

Temperamental Adaptability, Persistence, and Regularity: Parental Ratings of Norwegian Infants Aged 6 to 12 Months, with some Implications for Preventive Practice

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Abstract

There is a need for standardized measures of infant temperament to strengthen current practices in prevention and early intervention. The present study provides Norwegian data on the Cameron-Rice Infant Temperament Questionnaire (CRITQ), which comprises 46 items and is used within a US Health Maintenance Organization. The CRITQ was filled out by mothers and fathers at six and again at 12 months as part of a longitudinal study of mental health during the first years of life (the “Little in Norway” study, 1 041 families enrolled). Results showed that internal consistencies were comparable with US -data. The temperament dimensions persistence, adaptability and regularity had acceptable or close to acceptable reliabilities in the US study as well as in this study, and were also unifactorial in CFA analysis. These dimensions are focused in this paper. Findings concerning parents’ differential ratings of their infants on the three dimensions are reported, as well as the stability of parents’ ratings of temperament from six to 12 months. In addition, results on the relation between temperament and parenting stress are presented. The study suggests that temperamental adaptability, persistence, and regularity may be relevant when assessing infant behavior, and may be applied in systematic prevention trials for families with infants. The inclusion of concepts related to individual differences in response tendencies and regulatory efforts may broaden the understanding of parent—infant transactions, and thus enrich prevention and sensitizing interventions with the aim of assisting infants’ development.

Key words: temperament and prevention, adaptability, persistence, regularity, infants

Temperament refers to constitutionally based characteristics involving domains such as emotional regulation, affect, adaptability, activity and inhibition, that can be seen early in life (Kagan & Snidman, 2004; Rothbart, 2012; Thomas & Chess, 1977). In infants and young children, temperament influences important areas of functioning, such as adjustment to new experiences and managing strong emotions, and is therefore an important factor in normal and atypical development (Crockenberg & Leerkes, 2003). Although infants' and young children's temperament for decades has been a vital area of research in terms of developmental trajectories as well as adverse outcomes, tools for assessment and preventive supervision based on temperament theory are clearly insufficient (Bohlin & Hagekull, 2009; Lengua & Wachs, 2012; Torgersen, 1987). Disagreements about definitions, measurements, and the structure of temperament divided the field into groups with primary interest in research on constructs versus groups who had an interest in applications, most often in the tradition of the New York Longitudinal Study (NYLS) (Chess & Thomas, 1986).

Towards a Temperament Informed Preventive Practice in Infant Mental Health

When the NYLS pioneered the temperament field there was no division between research and applications. The aim was dual from the start: First, to study a variety of children's normal temperamental tendencies across development. Second, to let results guide practice, for example in guidance for parents to prevent maladaptive developments (Thomas, Chess, & Birch, 1968; Thomas & Chess, 1977). However, the focus for subsequent research became remote from the applied arena, and practitioners who worked with temperament continued to use the nine dimensions outlined in the NYLS: activity level, rhythmicity (regularity), approach or withdrawal, adaptability, threshold of responsiveness (sensitivity),

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intensity of reaction, quality of mood, distractibility, and attention span/persistence. These temperament characteristics can all have significant roles in behavioral issues. Problems may develop in different temperamental dimensions in their extreme variants, i.e. highest or lowest activity level or highest or lowest sensitivity; or when there is a mismatch between the infants' temperament and the environment's expectations.

Temperament practitioners are guided by the goodness of fit model, and if there is a poorness of fit (incompatibility) between individual and environment, psychological functioning is impaired, with the risk of disturbed behavioral development (Thomas et al., 1968). Practitioners thus identify the specifics of fit in each individual case, that is the specific features of child and environment which, in interaction with each other, are producing a poorness of fit and consequent maladaptive development. At the roots of the problem is the match between the parents' handling and the infants' own characteristics.

Although much experience has been accumulated through practitioners' evaluations of infants' temperament along the NYLS dimensions, which also informs personalized guidance to parents, there are no reports about outcomes of such work in prevention. A large body of research shows that temperament appears to convey vulnerability to common disorders, both internalizing and externalizing variants such as anxiety, depression, Conduct Disorder and ADHD, which suggests a role for guidance at an early age to prevent harmful developments (some more recent publications: Dougherty et al., 2014; Gartstein, Putnam, & Rothbart, 2012; Nigg, 2017; Sayal, Heron, Maughan, Rowe, & Ramchandani, 2013; Strelau & Zawadzki, 2011; Waller et al., 2016). Some maladaptive patterns may appear already from infancy, often associated with the establishment of negative emotional responses, which can serve to undermine developing self-regulatory processes (Nigg, 2017; Sayal et al., 2013). Time has

thus come to reconcile the original aim formulated in the NYLS and to build a bridge between temperament research and preventive infant mental health practice.

The Cameron-Rice Infant Temperament Questionnaire (CRITQ)

Very few instruments have been normed and standardized, and there is a need for temperament measures in prevention work that have acceptable psychometric properties (Zentner & Shiner, 2012). Carey and McDevitt (Carey, 1970; Carey & McDevitt, 1978) developed the Carey Temperament Scales (CTS) to measure temperament from early infancy through childhood, based on NYLS framework. However, these scales are comprehensive, and a group of practitioners who regularly utilized the CTS in prevention reported a need for shorter scales as they served large populations (J. Cameron, personal communication, December 1, 2008). This issue was the main impetus for the construction of the Cameron-Rice Infant Temperament Questionnaire (CRITQ) for infants and toddlers, which is based on the CTS, but shortened and adapted for individualized guidance within US Health Maintenance Organizations (Cameron & Rice, 1986a). To the best of the authors' knowledge, this is the only scaled up systematic use of temperament guidance for parents as part of preventive work, and which provides data for comparison in the present study. Typical behavioral issues during infancy revolve around sleeping, feeding, separation from caregivers, fussiness, and daily tasks such as bathing, dressing, and diapering (Cameron, Rice, Hansen, & Rosen, 1994). Cameron and Rice (1986b) demonstrated that parents were enthusiastic about individualized feedback on their infants' temperament, and that such information provides good support in their daily infant and child care. A recent longitudinal study following children for 15 years showed that parents who received individualized temperament guidance

based on the toddler version of the CRITQ had significantly fewer visits that led to a psychiatric diagnosis for their boys over the course of the study (Cameron, Rice, Sparkman, & Neville, 2013). The study provides interesting perspectives on how temperament guidance might be implemented within prevention and early intervention services. Although promising, there is a need for a psychometric investigation on the CRITQ to enable systematic studies of practical utility for the smallest children and their families.

