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Cross-Cultural Differences in Parental Beliefs About Infant Motor Development: A Quantitative and Qualitative Report of Middle-Class Israeli and Dutch Parents

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The present study explored cultural differences in parental beliefs about motor development across 2 Western cultures: Israel and the Netherlands. Can 2 cultural models be distinguished regarding infant motor development in Israel and the Netherlands or are parental beliefs about motor development similar across these cultures? Using a questionnaire containing closed and open questions, beliefs of 206 Israeli and 198 Dutch parents of first-born children between 2 and 7 months old were analyzed. Based on both quantitative and qualitative analyses, distinct cultural models were found showing that the Dutch attributed a bigger role to maturation and children's own pace than to stimulation. The Israeli parents found stimulation of motor development important and discussed active stimulation more elaborately. When discussing supportive activities, the Israeli parents mentioned specific activities, whereas the Dutch parents used more general, vague expressions about support. Moreover, the Israeli parents discussed the need for expert advice and advice from relatives and other parents more than the Dutch parents, who rely on their own observations, books, or websites more often. The cultural background was the strongest predictor of parental beliefs about motor development. Parental education, age, children's birth weight, gender, and having seen a physical therapist showed weaker relations with parental beliefs. Altogether, 2 distinguishing cultural models can be found, raising the question whether infant motor development can be approached similarly across Western cultures. Besides this implication for science, practitioners should also be aware of differences between cultures and between parents.

Keywords: infant motor development, cultural differences, parental beliefs, mixed methods, the Developmental Niche

While parents all over the world eagerly anticipate their infants' first steps, they differ in the extent to which they stimulate the motor development of their child. In line with differences in stimulation, infants are found to vary in both order and pace of motor development across cultural contexts (e.g., Adolph, Karasik, & Tamis-LeMonda, 2010; Onis, 2006). These findings suggest an interplay between biological and sociocultural factors in infant motor development. The variability in gross motor development is particularly interesting as the acquisition and refinement of motor skills provide infants with an increasingly broader set of possibilities for interacting with the environment (Gibson, 1988), which, in turn, affects development in other domains (e.g., social, cognitive; Iverson, 2010; Oudgenoeg-Paz, Leseman, & Volman, 2015; Walle, 2016). Thus, parents have good cause to eagerly await their infant's first attempt at rolling, crawling or stepping. One important factor affecting development might be parental beliefs. Although previous studies have focused on parental beliefs about several aspects of infant development, such as infant sleep (Tikotzky & Sadeh, 2009), feeding practices (Synnott et al., 2007), arousal, and self-regulation (Harkness et al., 2007), parental beliefs on infant motor development are largely unstudied. To extend this line of research, the current study focuses on beliefs of parents on motor development in two Western countries: the Netherlands and Israel.

The Developmental Niche of Motor Development

The developmental niche framework provides a theoretical model for analyzing the role of culture in children's development (Harkness & Super, 2006; Super & Harkness, 1986; Worthman, 2010). This framework includes three subsystems that interact with child development: physical and social settings of daily life, customs and practices of care, and the psychology of the caretaker or parental beliefs (Super & Harkness, 1986). In the developmental niche, parental beliefs are related to parental behavior, and to parental choices for daily settings and activities and the way in which they shape children's immediate environment and experiences. Through the relations with daily practices and settings of care, parental beliefs have the potential to influence children's development in various domains (Murphey, 1992; Super & Harkness, 1986; Worthman, 2010). Parental beliefs reflect the views,

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ideas, thoughts, knowledge, and values that parents hold about children's development and socialization, parenting and family life (Bornstein, 2002; Harkness et al., 2007; Tuli, 2014). Thus, according to the developmental niche framework, studies into the sociocultural construction of motor development should focus on settings of child care, parental practices, parental beliefs, and the relations between these subsystems and actual motor development. In the following sections we will describe the available evidence for cross-cultural differences in actual motor development and in each subsystem as well as the relations between the subsystems and between the subsystems and motor development.

Cross-Cultural Variability in Motor Development

Research in this field has mostly distinguished between sub-Saharan, rural cultural contexts and Western European, urban cultural contexts showing that African children attain the motor milestones of the first 2 years (e.g., sitting, walking) earlier than Western children do (see Adolph et al., 2010 for a review). As these differences are quite evident, they could raise the impression of a broad homogeneous developmental model within each of the contexts (i.e., Western and non-Western). However, research on other aspects of infant and child rearing and development questions this homogeneity within Western cultures (e.g., Harkness & Super, 2006; Harkness, Super, & van Tijen, 2000; Henrich, Heine, & Norenzayan, 2010; Suizzo, 2004). More recent research has indeed shown differences in infant motor development between Western cultures while using norm-referenced instruments such as the Bayley Scales of Infant and Toddler Development-third edition (Bayley-III) or the Alberta Infant Motor Scale (AIMS; De Kegel et al., 2013; Steenis, Verhoeven, Hessen, & van Baar, 2015). For example, Flemish infants were found to score lower than the AIMS norm values that are based on Canadian infants (De Kegel et al., 2013). Furthermore, Dutch infants assessed with the Bayley-III, were found to be delayed in gross motor skills attainment and advanced in fine motor skills attainment compared with the American norms (Steenis et al., 2015).

Cross-Cultural Differences in Settings and Parental Practices Regarding Motor Development

In line with the developmental niche framework, several studies addressed cross-cultural differences in parental practices as well as settings in terms of equipment use. Parents were found to provide, for example, different opportunities for the child to be in diverse positions, such as prone or supine. Moreover, parents differ in their choice to prompt or avoid sitting and or standing (Adolph, 2002; Hopkins & Westra, 1989, 1990; Lobo & Galloway, 2012; Super, 1976). Differences were also found in the use of various infant equipment such as baby walkers (Davis, Moon, Sachs, & Ottolini, 1998; Majnemer & Barr, 2005), in practices of constriction such as swaddling or a cradleboard (Dennis & Dennis, 1940; Van Sleuwen, et al., 2007), and whether or not to restrict access to stairs (Berger, Theuring, & Adolph, 2007).

