropriate to describe themselves. Each set of alternative answers was arranged in order from the less inhibited response to the more inhibited response.

Procedure. Each child completed the modified questionnaire as part of a laboratory assessment of thermographic response to stimulation. The parent who accompanied the child to the laboratory completed the RSRI at that time, and the other parent (usually the father) completed the RSRI at home and returned it by mail. The administration of the RSRI was added to the battery after testing had begun, hence several children are not represented. Because parents could complete the RSRI at home and return it by mail, the parents of most of these children are available for the present analysis.

RESULTS

The initial step in the analysis was to select items from the questionnaire that differentiated inhibited and uninhibited children. Inspection of the data for individual questions revealed that 16 questions appeared to differentiate the two groups, and these questions, listed in Table 1, were retained for use in an index of inhibition. The other questions suffered from lack of variance or of clarity, or seemingly random variance, and were eliminated.

A mean inhibition score was calculated for each child across the 16 items in

TABLE 1
Questions Retained for Inhibition Index (and Response Format)

<ol style="list-style-type: none"> 1. On the average, how often per year were you absent from school due to illness? (a) 3. Did you have illnesses/symptoms such as headaches or stomach aches for which the doctors could not find a cause? (b) 4. How often did you have nightmares? (c) 5. Were you scared of the dark? (c) 9. Were you afraid of unfamiliar animals, such as those you encountered on the street or at someone else's home? (c) 10. Were you scared that you would be kidnapped or otherwise separated from your parents? (b) 12. When your parents went out without you, were you scared that they might not come back? (c) 13. Did you sleep over at friends' houses? (d) 14. Did you try new foods? (e) 18. Did it upset you to be called on, even if you knew the answer? (f) 19. Did your teachers have trouble hearing you when you spoke or answered a question in class? (c) 21. During recess, did you play with the main group of children? (g) 25. How popular did you feel? (h) 28. Did you willingly participate in group singing or plays? (g) 29. Were your feelings easily hurt? (b) 30. Did you tell your friends or family members when you were angry with them? (g)

Response Format

- a. 0-4 days, 5-9 days, 10-14 days, 15-19 days, 20 or more days
- b. never, rarely, sometimes, often, very often
- c. never, once a year, once a month, once a week, once a night
- d. very often, often, sometimes, rarely, never
- e. eagerly, agreeably, with coaxing, only if pressured, never
- f. not at all, slightly, moderately, very, terrified
- g. always, often, sometimes, rarely, never
- h. very, moderately, average, below average, not at all

Table 1. A Cronbach's alpha of .69 across these 15 items suggests moderate split-half reliability for the inhibition score. The distribution of inhibition scores for the children was normal.

As expected given the criterion for selection of items, an analysis of variance on the inhibition scores for the children classified as consistently inhibited or uninhibited revealed a main effect of classification, $F(1, 17) = 6.57, p < .05$, with children classified as inhibited attaining higher scores on inhibition (mean score = 2.27 for inhibited, 1.86 for uninhibited). There was also an effect of Sex, $F(1, 17) = 8.87, p < .01$, with girls more inhibited than boys (mean scores of 2.26 and 1.83 respectively). There was no Sex by Classification interaction. Self-reported inhibition scores were significantly correlated with the original behavioral indices at each age, $r(15) = .75, p < .01$, $r(15) = .65, p < .01$, and $r(14) = .54, p < .05$, at 3.5, 5, and 7 years respectively.

Comparable inhibition scores were calculated across the 16 items for parents of the children originally classified as inhibited or uninhibited. Analysis of variance revealed no differences for fathers versus mothers, nor as a function of the child's inhibition classification or sex.

Finally, scores for children and parents were compared in a Group (inhibited versus uninhibited) by Respondent (parent versus child) analysis. Families including inhibited children had significantly higher scores, $F(1, 58) = 7.10$, $p < .01$, and parents had higher inhibition scores than children, $F(1, 58) = 6.40$, $p < .01$.

A related question is whether parent inhibition scores were correlated with child inhibition scores. When all cases were included in the correlation there was no significant relation between mother and child or between father and child. There was however, a surprisingly strong relation between scores for the two parents, $r(15) = .45$, $p < .07$, which seems to reflect the similarity of parents of inhibited children, $r = .60$, more than the parents of uninhibited children, $r = .20$. When relationships were assessed for girls and boys separately, there was a significant association between inhibition scores for girls and their mothers, $r(6) = .91$, $p < .01$.

DISCUSSION

The significant difference in inhibition score for 11-year-old children as a function of their previous classification into inhibited or uninhibited groups at 2.5-7 years of age is impressive. It supports the conclusion that the tendency toward profiles of inhibition or lack of inhibition is stable through the transitions of childhood and into early adolescence. Second, the behaviors that indicate inhibition are at least available to the child's conscious inspection. This does not necessarily imply that the child is aware of a coherence across his or her profile that defines the personality types examined here, but it does suggest that interviews with children might be helpful in assessing inhibition. The fact that children score lower than adults may indicate a lack of awareness, or perhaps even a defensiveness regarding behaviors that can be construed as shy or fearful.

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