Coherent Factors for Infants' Temperament in NYLS-Based Scales

Scales within the NYLS-tradition have been criticized for low internal consistency and overlap between dimensions (Rothbart, 1981). Practitioners have had little concern about the internal relationship between the items that comprise individual dimensions, because guidance for parents is based on specific statements (e.g., “the infant accepts right away any changes in place or position while nursing or bottle feeding”). Some dimensions within this tradition have nevertheless better internal consistencies than others. In a review of factor analytic studies on the NYLS-based scales, Martin, Wisenbaker, and Huttunen (1994) found little evidence for the Thomas and Chess nine-factor structure. For example in a representative sample of 2 443 Australian infants, *rhythmicity* and *persistence* emerged as relatively pure factors (Sanson, Prior, Garino, Oberklaid, & Sewell, 1987). In the Sanson et al. (1987) study, rhythmicity was associated with problems related to sleeping and crying, whereas persistence (maintaining of an activity by an infant in the face of obstacles) is of interest because this dimension merges into the broader domain of effortful control later in childhood (Mervielde & De Pauw, 2012). It was also found that the dimension *adaptability* loaded on approach and cooperation/manageability. This suggests that adaptability may be a component in

adjustability or flexibility to changes in the infant's environment. Adaptability may thus influence several areas of functioning in infancy, and is developmentally associated with an emotionality factor (Mervielde & De Pauw, 2012). These findings underscore that aspects of temperament are distinguishable in infancy. Knowledge about these aspects has relevance for counseling and guidance, such as in important areas related to the infant's cognitive development and social-emotional functioning, as well as when understanding the infant's contributions to interactions with caregivers is of primary interest.

The Various Influences on Parent Report

Both subjective and objective factors influence parents' reports of their own children's behavioral tendencies (Mebert, 1991; Seifer, 2000). One reason for the moderate agreement between mothers' and fathers' ratings is that their interactions with offspring often possess different qualities, even in more egalitarian societies (Lamb & Lewis, 2010). Timing of exposures may also be a factor. For example, Norwegian parents have extended periods of leave after the birth of their child, where mothers typically spend the first 6-7 months with their babies, whereas fathers usually are on leave for three months when their infants are approaching one year of age. The reporting-process may also be influenced by representations of caregiving. For example, parents with secure versus anxious attachment styles often have different interpretations of behavioral withdrawal and shyness, and this can foster interactions that may or may not be beneficial for the infant's development (Lewis-Morrarty et al., 2015). Counseling thus needs to take into account the sources of parent reports of their infant's temperament. Direct observations can illuminate to what degree high levels of withdrawal are relationship-specific, for example in cases where caregivers engage in overprotection and

show deficient responsiveness to needs for exploration. Such information can be used in feedback to parents as part of guidance, where understanding the infant's temperament may be crucial for adjusting parents' own behavior in interactions.

However, the degree of agreement between parents also depends on the type of temperament dimension measured. Agreement seems to be larger for negative emotionality (e.g., negative mood, irritability, low threshold for stimulation) as compared to more positive aspects of temperament (e.g., attentiveness, persistence) (Belsky, Fish, & Isabella, 1991). Infant negative emotionality is probably perceived as more distinguishable, and can serve as a significant stressor for parents that may fuel adverse interactional processes (Papoušek, Schieche, & Wurmser, 2008; Siqueland, Olafsen, & Moe, 2013). Generally, in counseling and guidance it is important to acknowledge the possible strain temperament can pose on the relationship between children and their caregivers (Crockenberg & Leerkes, 2003; Rettew, 2013). A core point is that the various behavioral characteristics indexed as temperament are not inherently abnormal, but may be involved in harmful developmental pathways when environmental fit is poor. Negative emotionality is integral to adverse developments, and these aspects of infants' temperament may show stronger associations with parenting stress. Parents' negative reactions to infants' behavioral individuality can in many cases disturb the establishment of goodness of fit (Sameroff, 2004).

Aims of This Study

The lack of published studies on the infant versions of shortened NYLS-scales used in counseling, such as the CRITQ, calls for closer investigations of these instruments, particularly as there is much accumulated practical experience that potentially can gain future

applications. The purpose of this study is to examine properties of the CRITQ in a Norwegian sample of infants, by formulating the following questions:

1) How does the internal consistency of each of the temperamental dimensions compare with similar measures from the US sample? Only temperamental dimensions with acceptable or close to acceptable reliability are focused in the following questions: 2) Are the scales unifactorial? 3) Do mothers and fathers provide differential ratings of their infants?) Do parents report changes in ratings of temperament from six to 12 months? 5) Are there differential associations between the temperament dimensions at 6 and 12 months, and parenting stress at 12 months? 6) Are the associations between temperament and parenting stress different for mothers and fathers?

Method

Recruitment and Participants

This paper uses data from the Little in Norway (LiN) study (Moe & Smith, 2010). LiN is an ongoing Norwegian longitudinal project (cf. Skjothaug, Smith, Wentzel-Larsen, & Moe, 2015; Fredriksen, von Soest, Smith & Moe, 2017). The study is community-based with a prospective cohort design, investigating pre- and postnatal risk and promotive factors influencing early child development and mental health. The study was approved by the Ethics Committee for Medical- and Health-Research, Eastern and Southern Norway.

Enrollment started in September 2011 and ended in mid-October 2012. The goal was to enroll approximately 1000 pregnant women and their partners who came for pregnancy check-ups during the one-year enrollment period. The inclusion terminated when 1041

women had consented to participate. Five families who later withdrew their consent did not allow us to keep any information, leaving 1036 prospective mothers. A total of 981 fathers were recruited; because five of these later withdrew, we were left with 976 fathers. Among these, 887 consented but only 884 contributed data to the study. Participants were enrolled at nine different public well-baby clinics in Norway. One healthcare nurse from each site was trained as a research assistant, and the sites were chosen after considering demographic characteristics and the size of the population to include participants from both cities and rural districts with a wide distribution of socioeconomic conditions. Midwives at the well-baby clinics approached pregnant women at 16 to 26 weeks of gestation with an invitation to participate, but some women were asked as late as weeks 31 to 34. All prospective fathers were encouraged to participate. Attrition analysis for the mothers in the LiN study is reported in Fredriksen et al. (2017). Briefly, 50.7% of the mothers consented at the four well-baby clinics where this was reliably recorded. Participation rates at the other five sites were assumed to be similar. Univariate logistic regression analysis showed that drop-out at 12 months was significantly higher with lower education, parity, childhood trauma, and higher levels of depressive symptoms.