Parental Beliefs About Motor Development

To the best of our knowledge, parental beliefs about motor development have not been systematically examined in Western cultures. However, some studies do report differences in specific parental expectations regarding the pace of motor development. For example, Jamaican mothers living in England expect their infants to sit and walk relatively early, whereas Indian mothers living in the same city expect their infants to crawl relatively late (Hopkins & Westra, 1990). Dutch mothers were found to expect motor and cognitive milestones to occur later than Italian mothers did. However, Dutch mothers were also found to believe that they can influence their child's motor development more than Italian mothers did (Van Beek, Genta, Costabile, & Sansavini, 2006).

While studies have not addressed beliefs about motor development between Western cultures, some work does provide evidence for differences in beliefs between the sub-Saharan, rural cultural contexts and Western European, urban cultural contexts. For example, some non-Western, traditional African cultures, such as the !Kung or mothers with a Yoruba background in West Nigeria, were found to believe in a strong relation between parental practices and infant motor development (Ejemen, Bernard, & Oluwafemi, 2015; Konner, 1977). The !Kung even believe that children will never start sitting, crawling, standing, or walking if not taught to (Konner, 1977). While comparing Cameroonian Nso women with German women, Keller, Yovsi, and Voelker (2002) showed that among the Western women developmental goals are not focused on motor skills or motor handling. These parents believe that infants are supposed to be put in a horizontal posture as they need time to mature (Keller et al., 2002).

In addition to addressing practices and specific attitudes, some studies report evidence of a relation between practices and actual motor development (Lobo & Galloway, 2012). For example, several studies found that not putting infants in prone position and using specific equipment such as baby bouncers at early ages is related to a delay in the acquisition of motor milestones (De Kegel et al., 2013; Pin, Eldridge, & Galea, 2007). Furthermore, evidence is also provided for a link between parental beliefs and parental practices. Colson, Geller, Heeren, and Corwin (2017) found that in a United States representative sample, parental intention and beliefs strongly influence parental practices regarding infant sleep position. In this study, mothers who had positive attitudes toward the prone position were more likely to place their infants to sleep in prone position (Colson et al., 2017).

Altogether, within the components constituting the developmental niche, evidence has been found for cross-cultural variability in motor development, parental practices thought to influence motor development, and specific expectations about motor development. Moreover, evidence has been found for a relation between practices and actual motor development and for a relation between parental beliefs and practices. However, to the best of our knowledge, no study to date has addressed cross-cultural variation within Western cultures in parental beliefs about motor development. Therefore, the current study will focus on parental beliefs about motor development in two Western cultures: the Netherlands and Israel.

Dutch and Israeli Cultural Models of Parenting

Normative studies on motor development have revealed that the Dutch children are relatively late in achieving motor milestones compared with children in other Western countries, as well as compared with Israeli children (Kohen-Raz, 1968; Shapira & Harel, 1983; Steenis et al., 2015). The Netherlands and Israel also follow different

cultural models. In the Netherlands, the prevailing cultural model focuses on rest and regularity (Harkness & Super, 2006; Super et al., 1996) and parents are found to hold strong beliefs about the importance of sleep, rest, and regular daily routines for infants. This model is in correspondence with findings documenting that Dutch infants slept more than infants from other Western cultures (Harkness & Super, 2006). In the context of early motor development, this model of rest and regularity may lead parents to believe that lower levels of stimulation are better and, therefore, explains why Dutch infants lag behind in their pace of gross motor development. However, it is not clear what beliefs Dutch parents actually have regarding motor development.

The Israeli culture forms quite a contrast to the Dutch culture in many aspects. Israel is often framed as the least individualistic among Western cultures (Bornstein et al., 1998; Hofstede, 1983), young infants are usually cared for by family members and the upbringing is child-focused (Feldman, Masalha, & Alony, 2006). Nevertheless, Israeli parents stress autonomy and self-expression as important skills for their children (Feldman & Masalha, 2007; Seginer, Shoyer, Hossessi, & Tannous, 2007). This emphasis on autonomy and child-focused upbringing may imply that Israeli parents stress stimulation of motor development more than the Dutch parents do. In addition, Israel is a pluralistic society with a wide diversity in the cultural background of its inhabitants. Of the Israeli population, 75% are Jewish and 21% are Arab (Israel Central Bureau of Statistics, 2013). Within the Jewish group, continuous waves of immigration from multiple cultures led to a highly diverse cultural makeup (Cohen, 2007; Rosenthal & Roer-Strier, 2001). Possibly, this diversity could also lead to a wide variety in parental beliefs about infant motor development. Altogether, the Netherlands and Israel could show two opposing cultural models that might reflect the wide variety in beliefs about infant motor development within Western cultures.

The Current Study

The aim of this study is to investigate whether parental beliefs about infant motor development differ between middle-class Dutch and Israeli parents. Following the literature review on cultural variability in motor development, we would expect that Dutch parental beliefs about motor development state that infants should not be stimulated much, they should be put in horizontal posture, and that a bigger role is attributed to maturation than to stimulation. The Israeli parents possibly hold different beliefs about motor development, namely that infants should be stimulated more. To test these hypotheses, we used data from a newly developed questionnaire that uses a mixed methods approach (Atun-Einy, Oudgenoeg-Paz, & Van Schaik, 2017).

Using these data, we address four research questions. First, it is important to understand whether parental beliefs about motor development can be measured the same way in both cultural contexts. In other words, our first research question is: can we find measurement invariance in the measure of parental beliefs about infant motor development? To address this question, the factor model of the questionnaire used to measure parental beliefs (see Atun-Einy et al., 2017) will be tested in each culture separately. Second, while using this measure of beliefs in both cultural contexts, do we find differences between Israeli and Dutch parents? Third, are the cross-cultural differences bigger than the differences within cultures, based on individual differences such as maternal age or education? In other words, can we really speak of homogeneous cultural entities that are distinct from other cultural entities? Fourth, what differences do we find between Israeli and Dutch parents when we qualitatively analyze their answers to open questions where they elaborate on their role in motor development. Altogether, these research questions lead to a broad understanding of the cultural models of infant motor development in Israel and the Netherlands.

Method

Participants

The sample initially included 198 Dutch and 206 Israeli parents of first-born children between 1 and 7.5 months old ($M = 4.03$, $SD = 1.46$), leading to a total sample of 404 parents (48.5% of the children were girls). Most questionnaires were filled in by mothers, 7 Dutch and 9 Israeli fathers filled in the questionnaires. The average birth weight was 3,368 g ($SD = 627$ g). Parental age varied between 21 and 48 years ($M = 30.25$, $SD = 3.94$). The measure of parental socioeconomic status (SES) combined parents' completed level of education and type of profession as measured using a 3-point scale. For the education measure a low score indicated parents who had only finished secondary education or less; the middle category included parents who had completed upper vocational education and training; and the highest category included parents who had completed a University degree. Parent's profession was coded on a similar scale according to the educational level required for this profession. The total score was an average of both measures. Parent's SES ranged between 1 and 3, but was on average high ($M = 2.63$, $SD = .57$). Of the total sample, 53 children had seen a physical therapist. Of the Israeli parents, 9 did not fill in an answer to one or few items of the questionnaire. These 9 parents did not differ significantly from their Israeli peers who had completed the entire questionnaire, $F(7, 195) = 1.40$, $p = .21$ on any of the beliefs, indicating missing at random. The current sample is an extension of the sample used in a previous article by Atun-Einy et al. (2017) reporting on the psychometric properties of the questionnaires Parental Beliefs about Motor Development (PB-MD) and Motor Habits (MOHAB).

Procedure

Under the project name "Studying parental beliefs and practices regarding early motor development: Cross-cultural comparison of parents of preterm and full term born children" this study was approved by the Ethics Committee of the Faculty of Social and Behavioral Science of Utrecht University, approval number FETC16-002 as well as by the Ethics Committee of the Faculty of Social Welfare and Health Sciences of University of Haifa, approval number 178/13. The current study used the PB-MD, which takes a mixed-methods approach, to explore the cross-cultural differences in parental beliefs about motor development. The questionnaire was administered through an online platform (Limesurvey in the Netherlands and FormLogix in Israel).

Measures

Quantitative measures. Using the Parental Beliefs about Motor Development (PB-MD) questionnaire (Atun-Einy et al., 2017)

beliefs were measured. The questionnaire includes general statements on motor development and vignettes describing realistic scenarios regarding motor development (e.g., an infant that cries when put in prone position). Following each vignette, three related statements are presented. Parents were asked to indicate on a 6-point scale, to what extent they agree with the general statements and the statements following the vignettes (1 = *disagree*, 6 = *strongly agree*). These statements are divided in five scales. The first scale "motor development should be stimulated" (6 items), included statements such as "The parents should practice daily motor exercises with their child in order to facilitate his motor development." The second scale "motor development occurs naturally" included three items such as "In typically developing infants, motor development occurs naturally and there is no need to actively stimulate it." The third scale "parents should seek advice regarding motor development" was comprised of three items, among which a statement following a vignette about a child who fusses when put in prone position, indicating that "The parents should seek advice from an expert such as a pediatric physiotherapist." The fourth scale, "the order of motor milestones is important," combined two items. One of the items was "It is very important that the infant will follow the motor milestones in the correct order and will not skip any milestones." The last scale "each child has their own pace in motor development" included four items, such as "There is no need to accelerate the baby's motor development, because each baby develops at his own pace." A total score per scale was calculated by computing the mean of all items belonging to the scale. In addition to the five scales, the first statement ("Motor development is one of the most important things during the first year of life") was used as separate item indicating the importance parents attribute to motor development. In a previous article by the authors of this study, this new measure to study parental beliefs about infant motor development was reported to have good psychometric properties. Face and convergent validity, internal consistency and test–retest reliability were all found satisfactory (Atun-Einy et al., 2017).

To further gain insight in the type of advice parents seek regarding motor development, they were asked to indicate on a 5-point Likert scale, ranging from *never* (1) to *always* (5), whether they used different types of advice or information about motor development. Four scales were constructed: parents' own observations of other babies (1 item), parents' personal network including relatives and other parents (2 items), professionals (1 item), and external sources such as books, Internet for a, and websites (3 items).

Qualitative measures. In the PB-MD, parents were provided with two open questions: (a) Do parents have a role in supporting their baby's motor development? If so, what is their role?; (b) Should parents do something with the baby and/or with the environment to support the baby's motor development in the first year of life? If so, what should they do? The answers to these open questions were coded in the original language (i.e., Dutch and Hebrew) by native speakers. Translations were used only for purposes of communication between researchers of each site, and quoted examples in publications.

Coding and reliability of the open questions. The coding list was developed inductively, in several iterations as is customary in qualitative analyses (McClelland, 1976). After establishment of the initial coding list, the coding of several answers was jointly analyzed and discussed thoroughly by the three authors. This led to revising the list until it covered all possible themes. Final coding was done on every (written) utterance that expressed a different thought or reflection. As the answers were relatively short, occurring themes or codes were only attributed to each respondent's answer once.

The final coding list, as reported in Table 1, includes eight codes describing the role of parents in supporting motor development and four codes describing the type of activities parents could do. The answers were mainly coded by two trained research assistants, one in each cultural site. Interrater reliability was tested using double coding done by the authors and the assistants. In total 20% of the data were double coded. As some of the codes were not used very often, the calculation of κ values is difficult (Hallgren, 2012). In the statistical literature, this is often referred to as the "prevalence problem," meaning that when the marginal distributions of

Table 1
Thematic Analysis of Open Questions

Interview themes	The Netherlands		Israel		Group contrast φ
	N	%	*N*	%	
Role of parents in motor development. Parents should . . .					
Provide general support	129	75.9	73	45.1	−.32*
Not support	69	40.6	38	23.5	−.18*
Only support when delayed	27	15.9	42	25.9	.12*
Follow child development	34	20.0	57	35.2	.17*
Not over-support	51	30.0	38	23.5	.07
Foster motor development	22	12.9	54	33.3	.24*
Encourage motor development	8	4.7	19	11.7	.13*
Actively manipulate motor development	26	15.3	38	23.5	.10
Activities to support motor development					
General activities	85	50.0	63	38.9	−.11*
Adapt activities to age/norm	15	8.8	34	21.0	.17*
Fostering or encouraging activities	62	36.5	82	50.6	.14*
Manipulating activities	79	43.9	118	70.7	.30*

* $p < .05$.

the ratings are asymmetric, κ values become unrepresentatively low. In this situation, the maximum κ value that can be reached is very low (below .40), even though the percentage of agreement is high. Therefore, besides the percentage of agreement and κ, also the Prevalence Adjusted Bias Adjusted Kappa (PBAK) was computed. This measure provides a κ value that is corrected for prevalence and should, therefore, be preferred in cases where there is a clear prevalence problem (Byrt, Bishop, & Carlin, 1993; Hallgren, 2012). Given that not all of our codes have this problem, we report the traditional κ, the PBAK and percentage of agreement.