This report is based on data yielded by asking the mothers and fathers to complete the CRITQ at two points of time (6 and 12 months), when attending regular check-ups at well-baby clinics, which are attended by 98 percent of families in Norway (Statistics Norway, 2015). The participating mothers and fathers were independent informants. At 6 months, 858 mothers (82.8%) and 591 fathers (60.6%) completed the questionnaire (defined as answering at least one CRITQ question, here 'not applicable' is regarded as having answered), whereas 782 mothers (75.5%) and 487 fathers (50.0%) completed the questionnaire at 12 months. More than 70% of the parents had higher education, and no more than 31.1% came from

lower economic levels, although representing a generally high education level in Norway. Together with a low degree of poverty, the study group has substantial resources (Table 1). In addition, gender was recorded for 1008 children. There were 527 boys, 479 girls and 2 children without gender classification. Mother's age at birth was known for 1008 children, $M = 30.6$, $SD = 4.8$, range 17.4-43.3. Father's age was known for 953 children, $M = 33.2$, $SD = 5.9$, range 17.0-57.2. Birth weight (g) was recorded for 1003 children, $M = 3531$, $SD = 536$, range 641-4940. Mother's self-reported ethnicity was recorded for all 1036 children, father's ethnicity for 884 children, 63 mothers and 41 fathers reported to be from an ethnic minority group.

Measures

Cameron-Rice Infant Temperament Questionnaire (CRITQ) (Cameron & Rice, 1986a). The CRITQ assesses the temperament characteristics of infants during the first year of life, based on the framework provided by the NYLS (Chess & Thomas, 1986). CRITQ comprises 46 items probing eight dimensions: *sensitivity*, *movement*, *reactivity/intensity*, *persistence*, *adaptability*, *approach – withdrawal*, *regularity*, and *soothability*. The questionnaire uses a 6-point Likert scale (1 = Almost Never to 6 = Almost Always). The questionnaire probes specific behaviors to reduce response ambiguity. CRITQ was translated to Norwegian and back-translated to English, and approved by James Cameron.

The CRITQ was adapted from the Carey and McDevitt Revised Infant Temperament Questionnaire (RITQ, the infant version of the CTS-scales) to pertain to supervision purposes (Carey & McDevitt, 1978). The RITQ was used early in the temperament guidance work at Kaiser Permanente of Northern California (a managed care organization in the US), but there were too many items and certain sub-areas within dimensions were more important to parents

than the overall scale scores. For example, regularity in sleeping patterns may be a problem for some parents, while feeding regularity is a problem for others. The guidance program utilized in hospitals and pediatric clinics at the Kaiser Permanente of Northern California includes an offer to subscribers to fill out a temperament questionnaire when their babies are four months old (Cameron et al., 1994). Questionnaires are then scored by a computer program, and a temperament profile is generated, together with written anticipatory guidance about behavioral issues likely to appear during a five- to 16-month period. All likelihood statements are based on probability calculations, derived from a data base of over 1,000 HMO infants followed from five to 16 months in the Kaiser Permanente research program (Cameron & Rice, 1986b; Cameron et al., 1994). The written anticipatory guidance focus on those areas of temperament that predict possible occurrence and management difficulty up to 16 months, within separation, sleep, assertiveness, mealtime, and accident risk.

US normative data for the CRITQ are based on parent reports of 4-months-old infants (not published, to be derived from The Preventive Ounce, a guidance-service within the Kaiser Permanente, J. Cameron, personal communication, December 1, 2008).

Parenting Stress Index (PSI) (Abidin, 1995). The PSI is a parental self-report questionnaire that provides an estimate of stress experienced in the infant-parent relationship. The PSI was standardized for use with parents of children ranging from 1 month to 12 years of age, and has acceptable reliability and validity (Abidin, 1995). The instrument comprises 101 items on a 5-point scale (strongly agree to strongly disagree), and consists of a Child Domain, measuring six dimensions of stress (*distractibility/hyperactivity, adaptability, reinforces parent, demandingness, mood, and acceptability*), and a Parent Domain, measuring seven dimensions of stress (*competence, isolation, attachment, health, role restriction, depression, and spouse*). Scores can be computed on individual dimensions as well as

composites for the child and parent domains, and there is also an overall total stress score. Higher scores indicate more stress. To avoid confounding between measures of parental stress and infants' temperament, only the composite score for the Parent Domain filled out by mothers and fathers at 12 months was used in this study. Although not designed to be a temperament measure, the Child Domain subscale in PSI taps into temperament characteristics as described within the NYLS framework (Abidin, 1995; Thomas et al., 1963). The Parent Domain in PSI, on the other hand, does not have a similar apparent overlap with CRITQ items.

Statistical Methods

Response to CRITQ was defined as at least one valid CRITQ item. Nonresponse analyses by child gender and maternal and paternal education and age, were performed for mothers and fathers at 6 and 12 months by logistic regression. Pairwise t-tests were carried out to compare scores for mothers and fathers at 6 and 12 months. Internal consistencies were determined using Cronbach alpha, which was computed for the Norwegian sample at 6 and 12 months, including both mothers' and fathers' reports, whereas for the US sample, internal consistency was provided at 4 months only, based on mothers' reports (see Table 3). Despite a lack of general guidelines, we chose a conservative approach by regarding temperament dimensions with Cronbach alpha -values above .70 as acceptable and above .60 close to acceptable. Factor models for these dimensions were investigated by confirmatory factor analysis (CFA). Models were evaluated based on standardized factor loadings, RMSEA (preferably below 0.08), CFI and TLI (preferably above 0.95). A small number of reasonable model modifications in terms of inter-item residual correlations, preferably the same within

the same dimension, were explored in case of inferior fit. Models were estimated by the WLSMV procedure due to ordinal items.

Means for mothers' and fathers' reports were compared. For mothers at 6 months, bootstrap BC_a 95% confidence intervals (10 000 replications) were also computed and used for comparison with Cronbach alpha in the US sample (Efron & Tibshirani, 1994). Differences were regarded as significant if the US-value is outside the confidence interval. Associations between parenting stress at 12 months and temperament variables, separately at 6 and 12 months and separately for mothers and fathers, were analyzed by linear regressions, with differences between regression coefficients in these regressions investigated by bootstrap BC_a 95% confidence intervals. Differences were regarded as significant if 0 is outside the confidence interval.