Percentage of agreement was generally high, ranging from 85 to 100% (M = 96%, SD = .04). Kappa values ranged from 0 to 1 with a mean of .72. When only the codes with no prevalence problem (codes used in at least 15% of the answers) were included, we retained four codes in each cultural group and a κ range of .59 to .89 (M = .79, SD = .11). Two values (.59 and .60) indicate moderate agreement and the rest indicate substantial (above .70) or excellent (above .80) agreement. The values of the PBAK all indicate good to excellent agreement and range from .70 to 1 (M = .92, SD = .08). Taken together, these values indicate that the interrater reliability of the used coding scheme is good.

Analysis Strategy

All quantitative analyses were conducted in Mplus version 7. Missing data were dealt with by using full information maximum likelihood (FIML) estimation in Mplus (Muthén & Muthén, 1998-2010). As our overall sample size was relatively large (N = 404), model fit was deemed acceptable if the χ^2 goodness of fit statistic is not significant or did not exceed 3 when divided by the degrees of freedom (df), the root mean square error of approximation (RMSEA) was smaller than .08, and the comparative fit index (CFI) exceeded .90.

To address the first question, whether we can find measurement invariance in the measure of beliefs about motor development, the measurement invariance of the factor structure was tested. To address the second research question, means of each scale were compared between both cultural contexts while controlling for SES level using a multivariate analysis of variance test (MANOVA). To address the third research question, in a structural equations model, predictors of the different factors of beliefs about motor development were added to compare the predictive value of culture to that of other background factors. To address the fourth and last research questions, the parents' answers to the open questions were analyzed as following. As many parents did not mention a code at all, we created dichotomous variables for each concept indicating whether the concept was mentioned (1) or was not mentioned at all (0) by the parent. We used χ^2 tests to analyze group differences on these dichotomous variables. In addition, each specific motor activity mentioned by parents was coded and the total number of activities mentioned was calculated per participant. To control for differences in length of response, we transformed these total counts to percentages, by dividing them by the total number of codes. We used analysis of variance (ANOVA) to test differences between the Dutch and Israeli parents in these percentage scores indicating the emphasis put on active manipulation of motor development.

Results

Before further analyzing the data, group differences between cultures in background characteristics were tested using independent samples t tests for continuous variables and χ^2 tests of equal distribution for dichotomous or categorical variables. There were no group differences found in parental age, $t(370) = -1.42$, $p = .16$, child's age, $t(402) = -1.07$, $p = .28$ or birth weight, $t(402) = 1.79$, $p = .07$. The samples did not differ in their gender distribution ($\chi^2(404) = .04$, $p = .85$, Cramer's V = .01). Parental SES differed significantly ($\chi^2(389) = 30.86$, $p < .01$, Cramer's V = .28) between the two sites. A high SES was significantly less prevalent among the Dutch parents (54.0%) than among the Israeli parents (79.6%). More Dutch parents fell in the middle category (37.9%) in comparison with Israeli parents (14.1%). Given this difference, SES was controlled for in the analyses.

Another interesting difference between the samples was the intragroup variability of parents' cultural background in terms of home language or country of birth. In the Netherlands, only two parents had a mother tongue other than Dutch (1%), one German and one Russian. Of the 198 parents, 191 were born in the Netherlands, 2 were born in Germany, 1 in Belgium, 1 in Dominican Republic, 1 in India, 1 in Russia, and 1 in Sri Lanka. The Israeli sample was more diverse, 39 parents had a different mother tongue than Hebrew (18.9%), 25 parents spoke Russian, 7 parents spoke English, 4 spoke Arabic, 2 spoke French, and 1 indicated "other language" as their mother tongue. Of the 206 parents, 172 were born in Israel, 27 were born in the former USSR, 4 in the United States, 2 in France, and 1 in Canada. In both samples, an equal share of children had seen a physical therapist; in the Dutch sample 26 children (14.0%) and in the Israeli sample 27 children (13.1%; $\chi^2(404) = <.01$, $p = .99$).

In Table 2 descriptive statistics of the questionnaire items can be found. As expected, clear cross-cultural differences can be found at the item level of the questionnaire as well as the mean level. In addition, for statement 1 and the scales stimulate, advice, and order the variance between the two samples differed significantly. Statement 1 "motor development is one of the most important things during the first year of life" had a significantly larger variance in the Netherlands than in Israel (respectively, 1.12 vs. .66; $F(400) = 14.22$ $p < .01$). The scales stimulate, advice, order, and own pace each had a larger variance in Israel (respectively, .72, 1.34, 1.82, and .49) than in the Netherlands (47, .95, 1.0, and .36; $F(402)$ ranged from 4.70 to 22.62, $p < .01$).

Measurement Invariance

To address the first research question about measurement invariance of the factor structure of the PB-MD, first confirmatory factor analysis was conducted for each country separately, using Mplus. The factor structure in the Dutch sample confirmed a five factor model with adequate model fit ($\chi^2(120) = 212.74$, $p < .01$; CFI = .89; RMSEA = .06). Based on modification indices given by Mplus, one covariance between two items in the same case description was included, which increased model fit significantly ($\chi^2(119) = 196.71$, $p < .01$; CFI = .90; RMSEA = .06). The five-factor structure in the Israeli sample initially fitted the data less adequately ($\chi^2(120) = 286.03$, $p < .01$; CFI = .84; RMSEA = .08). Based on modification indices as well as contents of the items, four covariances between items were included stepwise. Each step led to a

Table 2
Descriptive Statistics and Group Differences of Questionnaire Scales

Belief scales	The Netherlands (N = 198)			Israel (N = 206)			Group contrast
	N	M	SD	N	M	SD	η^2
"Motor development most important during first year"		4.63	1.06		5.41	.81	.15*
Stimulation		2.43	.69		3.15	.85	.18*
Natural development		2.70	.97		2.72	1.05	ns
Advice		2.33	.97		3.01	1.16	.09*
Order		2.22	1.00		3.41	1.35	.20*
Own pace		4.16	.90		3.39	.96	.14*

* $p < .05$.

significant increase in model fit statistics, yet the final model fit was still merely adequate ($\chi^2(116) = 225.62$, $p < .01$; CFI = .89; RMSEA = .07).

Next, a multiple-group confirmatory factor analysis (MGCFA) was conducted to test whether the factor structure was equal across groups, intercepts were allowed to differ per group in this model (van de Schoot, Lugtig, & Hox, 2012). The MGCFA model did not fit the data well ($\chi^2(240) = 498.77$, $p < .01$; CFI = .86; RMSEA = .07). Following modification indices, in five steps covariances between items that matched each other in contents were included in the model. Each step led to a significant increase of model fit, reaching a final model that fitted the data well ($\chi^2(235) = 422.32$, $p < .01$; CFI = .90; RMSEA = .06). In Table 3 factor loadings corresponding to this MGCFA model are reported for each sample and in Table 3 the correlations between the factors are reported per sample. When intercepts were constrained to be equal across groups, the model fit decreased and was not sufficient anymore ($\chi^2(253) = 742.10$, $p < .01$; CFI = .73; RMSEA = .10). Altogether, these models suggested partial measurement invariance. That is, although the overall factor structure can be applied in both contexts, we found no evidence for equal intercepts across the contexts. Because of the partial measurement invariance, differences between the two cultural contexts will be analyzed by comparing calculated means per scale rather than using latent factor scores.

Cross-Cultural Differences in Beliefs

To address the second research question, about cross-cultural differences in beliefs, the means of the motor belief scales were compared between the two countries while controlling for SES, using a MANOVA. The multivariate test revealed clear cross-cultural differences, with a large effect size ($F_{culture}$ (6,376) = 17.21, $p < .01$, $\eta^2 = .22$). Specifically, parental beliefs about the natural development of children's motor skills did not differ between the Netherlands and Israel, $F(1, 400) = .04$, $p = .83$. Scores on the parental belief scales about stimulation ($F(1, 400) = 85.49$,

Table 3
Factor Loadings per Sample of Each Scale

Items	Israeli parents					Dutch parents				
	Stim	Nat	Adv	Ord	Own	Stim	Nat	Adv	Ord	Own
Statements										
2		.67					.45			
3	.72					.53				
4		.68					.94			
5	.37					.53				
6				.71					.96	
7		.66					.41			
Vignettes										
Vignette 1 statement A					.44					.46
Vignette 1 statement B			.58					.58		
Vignette 1 statement C	.41					.45				
Vignette 2 statement A	.33					.36				
Vignette 2 statement B				.79					.45	
Vignette 2 statement C			.63					.70		
Vignette 3 statement A					−.25					−.50
Vignette 3 statement B					.39					.70
Vignette 3 statement C			.61					.68		
Vignette 4 statement A					.64					.56
Vignette 4 statement B	.79					.61				
Vignette 4 statement C	.63					.63				

Note. Stim = stimulation; Nat = Natural development; Adv = advice; Ord = order; Own = own pace. The questionnaire was published as an appendix to the article by Atun-Einy, Oudgenoeg-Paz, and Van Schaik (2017).

$p < .01$, $\eta^2 = .18$), advice ($F(1, 400) = 40.93$, $p < .01$, $\eta^2 = .09$), and order ($F(1, 400) = 99.50$, $p < .01$, $\eta^2 = .20$) were higher in the Israeli sample than in the Dutch sample. The Israeli parents also agreed more strongly with statement 1, ($F(1, 400) = 70.10$, $p < .01$, $\eta^2 = .15$), expressing the belief that motor development is one of the most important things during the first year of life, than the Dutch parents. The Dutch parents agreed more with statements expressing that children should be allowed to follow their own developmental pace ($F(1, 400) = 67.44$, $p < .01$, $\eta^2 = .14$). All effect sizes were large.

Besides cross-cultural differences, differences with medium effect size were found between SES groups (F_{SES} (6,376) = 3.07, $p < .01$, $\eta^2 = .05$). Parents with a low SES agreed significantly more with the notion that children's development occurs naturally ($M_{\text{lowSES}} = 3.31$, $SD = 93$) than parents with a middle ($M_{\text{midSES}} = 2.63$, $SD = 1.06$) or high SES ($M_{\text{highSES}} = 2.68$, $SD = .99$; $F(2, 387) = 5.23$, $p < .01$, $\eta^2 = .03$). Furthermore, parents with a middle SES scored lower ($M_{\text{midSES}} = 2.32$, $SD = 1.01$) than parents with a high SES ($M_{\text{highSES}} = 2.79$, $SD = 1.17$) on the items measuring the belief that parents should consult experts about their infant's motor development ($F(2, 387) = 4.28$, $p = .02$, $\eta^2 = .02$). Effect sizes of the univariate comparisons were small to medium. No interaction effects were found between culture and SES ($F_{culture}$ *SES (6,376) = 1.51, $p = .12$, $\eta^2 = .02$).

When investigating differences in the type of advice sought by parents, Shapiro-Wilk tests showed that the four scales indicating the types of advice were not normally distributed in either group (W ranged from .91 to .98, $p < .01$). Therefore, nonparametric testing was applied, using Mann–Whitney U tests of equality of distributions. These tests showed that only the scale of professional advice had equal distributions across the two samples ($p = .06$). Therefore, for this scale, the median was compared between the two groups, whereas for the other groups the mean rank was compared. Results reveal that the median of seeking professional advice was higher for Israeli parents ($Md = 4$, range 1 to 5) than for Dutch parents ($Md = 3$, range 1 to 5). For the other scales, mean ranks differed significantly between the two groups, such that the Israeli parents consulted their own networks more often ($U = 15844.50$, $p < .01$, IL mean rank = 252.73, Dutch mean rank = 141.05) and the Dutch parents relied more on their own observations ($U = 8605.00$, $p < .01$, IL mean rank = 180.42, NL mean rank = 219.04) and external sources ($U = 13601.50$, $p < .01$, IL mean rank = 169.53, NL mean rank = 230.79).