Significant results were determined by $p < .05$. Calculation of internal consistency used the R (The R Foundation for Statistical Computing, Vienna Austria, 3.0.0) package psy, and bootstrapping the R package boot. Calculation of correlations and t-tests was conducted with SPSS Version 20 (IBM SPSS Statistics 20). CFA models were estimated by Mplus version 8 (Muthén & Muthén, 2017).

Results

Mothers' and fathers' income and educational level is presented in Table 1. Correlations between variables is shown in Table 2.

Nonresponse Analyses

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For mothers at 6 months response was significantly higher for higher maternal education (odds ratio, OR 2.64, 95% CI 1.004 to 6.97, $p = 0.049$ for less than 4 years and 3.49, 1.28 to 9.50, $p = 0.015$ for at least 4 years higher education compared to compulsory education only), other p -values ≥ 0.207 . For mothers at 12 months all maternal education categories had significantly higher response than compulsory school (high school OR 2.43, 1.02 to 5.81, $p = 0.045$, less than 4 years higher education 5.14, 2.14 to 12.33, $p < 0.001$, at least 4 years higher education 5.94, 2.42 to 14.56, $p < 0.001$), other p -values ≥ 0.328 . For fathers at 6 months response was significantly higher for higher paternal education (OR 2.85, 1.17 to 6.93, $p = 0.021$ for less than 4 years and 2.71, 1.10 to 6.83, $p = 0.031$ for at least 4 years higher education compared to compulsory education only), other p -values ≥ 0.146 . For fathers at 12 months all paternal education categories had significantly higher response than compulsory school (high school OR 3.03, 1.06 to 8.64, $p = 0.038$, less than 4 years higher education 3.88, 1.38 to 10.89, $p = 0.010$, at least 4 years higher education 3.72, 1.31 to 10.53, $p = 0.013$). In addition, response was significantly higher for higher paternal education (OR 2.83, 1.36 to 5.89, $p = 0.005$ for less than 4 years and 2.82, 1.35 to 5.89, $p = 0.006$ for at least 4 years higher education compared to compulsory education only), other p -values ≥ 0.353 .

Internal Consistency and Confirmatory Factor Analysis

The pattern of reliability values was quite similar for the US and the Norwegian study on most dimensions. However, only the dimensions adaptability, persistence, and regularity had acceptable or close to acceptable values of Cronbach alpha. These values were not significantly different from the US sample (see Table 3).

Unifactorial CFA models for all the three CRITQ dimensions had generally satisfactory fit, if necessary after modifications in terms of inclusion of up to two inter-item correlations, and the standardized factor loadings were significant and generally sufficiently homogeneous, although somewhat low loadings occurred (between 0.18 and 0.29 in absolute value) as detailed below. Specifically, for mothers 6 months, adaptability had RMSEA 0.049, CFI 0.935 and TLI 0.911, three items had somewhat low standardized factor loadings, two modifications were included. For mothers 12 months RMSEA = 0.037, CFI = 0.955, TLI = 0.938, standardized loadings for four items were somewhat low, two modifications were included. For fathers 6 months RMSEA = 0.056, CFI = 0.930, TLI = 0.905, standardized loadings for two items were somewhat low, two modifications were included. For fathers 12 months RMSEA = 0.056, CFI = 0.934, TLI = 0.915, standardized loadings for two items were somewhat low. For persistence mothers 6 months RMSEA = 0.046, CFI = 0.992, TLI = 0.981, one modification was included. For mothers 12 months RMSEA = 0.061, CFI = 0.980, TLI = 0.960. For fathers 6 months RMSEA = 0.057, CFI = 0.988, TLI = 0.969, one modification was included. For fathers 12 months RMSEA = 0.074, CFI = 0.983, TLI = 0.957, one modification was included. For regularity mothers 6 months RMSEA = 0.058, CFI = 0.962, one modification was included. For mothers 12 months RMSEA = 0.064, CFI = 0.957, TLI = 0.937, one modification was included. For fathers 6 months RMSEA = 0.060, CFI = 0.971, TLI = 0.957, one modification was included. For fathers 12 months RMSEA = 0.070, CFI = 0.959, TLI = 0.940, one modification was included.

Inter-Parental Ratings

There were significant differences between mothers' and fathers' reports of adaptability at 6 month, regularity at 12 month, and persistence at 12 month. Table 4 compares scores between mothers and fathers for the three scale scores with acceptable or close to acceptable internal consistency.

Age Differences

Paired samples tests showed that mother reported persistence decreased significantly from 6 to 12 months by 3.87, CI 2.66, 5.07; $t = 6.28$, $p < 0.001$, valid $n = 730$. Similarly, adaptability decreased significantly by 1.98, CI 1.06, 2.90; $t = 4.23$, $p < 0.001$, valid $n = 727$, and regularity increased significantly by 6.16, CI 5.16, 7.15; $t = 12.17$, $p < 0.001$, valid $n = 740$. For father reports, persistence decreased significantly by 5.30, CI 3.75, 6.85; $t = 6.73$, $p < 0.001$, valid $n = 428$, and regularity increased significantly by 5.84, CI 4.54, 7.13; $t = 8.85$, $p < 0.001$, valid $n = 436$. There was no significant change in adaptability from 6 to 12 months in fathers' report, $p = .768$.

Temperament Predictions of Parenting Stress

All parental reports of temperament were significantly and negatively related to parenting stress, except for fathers' persistence (see Table 5). Mothers' reports of adaptability at 12 months were more strongly related to parenting stress than adaptability at 6 months (12 months, coefficient -0.44, 6 months -0.25, difference -0.18, 95% CI -0.34 to -0.03). No other differences were significant.

Discussion

Internal Consistency and Factor Structure

Our first aim was to compare the internal consistency of items within the temperamental dimensions with the values reported in the US sample. The Norwegian sample had similar Cronbach alpha-values as the US sample for most of the dimensions, but the three dimensions adaptability, persistence and regularity were the only ones with acceptable or close to acceptable reliability in both studies. In addition, in the present sample these dimensions had factor structures consistent with unidimensionality, and therefore were focused more specifically in our study. This is the first investigation that examines the CRITQ with CFA. The results indicate that the Norwegian version of the CRITQ is a measure that produces reliable scores for three temperament dimensions in infancy, and that it translates reasonably well into a Norwegian context, where families attend regular public health visitations during the child's first years. The CRITQ offers a language for discussions about infants' normal individual differences, and can potentially hone parents' observation skills, even if only a few dimensions have sufficient internal consistencies for systematic investigations on preventive practice.