Additional Predictors of Parental Beliefs

The third research question, which variables predicted parental beliefs about infant motor development in addition to culture, was tested by building a structural equations model in which the five constructs and statement 1 were predicted by culture, SES, child age, gender, birth weight, having attended physical therapy, and parental age. The full model, including all predictors, fitted the data well ($\chi^2(12) = 18.14$, $p = .11$; CFI = .99; RMSEA = .04). Model trimming was conducted stepwise by constraining nonsignificant paths (with $|\beta| < .10$ and $p > .10$) to zero as long as the model fit did not worsen significantly. To obtain the most parsimonious model, 29 paths were constrained, leading to the final model, as depicted in Figure 1 ($\chi^2(41) = 41.32$, $p = .46$; CFI = .99; RMSEA < .01). Figure 1 reports the standardized coefficients based on which a comparison between effect sizes of each predictor can be made. Effect sizes (see Figure 1) reveal that the largest percentage of variance is explained in the scale Order of development and the smallest percentage in the scale Natural development. The correlations between the five motor beliefs scales and statement 1 are reported in Table 4. Apart from the scale Natural development, culture was the strongest predictor of each belief construct, including statement 1. The effects of culture were similar to the effects reported in the analysis of the second question. In addition to culture, children's age was negatively related to parents' beliefs regarding stimulation and seeking advice, and positively to beliefs about children's own pace suggesting that parents of younger children more often believed that it is important to stimulate motor development and seek advice regarding this development, whereas parents of older children more often believed that children should follow their own pace in motor development. Having seen a physical therapist was positively related to seeking advice and negatively to allowing children to follow their own pace. Higher SES parents scored lower on the belief constructs natural development and order of motor development and higher on seeking advice. Children's birth weight was positively related to stimulation of motor development. Parent's beliefs about natural development were higher for boys. Maternal age was not related to any belief construct at all. The explained variance in all scales was medium to large. Comparisons of the regression paths show that the effects of culture were larger than the effects of other background variables.

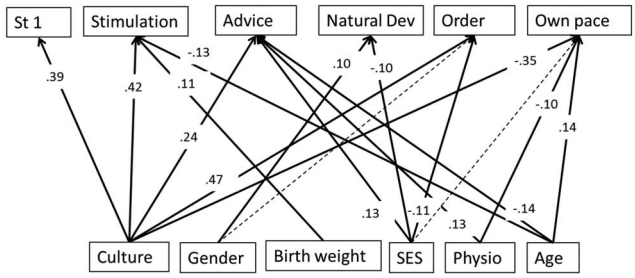

Figure 1. The prediction of the five motor beliefs constructs by background characteristics. Figure presents standardized coefficients for significant predictive paths in the final model. Dotted lines represent unsignificant paths. Chi-square = 41.32, $df = 41$, $p = .46$, CFI = .99, RMSEA < .01, CFI = comparative fit index; RMSEA = root mean square error of approximation. The explained variance per scale varied from medium to large $R^2_{\text{statement1}} = .15$, $p < .01$, $R^2_{\text{Stimulation}} = .21$, $p < .01$, $R^2_{\text{Advice}} = .13$, $p < .01$, $R^2_{\text{Order}} = .22$, $p < .01$, $R^2_{\text{Natural}} = .02$, $p = .16$, and $R^2_{\text{Own pace}} = .17$, $p < .01$. Culture and Gender are dummy variables, Culture value 1 = Israel and Gender value 1 = male.

Qualitative Analysis

While analyzing the open questions to address the last research question, differences were found between parents' open discussion on their role in motor development. In Table 1 the cross-cultural differences in mentioning a concept are reported. Effect sizes of the significant differences were small to medium. The χ^2 tests showed that significantly more Dutch parents mentioned general support, do not support, and general activities than Israeli parents. A clear example of their discussion of the role of parents in motor development is this quote from a Dutch mother:

Table 4
Correlations Between the Belief Scales per Sample

Belief scales	*N* items	Israeli parents				Dutch parents			
		1	2	3	4	1	2	3	4
1. Stimulation	6	1				1			
2. Natural development	3	−.26*	1			−.28*	1		
3. Advice	3	.42*	−.11	1		.43*	−.17	1	
4. Order	2	.32*	−.10	.39*	1	.33*	−.04	.34*	1
5. Own pace	4	−.67*	.71*	−.44*	−.31*	−.52*	.39*	−.46*	−.35*

* $p < .05$.

> "No, every baby has his own development. You can direct your child by playing with your baby, but it should not lead to pressing."

Another example is the following Dutch mother who states some general claims about parents' role (or lack of it) in stimulation and how to avoid being intrusive:

> You have to pay attention and observe the natural process of development of motor skills without being too forced. Stimulate but mostly analyze. Have faith in time and the process of each individual child.

These Dutch views on the role of parents in motor development and the type of activities are quite contrasting to Israeli parents' ideas on motor development. Israeli parents stressed a significantly much more active role and mentioned specific activities that match this active role of stimulating motor development, just as the following example of an Israeli parent's answer:

> Yes. Parents have an important role to play in supporting motor development, especially at the age of up to a year, especially if the baby does not go to child care. The parent must stimulate the child and expose him to different things in both touch and posture. Put as much as possible on your belly and make sure there is no side preference, encourage him to explore his body and the surroundings.

Israeli parents also assigned more importance to following the child in terms of adapting the activities and environment according to the child's age and "developmental stage" to fostering and stimulating motor development. Concretely, Israeli parents more often gave specific descriptions of how to support infant's motor development and what activities parents can do, than Dutch parents. A clear example is this quote from an Israeli parent:

> To stimulate them into movement and into rolling over. Let them stay on a surface and be active. And not just hold them in the arms or put in the baby bouncer. Put them on the belly whenever it is possible.

In addition, we analyzed the proportion of active manipulation activities out of all codes. An ANOVA showed that Israeli parents mentioned relatively more activities that involve active manipulation of movement than Dutch parents ($F(1, 342) = 20.22$, $p < .01$, $\eta^2 = .06$). The effect size is medium. Together these analyses show that Dutch parents used more general language when discussing motor development, whereas the Israeli parents discussed and practiced specific activities supporting motor development.

Discussion

Through using the framework of the developmental niche to analyze the role of culture in children's motor development, the main aim of this study was to explore whether middle class parents in the Netherlands and in Israel differ in their beliefs about infant motor development. Before analyzing differences between the samples, partial measurement invariance was found, which confirmed that parental beliefs about motor development could be measured by the same instrument in both cultures and could thus be compared. The results of this comparison, based on qualitative and quantitative data, show two distinct cultural models regarding infant motor development. On the one hand, while Dutch parents agreed that motor development is one of the most important things during the first year of life, they also believed in children's own pace and did not hold clear beliefs in favor of actively promoting motor development. On the other hand, the Israeli parents even more strongly agreed with the statement that motor development was of prime importance and also expressed firmer beliefs in actively stimulating motor development. In fact, Israeli parents elaborated on types of activities to support motor development, whereas the Dutch parents made comments about more general support of their infants without specifying types of activities. The larger importance attributed to motor development by the Israeli parents seems to result in a more proactive approach toward the motor domain, reflected in more active stimulation and actively seeking (professional) advice. Analyses of the Dutch sample's data suggested that parents believed that an infant would develop on its own pace when nurtured in the right conditions, possibly the conditions of rest and regularity (Harkness & Super, 2006; Super et al., 1996).

Besides these distinct cultural models, the results also show some effects of intracultural variability. More specifically, an effect of socioeconomic differences within cultures was found. However, no clear distinct developmental models could be distinguished for children of low or high SES backgrounds, as the differences were not consistent. Furthermore, the effect of culture was larger than the effect of SES.

The findings support the previous notion of the importance of exploring differences within "Western" cultures. As mentioned, there are similarities between these cultures, yet the cultures also show differences with regard to the goals and strategies they value regarding their infants and young children (Harkness & Super, 2006; Suizzo, 2004). Although the differences seem subtle (1 point on a 6-point scale), they are significant and have medium to large

effect sizes. To better understand the impact of the differences between the two cultures, future research should address the relation between beliefs and practices and beliefs and children's actual development. For example, if parents score one point lower on the belief scale of "Stimulation," how much less are they inclined to actively stimulate their infant's motor development and how well does their infant develop? Possibly the found differences in beliefs are, at least partly, the cause of cross-cultural variability in infant motor development (Adolph et al., 2010).

To the best of our knowledge previous studies on beliefs about motor development have focused on differences between non-Western rural cultures and Western, urban cultures (i.e., Keller et al., 2002). Based on these studies, researchers and practitioners may assume homogeneity in parenting within both groups (Harkness et al., 2000). The current study suggests that this assumption might not hold for all Western cultures. Our findings show that parental beliefs regarding motor development vary between Dutch and Israeli parents, suggesting two distinct cultural models on this issue within the "Western" world.

The results do imply that the intracultural variability is smaller in the Netherlands than in Israel. The Israeli sample included more diverse cultural backgrounds, which reflects the pluralistic society in Israel and possibly causes the larger variance among the Israeli parents (e.g., Cohen, 2007). The Dutch cultural model seems more homogeneous in this sense. However, another possible explanation for the difference in variance within countries could be the fact that the Dutch cultural model of rest and regularity has prevailed for the last century and the core ideas of rest and regularity are still part of the official pediatrician and mother- and child-clinic advice (Centrum voor Jeugd en Gezin, 2014). Furthermore, while discussing parenting issues, most Dutch websites mention rest, sleep, and regularity in sleeping and feeding practices (e.g., www.opvoeden.nl, www.mamaenzo.nl). In this sense, the model of the Dutch parents might be the result of official advice. An interesting find was that in the official guide ("Groeigids") that all Dutch parents receive from the mother- and child-clinics, no clear instructions are provided for gross motor activities (Centrum voor Jeugd en Gezin, 2014). Taken together, the results for the Dutch model are in line with the known Dutch model of stressing rest and regularity. Also, similar to German parents in the study of Keller and colleagues (2002), Dutch parents do not seem to emphasize motor skills as a developmental goal.

The fact that Israeli parents agreed more strongly with statements arguing the importance of following the "right" order of motor development might reflect an old-fashioned neural-maturationist view regarding a fixed developmental sequence of motor achievement. Such views were advocated by pioneers in the study of motor development such as Gesell, Shirley, and others. However, contemporary longitudinal and cross-cultural studies illustrate that the order of attainment of mobility skill in fact shows high variance (e.g., Adolph et al., 2010; Atun-Einy, Berger, & Scher, 2012; Onis, 2006). Nevertheless, the neural-maturationist view is still the basis for many standardized screening tools (Campbell, Palisano, & Orlin, 2012). These tools might influence the views of professionals and parents (Thelen, 2000). Moreover, milestone charts that are often presented to parents, suggest a fixed order of attainment of these milestones, while ignoring the natural variation in the order and pace of milestone attainment. The charts are often even culturally biased and reflect the order and pace that are typical to the culture in which they are created (Adolph & Franchak, 2017). The beliefs of Israeli parents might be influenced by such charts. For example, many websites that offer professional information for parents about development in Israel advocate the importance of attaining motor milestones in the right order and not skipping any milestones (see e.g., www.tipa.co.il or www.first-step.co.il).

Altogether, the emerging Israeli cultural model partly matches the broader Israeli cultural model of autonomy and self-expression as important skills for children (Feldman & Masalha, 2007; Seginer et al., 2007). Moreover, the larger variance found in the beliefs of the Israeli parents might reflect the more diverse nature of the Israeli sample and the Israeli society. Nevertheless, while most Israeli parents tend to follow the proactive model stressing stimulation, not all parents do so. Future studies could further examine this variance within the Israeli society and possibly point to differences between cultural subgroups within the Israeli culture.