A review of the strongest available factor analytic studies of scales based on the NYLS item pool found that there were five factors commonly assessed in the temperament literature (activity level, negative emotionality, task persistence, adaptability/agreeableness, and inhibition) (Martin et al., 1994). In addition, there were two factors that appeared with some regularity, but about which there was more controversy in the literature (rhythmicity/regularity and threshold). Biological regularity is probably confined to infancy, where it is an important characteristic, and threshold can have low reliability as children may not be equally sensitive across sensory modalities (see also Keuler, Schmitt, Van Hulle, Lemery-Chalfant, & Goldsmith, 2011).

The CRITQ is a rating scale with relatively few items (a total of 46 items), of which some dimensions have few items (for example three items in the sensitivity dimension), which tends to limit the size of the alpha coefficient. Activity level (movement) has more items in the CRITQ (six items), but this is not easily assessed by rating methodology in infancy independent of emotional responses (emotional arousal is often expressed through movement of arms, legs, and torso), which may throw light on the low reliability both in the US sample and the current study. Negative emotionality is equivalent to the reactivity dimension in CRITQ (intensity), which has considerably lower internal consistency than in the US sample (mother report: .22 vs. .56). The reactivity scale has seven items, but the difference in consistency may be due to the items in this dimension being more relevant for the smallest infants (four months in the US sample). This factor also loads on manageability and irritability, which may be captured by the adaptability dimension (see Bohlin et al., 1981). The inhibition factor (approach-withdrawal) has comparable internal consistencies in the US and the Norwegian sample; it has only three items, and thus compromises the size of the alpha coefficient. The same argument is also relevant for threshold (sensitivity, three items), where the internal consistencies in the US and Norwegian samples are comparable. The soothability dimension (equivalent to the NYLS dimension distractibility) also has few items (4), and the internal consistencies are comparable between the US and the Norwegian sample. But distractibility also has low internal consistency in the original Carey-scales (.49; Carey & McDevitt, 1978), and is not found to be a coherent factor. It is probably better conceptualized as being part of a more global factor (Martin et al., 1994; Rettew, 2013). Soothability in Rothbart's temperament model was partly developed from the NYLS adaptability dimension (Rothbart, 1981).

Three Temperament Dimensions and Preventive Implications

Our results are in accordance with factor analytic studies on the NYLS framework and point to three coherent temperament factors in the first year of life as measured with the CRITQ. All three dimensions are relevant for preventive practice and might spur personalized interventions that are tailored to the individual child's behavioral phenotype (McClowry & Collins, 2012). The items of adaptability within CRITQ allows descriptions of behavioral areas that are common in infancy, but potentially can raise parents' concerns about the infant's adjustment in domains of sleep and feeding. An infant may for example be slow in making the transition from awake states to sleep and back to sleep again once awakened, or take longer time to sleep alone than one who is more adaptable. Often there can be a need for a transitional object or routine to fall asleep. Slow-adapting infants may also take longer to adjust to a new sleeping pattern, and there can be setbacks with any illness or change. Around feeding, infants may be slow in tolerating the change from breast or bottle to solids. The slow-adapting infant refuses changes involving new or different foods, including different presentations of usually accepted foods. Guidance can be focused on establishing routines, to respond consistently, and to allow time to adjust to any change (Kristal, 2005).

Adaptation is vital for infants' functioning, as the individual adjusts to specific external and internal forces and conditions. For example, in an integrative model where temperament is described as one of several factors that may contribute to co-regulation or dysregulation, adaptability is viewed as central to infants' behavioral regulation (Papoušek et al., 2008). Individual differences in the infant's adaptability to changes in routines can be a significant issue for families seeking professional advice. It is important to understand what aspects of the infant's individual adaptation to change or transitions may be difficult,

including how soothable the infant is, so that attempts to help may not overrun the infant's own self-regulatory skills.

Persistence is a precursor to the broad dimension of *effortful control* in Rothbart's model, which is defined as executive control processes and behaviors that operate to modulate physiological, affective, or behavioral reactivity, by means of attention focusing, attention shifting, and inhibitory control (Mervielde & De Pauw, 2012; Rothbart, Ahadi, Hersey, & Fisher, 2001). Persistence may thus be an early facet of self-regulatory processes, which are important for learning and cognitive functioning (Rothbart, 2012). Low persistence can be expressed as low frustration tolerance and irritability. Irritability is one of the most frequent reasons for treatment referral in older children, and is a criterion for several emotional and behavioral disorders (Dougherty et al., 2015). More frequent and persistent irritability, as when working on new skills, can be significant information in identification of children at risk at an early age.

An infant's low persistence or low frustration tolerance can also be a factor in sleep and feeding problems (Cameron et al., 1994). An easily frustrated infant soon learns that parents help reduce frustration by their assistance in overcoming obstacles. Thus, the infant may be frustrated when the parent is not immediately available for help when waking up in the night, and this differs from slow adaptability in that the sleep issue is one of separation rather than transition (Kristal, 2005). High persistence can also pose challenges when not understood, and in feeding the infant may for example be "locked in" to likes and dislikes. This can result in power struggles, where it is important to guide parents to not make mealtime a battleground.

Regularity has items that capture regularity in sleep (main area within the scale), in feeding, and in activity. These areas can be focused in more complex regulatory problems, for example to separate constitutional sleep irregularities from fear of separation (Papoušek et al., 2008). A brief scale for temperamental regularity can be a useful tool in addition to questionnaires and diaries in the assessment of problematic sleeping, feeding, and modulation of arousal in infants 6 to 12 months of age. Some infants may for example not become tired and fall asleep on a regular schedule. Without external regulatory efforts, such infants can be left to set their own sleep schedules, with resulting sleep deprivation and worsening of behavior (Weissbluth, 1999). Information about temperament can help parents to understand infant characteristics that contribute to continuing waking up and signaling in the night (St James-Roberts, 2012). As to feeding habits, low regularity may be associated with hunger at different times of the day and night cycle, and various amounts of food eaten. Irregularities in activity or energy can also contribute to problematic sleep or feeding, interfering with modulation of arousal appropriate for the situation. A highly irregular infant may need extra support through use of routines, rituals and other adjustments depending on the involved behavioral area.

Children's influence on family dynamics has been called the neglected side of family relationships, and it is important for caregivers to have knowledge about their infants' behavioral individuality so that goodness of fit can be established (Crouter & Booths, 2003).

Mothers' and Fathers' Ratings of Temperament

Significant differences were found between mothers' and fathers' ratings. Mothers rated their 6 months old children as more adaptive than did fathers, and as more regular and

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with a higher persistence at 12 months, compared to fathers' ratings. Parental disagreement about their infant's temperament is consistent with earlier studies that compared information from mothers and fathers (for example Goldsmith & Campos, 1990). Field and Greenberg (1982) found that mother-father correlations were relatively high for the dimensions of activity, rhythmicity, and approach ($r = .55$ to $r = .59$). For other dimensions such as persistence, intensity, and threshold, there were lower correlations (from $r = .00$ to $r = .28$), with an average value of $r = .36$ across all dimensions. In the Field and Greenberg study, inter-parent correlations were considerably higher at toddler-preschool age than during the infancy period.

Thus, in line with previous studies, mothers and fathers rated their infants different at the same point of time. However, this does not necessarily reflect inadequacies among the parents as raters because fathers and mothers typically spend time with their infants in different ways and contexts (Lamb & Lewis, 2010). Although roles have changed in modern societies, where mothers traditionally were more involved in caregiving and fathers with play and exploration, subtle differences may still elicit different aspects of infants' temperament (Seifer & Sameroff, 1986; Konner, 2010). Prevailing differences may influence the attitudes and beliefs that parents hold about their individual children. In addition to subtle differences in caregiving emanating from traditional roles, mothers' and fathers' personal characteristics and individual working models may also influence appraisal and feelings for their baby, and thus affect reports of temperament (Seifer, 2000; Manczak et al., 2016). Parental personality traits have been shown to predict ratings of children, such that traits relating to negative emotionality predict perceptions of more difficult babies (Vaughn, Bradley, Joffe, Seifer, & Barglow, 1987). Some working models can be inflexible, for example when one or both parents overattend to difficulties without a basis in actual behaviors. As stated above, such

discrepancies may prove to be important to discuss with parents in an attempt to come to an agreement in how they understand their infant's behavior. A goal for guidance and supervisory practice may be to adjust parents' perceptions in accordance with observable temperamental characteristics.

Changes in Temperament from 6 to 12 Months

The fourth question concerns changes in ratings of temperament from 6 to 12 months. There were significant changes for both mothers and fathers in reports of persistence and regularity. Both parents reported a decrease in persistence, seeing for example the child as less eager to play with the same toy, or less enduring in training motor skills at 12 months. For regularity, both parents reported a significant increase from 6 to 12 months. Mothers' ratings showed a decrease in adaptability, seeing the infant as less easy to adapt at 12 than at 6 months, compared to fathers whose ratings did not change significantly over the same age span. In the revision of the Infant Temperament Questionnaire (RITQ), Carey and McDevitt used only mothers as informants, finding no significant age differences for the nine dimensions across a four- to eight-month period (Carey & McDevitt, 1978). In the Australian revision of the RITQ, mothers reported significant changes from 5-6 months to 7-8 months, with older infants rated as more rhythmic and less adaptable, but there was no clear-cut change in persistence (Sanson, Prior, & Oberklaid, 1985). Our results can be seen in light of the findings reported by Gartstein and Rothbart (2003), who showed significantly lower levels of Duration of Orienting (defined as "attention to and/or interaction with a single object for extended periods of time") from 9 to 12 months, compared to a younger age group (3 to 6 months). These authors discussed whether lower levels of Duration of Orienting for older infants may reflect maturational changes in the posterior attention network that allow the

infant to disengage from visual stimuli more efficiently (Ruff & Rothbart, 1996).

Furthermore, at 12 months, many fathers in Norway are on paternal leave for several months, and thus may become rapidly more familiar with their babies' behavioral individuality. This may bring parents' observations more in agreement with each other on temperamental characteristics involved in infants' exploration and mastery motivation, such as practicing new tasks over and over.

The finding that mothers reported a significant decrease in adaptability across the later part of the first year may be associated with the emergence of attachment behaviors. When the infant is put down in different places, protests can be reflected in adaptability to changes (e.g. "the infant appears bothered [cries, squirms] when first put down in a different place"). Both parents reported an increase in regularity, which may reflect the stability of feeding and sleeping routines at 12 months.

The age differences demonstrated in this study provide further support for changes in the expression of temperament during infancy. Although such changes could reflect differences in maturational rates, Rothbart (1989) noted that aspects of temperament are not static attributes, but emerge gradually through processes involving both maturation and experience. For example, at birth, infants' temperament traits have already been influenced by prenatal experiences (Huizink, 2012), and parenting predicts continuity as well as change in temperament traits (Kiff, Lengua, & Zalewski, 2011). Moreover, it has been argued that both temperament and personality traits may be seen as clusters of dimensions involved in behavioral systems that have been selected through evolution and are fine-tuned by individuals' life experiences, for example systems supporting the detection of rewards (Surgency/Extraversion), and the detection of threats (Negative Emotionality/Neuroticism) (MacDonald, 2012; see also Suor, Sturge-Apple, Davies, & Cicchetti, 2017). Such

conceptualizations go beyond the traditional focus on separate dimensions, and also expose limitations of measurement tools that do not include change during development, but clearly represent exciting perspectives on how temperament can be seen as part of developmental trajectories within different ecological niches.

Temperament and Parenting Stress

The final two questions focused on predictive relations between the temperament dimensions at 6 and 12 months, and parenting stress at 12 months for mothers and fathers. All temperament dimensions were significantly negatively related with parenting stress, except for fathers' ratings of persistence. Low adaptability at 12 months was more strongly related to parenting stress than low adaptability at 6 months.

The relations between higher parenting stress and lower levels of adaptability, persistence, and regularity echo earlier research on difficult aspects of temperament, except that there was no significant association between persistence and parenting stress for fathers. Thus, although fathers become astute observers of their infants' behavioral individuality, temperamental associations with parenting stress may still be different from mothers. This information could be useful in detailed evaluations, where descriptions of the infants' behavioral individuality through rating scales could be supplied by collecting information about how the various aspects of temperament could have different impact on each of the parents.

The finding that adaptability predicted parenting stress for mothers stronger at 12 than at 6 months, may be seen in light of the change in temperament that mothers also reported, specifically the decrease in adaptability from 6 to 12 months. Norwegian mothers' extended

maternity leave during the first year gives them an opportunity to be more familiar with the infants' subtler behavioral dispositions, including ease or difficulty in adjustment or flexibility to changes in the infant's environment. Mothers may be sensitized to the broad influence of adaptability, which is mirrored in the original descriptions, including adaptation to food, noises, mother substitutes, places, toys, procedures, and sleep habits (Thomas et al., 1963). In the CRITQ, these various aspects are included in the subdimensions that measure adaptability to restrictions and intrusions, to transitions, and to changes. The associations with parenting stress can reflect increased awareness to these aspects of temperament, and thus raise a possibility for worries about development. However, it is important to acknowledge the association between adaptability and emotionality, and that low adaptability may represent unique sources of negative emotionality (Mervielde & De Pauw, 2012; Sanson et al., 1987). Guerin, Gottfried, Oliver, and Thomas (2003) showed that inadaptable infants were significantly more likely than those in the adaptable temperament group to have elevated behavior problems at 3 years of age, and inadaptability continued to be associated with problem behaviors during childhood and adolescence. Children with low adaptability require more time and preparations to settle into a new care or school situation, which is also the key to establishing a good fit to changing environments (Chess & Thomas, 1986).

Methodological Issues

This study shares a main weakness with the NYLS-framework, using a taxonomy of temperament characteristics that to varying degrees overlaps (see Rettew, 2013). However, the three dimensions that have acceptable or close to acceptable internal consistencies are also identified in factor-analytic approaches to scales based on the NYLS (Bohlin et al., 1981;

Sanson et al., 1987), as well as showing unidimensionality in the present study. Moreover, the inclusion of dimensions with few items in the CRITQ (for example *approach – withdrawal*, 3 items) is a threat to internal consistency. This is also a problem with the scales for practitioners within the NYLS-framework, for example the internal consistency of the RITQ ranges from .49 to .71 (Cameron & Rice, 1986b; Carey & McDevitt, 1978; Rothbart, 1981). As mentioned, the question of internal consistency has not been focused in clinical practice because responses to singular questions are considered significant sources of information. Another methodological issue is the continuing problem with construct validity when using parent report to measure temperament. Subjective influences on parent report are well known, and in a clinical context it is important to collect additional observational information. Finally, the representativeness of fathers' reports is challenged due to the low rate of questionnaires filled out. Generally, the response sample was somewhat biased towards families with higher educated mothers and to some extent higher educated fathers. This may throw light on the similarities in temperament reports across samples, as it has been held that adults insured in Kaiser Permanente HMO are primarily white with higher education (Cronholm et al., 2015).

Conclusion

This study, based on a relatively large Norwegian sample, has brought three dimensions into focus that can support individualized interventions for infants and their families. The importance of temperament cannot be ignored in infant mental health practice as it provides a framework for understanding individual differences in central aspects of functioning beyond diagnostic categories. Adaptability and regularity may have roles in regulatory functioning, whereas degrees of persistence can influence performance in developmental and cognitive assessments. The inclusion of concepts related to individual

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differences in response tendencies and regulatory efforts may broaden the understanding of parent—infant transactions, and thus enrich prevention and sensitizing interventions with the aim of assisting infants' development. The short format of the CRITQ allows use at well-baby assessments during the first year of life, which is attended by most families in Norway.

Temperament assessments on a large-scale level may spur future studies on contextual moderators on outcomes, such as specific caregiver and cultural characteristics, as well as making validation studies in clinical groups of infants possible.

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Table 1

Parents' income and education

Parent (<i>n</i>)	Income (%)							
	1 ^a	2	3	4	5	6	7	8
Mother (1036)	1.7	10.0	19.4	44.4	17.1	4.7	2.0	0.6
Father (884)	0.1	4.6	10.3	33.8	27.5	11.1	5.5	7.0

Parent (month, <i>n</i>)	Educational level, <i>n</i> (%)			
	1 ^b	2	3	4
Mother (6, 858)	20 (2.3)	154 (17.9)	315 (36.7)	369 (43.0)
Father (6, 589)	22 (3.7)	131 (22.2)	188 (31.9)	248 (42.1)
Mother (12, 782)	13 (1.7)	131 (16.8)	296 (37.9)	342 (43.7)
Father (12, 485)	13 (2.7)	104 (21.4)	163 (33.6)	205 (42.3)

Note. Father's education had 152 missing values, therefore the numbers in the table for father's education are lower than the number of families where the father had answered at least one CRITQ-question. Specifically, of the 591 and 487 fathers having answered at least one CRITQ-question at 6 and 12 months respectively, there were valid information for only 589 and 485 fathers.

^a 1: No income 2: Below 150.000 (NOK), 3: [150.000, 300.000), 4: [300.000-450.000), 5: [450.000-600.000), 6: [600.000-750.000), 7: [750.000-900.000), 8: 900.000 or above

^b1. Below upper secondary education; 2. Upper secondary education; 3. Higher education short; 4. Higher education long.

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Table 2

Intercorrelations between continuous and dichotomous (or ordinal) variables

V ^a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	—																							
2	.44	—																						
3	-.01	.04	—																					
4	.43	.31	-.01	—																				
5	-.01	-.05	.02	-.08	—																			
6	.28	.35	.04	.39	-.03	—																		
7	-.04	-.05	.03	-.06	.49	-.03	—																	
8	.05	-.01	.01	.08	-.05	.04	.03	—																
9	.03	.02	-.03	.05	.01	.03	.03	.35	—															
10	.05	.04	.01	.05	-.03	.07	.07	.48	.19	—														
11	.07	.02	-.01	.14	-.11	-.02	.01	.20	.42	.28	—													
12	.02	.03	-.03	.05	-.09	.08	-.05	.28	.14	.25	.13	—												
13	.01	-.01	-.04	.02	.01	.01	-.09	.15	.27	.10	.23	.38	—											
14	-.02	-.05	-.02	-.03	-.07	-.01	-.05	.22	.09	.32	.14	.42	.24	—										
15	-.02	-.06	-.02	.04	-.04	-.04	-.05	.07	.19	.11	.32	.27	.52	.34	—									
16	-.03	-.07	-.02	-.01	-.04	.04	.01	.21	.09	.18	.07	.34	.15	.22	.12	—								
17	-.05	-.05	.03	-.01	.03	.01	.04	.05	.23	.01	.14	.12	.30	.07	.24	.35	—							
18	-.06	-.13	-.04	-.07	-.03	-.02	.04	.18	.04	.17	-.01	.19	.15	.23	.07	.47	.15	—						
19	-.07	-.07	.05	-.03	-.02	-.02	.01	.04	.12	.03	.14	.12	.26	.16	.27	.27	.47	.36	—					
20	-.03	-.02	.02	-.11	.09	-.06	.09	-.21	-.07	-.27	-.16	-.21	-.20	-.33	-.12	-.23	-.11	-.16	-.12	—				
21	-.08	-.03	.03	-.10	.04	-.03	.11	-.04	-.17	-.03	-.21	-.08	-.26	-.21	-.31	-.05	-.18	-.07	-.20	.26	—			

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22	.36	.29	-.01	.47	.01	.38	.01	.06	.01	.03	-.01	.06	.06	-.01	.02	-.05	-.05	-.02	.01	.05	.03	—		
23	.25	.28	-.01	.31	<i>.07</i>	.41	.02	.05	.02	.02	-.07	<i>.08</i>	.07	-.05	-.02	-.04	-.03	-.02	.01	.04	.07	.71	—	
24	-.01	.02	-.07	-.03	-.07	.02	-.09	-.02	.01	.03	-.05	.04	.05	.04	.04	.05	.06	.05	.01	-.01	-.07	.04	.03	—

Note. ^a V = Variables. Ordinal or dichotomous variables: 1 mother’s education, 2 father’s education, 3 child’s gender (male 1, female 2), 4 mother’s income, 5 mother’s ethnicity, 6 father’s income, 7 father’s ethnicity. Spearman correlations if an ordinal or dichotomous variable is involved.

Continuous variables: **8** regularity mother 6 months, **9** regularity father 6 months, **10** regularity mother 12 months, **11** regularity father 12 months, **12** adaptability mother 6 months, **13** adaptability father 6 months, **14** adaptability mother 12 months, **15** adaptability father 12 months, **16** persistence mother 6 months, **17** persistence father 6 months, **18** persistence mother 12 months, **19** persistence father 12 months, **20** mother PSI parent domain, **21** father PSI parent domain, **22** mother’s age, **23** father’s age, **24** birth weight. Pearson correlations if both variables involved are continuous.

Italic: $p < 0.05$, Bold: $p < .01$, Bold italic: $p < .001$.

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Table 3

Internal consistencies in temperament dimensions for US and Norwegian sample

CRITQ dimension (items)	Cronbach alpha US (4 months)	Cronbach alpha N 6 months	Valid <i>n</i> (%)	Confidence interval (CI)	Cronbach alpha 12 months	Valid <i>n</i> (%)
Sensitivity (3)						
Mothers	.38	.40	782 (75.5)	[0.32, 0.47]	.45	676 (65.3)
Fathers		.41	550 (56.4)		.41	441 (45.2)
Movement (6)						
Mothers	.25	.53	733 (70.8)	[0.46, 0.58]	.51	614 (59.3)
Fathers		.54	511 (52.4)		.50	408 (41.8)
Reactivity (7)						
Mothers	.56	.22	638 (61.6)	[0.12, 0.32]	.26	536 (51.7)
Fathers		.24	449 (46.0)		.21	375 (38.4)
Persistence (5)						
Mothers	.65	.66	697 (67.3)	[0.62, 0.70]	.66	525 (50.7)
Fathers		.65	487 (49.9)		.68	370 (37.9)
Adapt (10)						
Mothers	.65	.61	508 (49.0)	[0.55, 0.66]	.56	486 (46.9)
Fathers		.63	349 (35.8)		.65	319 (32.7)
Approach – withdrawal (3)						
Mothers	.45	.51	593 (57.2)	[0.42, 0.58]	.57	632 (61.0)
Fathers		.50	420 (43.0)		.55	397 (40.7)
Regularity (8)						
Mothers	.73	.71	574 (55.4)	[0.67, 0.74]	.67	588 (56.8)

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Fathers		.73	429 (44.0)		.69	379 (38.8)
Sooth (4)						
Mothers	.59	.55	676 (65.3)	[0.48, 0.61]	.55	654 (63.1)
Fathers		.53	484 (49.6)		.48	423 (43.3)

Note. CRITQ = Cameron-Rice Infant Temperament Questionnaire. Cronbach alpha 12 months is for the Norwegian sample ($n = 1036$).

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Table 4

Mothers and fathers reports on temperament dimensions with acceptable or close to acceptable Cronbach alpha-coefficients

Temperament dimension	n	Mean	SD	Diff ^a	CI (95%) ^b		t	P
					Lower	Upper		
Adaptability	559			2.49	1.37	3.60	4.39	<.001**
Mothers 6 months		70.83	12.02					
Fathers 6 months		68.35	12.34					
Adaptability	439			0.94	-0.31	2.19	1.48	.141
Mothers 12 months		69.31	11.59					
Fathers 12 months		68.37	12.22					
Persistence	555			1.26	-0.23	2.75	1.66	.098
Mothers 6 months		66.06	16.70					
Fathers 6 months		64.80	15.64					
Persistence	434			2.98	1.24	4.73	3.36	.001**
Mothers 12 months		62.87	16.58					
Fathers 12 months		59.89	16.22					
Regularity	562			1.12	-0.17	2.41	1.71	.088
Mothers 6 months		69.67	15.01					
Fathers 6 months		68.55	13.14					
Regularity	442			1.48	0.07	2.89	2.07	.039*
Mothers 12 months		75.79	12.83					
Fathers 12 months		74.31	12.45					

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Note: Paired samples t-test. n = valid reports for both mothers and fathers. SD = standard deviation. CI = confidence interval.

^aMean difference. ^bCI for difference between mothers and fathers.

* $p < .05$. ** $p < .01$.

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Table 5

Temperament predictions of parenting stress

Temperament dimensions	Maternal stress, 12 months		Paternal stress, 12 months	
	Coefficient (CI)	<i>p</i> -value	Coefficient (CI)	<i>p</i> -value
Adaptability, 6 months	-0.25 (-0.39, -0.12)	< 0.001	-0.38 (-0.55, -0.22)	< 0.001
Persistence, 6 months	-0.16 (-0.26, -0.06)	0.001	-0.10 (-0.23, 0.02)	0.094
Regularity, 6 months	-0.17 (-0.28, -0.07)	0.001	-0.15 (-0.30, -0.01)	0.035
Adaptability, 12 months	-0.44 (-0.58, -0.30)	< 0.001	-0.41 (-0.57, -0.24)	< 0.001
Persistence, 12 months	-0.10 (-0.19, -0.00)	0.039	-0.11 (-0.23, 0.01)	0.066
Regularity, 12 months	-0.29 (-0.42, -0.17)	< 0.001	-0.16 (-0.32, -0.00)	0.046

Note. CRITQ variables are reported by the mother in regressions for maternal reports of stress, and by the father for paternal reports of stress.