Besides exploring the cultural models in both cultures, the current study examined whether the cultural differences persisted when other child background characteristics were taken into account. In other words, is there more intercultural variability than intracultural variability? As expected, when predicting the different belief scales by various background characteristics of the parents and the infant, culture remained the strongest predictor with the largest standardized regression coefficient for each belief scale, except for the belief of Natural development. This scale was only predicted by gender and SES. In addition, this scale did not distinguish between the two cultures and was only weakly related to several other beliefs about motor development, yet it was very strongly related to the belief in children's own developmental pace. However, this scale was part of the factor model in both samples and does remain an aspect of parental beliefs about motor development. One possible explanation is that people who believe that motor development happens naturally belong to two different groups. The first of these hypothesized groups believes that as motor development happens naturally you should not interfere with it and, therefore, applies low stimulation. The second group might believe that motor development happens naturally, but you can stimulate it. This may partially explain the pattern of findings. Future studies should further examine this scale and its relation to other scales and in particular its relation to actual motor development.

Some of the background variables did turn out to be predictors of beliefs (though to a lesser extent than culture). The models showed that parents of older children believe less in a need for stimulation and more in letting the child follow its own pace than parents of younger children. Also, parents of younger children tended to seek more advice. This might be because of natural lack of confidence of first-time parents with young children. As children grow older, parents gain confidence and their beliefs may become more influenced by their child's own development. The group of parents with children who have seen a physiotherapist is naturally a group of parents who seek advice as is also reflected in their beliefs. The fact that they score higher also on letting children follow their own pace, might reflect the influence of the information given by the physiotherapists. Future work will need to shed more light on these effects as well as on the effects of birth weight and gender.

This study is the first to systematically study parental beliefs regarding motor development cross-culturally. The use of mixed methods enabled us to gather quantitative data from a large sample

and conduct an in-depth analysis of parent's answers to open questions. Thus, we were able to measure differences on predefined constructs as well as analyze aspects that were not covered by these predefined constructs.

Several limitations should be considered. First, the study did not represent all cultural groups within the Netherlands and Israel, but was based on a convenience sample. We tried to minimize this limitation by collecting a mostly uniform sample in each site that included relatively highly educated, middle-class parents of a firstborn infant. Because the sample included only middle-class families, generalizability of the findings requires replication in lower SES families. Remarkably, a difference in SES was found between the Dutch and the Israeli sample. This could imply that cultural differences are because of differences in SES. However, our finding that the existing variance was mostly explained by culture and less by SES suggests differently.

Second, this study conducted a measurement invariance test and only found partial measurement invariance. Not finding full measurement invariance could be because of the difference in variance between the two cultures. This difference in variance reflects intracultural variability and does not necessarily rule out intercultural variability. In addition, finding unique measurement invariance between two cultures might suggest that development is not culturally constructed, which is not backed up by existing cross-cultural findings (Adolph et al., 2010). Still, through applying the measurement invariance model, we were able to show that the PB-MD can reliably be used in both cultures. Using this instrument, we tried to strike a balance between a quantitative and a qualitative approach possibly leading to a more elaborate exploration of parental beliefs about motor development.

Third, and last, a possible limitation of this study is that beliefs were investigated without actually linking them to practices or children's motor development. Future studies should further address the relation between beliefs and daily practices and children's development to further establish the validation of the measurement of parental beliefs.

Despite the limitations noted above, the current study makes an important contribution to the field of parental beliefs and of cross-cultural studies of motor development. We showed that within two Western cultures differences exist in parental beliefs regarding motor development. These differences are in line with observed differences in actual motor development, as reflected in the norms of standard tests of motor development (e.g., Steenis et al., 2015). Besides the importance of these findings to future research, they also form a contribution to the clinical field. Clinicians working with parents who try to influence children's motor development need to be aware of parental beliefs about motor development and take these cultural models into account. If parents do not believe that motor development should be supported, they might not practice stimulating activities. If an intervention is aimed at active stimulation and motor manipulation, these parents could be less likely to comply with an intervention. Finally, it is possible and even likely that the difference between Dutch and Israeli parents in terms of their beliefs extends beyond beliefs about motor development and will be evident also in beliefs about other aspects of infant development such as sleeping or feeding. Future studies could explore such differences. Moreover, given the importance of early motor development for further development in multiple domains (e.g., Iverson, 2010; Oudgenoeg-Paz et al., 2015; Walle, 2016) insights into the interrelation between beliefs about different domains are highly relevant.

References

Adolph, K. E. (2002). Learning to keep balance. In R. Kail (Ed.), *Advances in child development & behavior* (Vol. 30, pp. 2–50). Amsterdam, the Netherlands: Elsevier Science.

Adolph, K. E., & Franchak, J. M. (2017). The development of motor behavior. *Wiley Interdisciplinary Reviews: Cognitive Science, 8,* e1430. http://dx.doi.org/10.1002/wcs.1430

Adolph, K. E., Karasik, L. B., & Tamis-LeMonda, C. S. (2010). Motor skills. In M. H. Bornstein (Ed.), *Handbook of cultural developmental science* (pp. 61–88). New York, NY: Taylor & Francis.

Atun-Einy, O., Berger, S. E., & Scher, A. (2012). Pulling to stand: Common trajectories and individual differences in development. *Developmental Psychobiology, 54,* 187–198. http://dx.doi.org/10.1002/dev.20593

Atun-Einy, O., Oudgenoeg-Paz, O., & van Schaik, S. D. M. (2017). Parental beliefs and practices concerning motor development: Testing new tools. *European Journal of Developmental Psychology, 14,* 556–604. http://dx.doi.org/10.1080/17405629.2016.1263563

Berger, S. E., Theuring, C., & Adolph, K. E. (2007). How and when infants learn to climb stairs. *Infant Behavior and Development, 30,* 36–49. http://dx.doi.org/10.1016/j.infbeh.2006.11.002

Bornstein, M. H. (Ed.). (2002). Parenting infants. In *Handbook of parenting* (Vol. 1, 2nd ed., pp. 3–93). Mahwah, NJ: Erlbaum.

Bornstein, M. H., Haynes, O. M., Azuma, H., Galperín, C., Maital, S., Ogino, M., . . . Wright, B. (1998). A cross-national study of self-evaluations and attributions in parenting: Argentina, Belgium, France, Israel, Italy, Japan, and the United States. *Developmental Psychology, 34,* 662–676. http://dx.doi.org/10.1037/0012-1649.34.4.662

Byrt, T., Bishop, J., & Carlin, J. B. (1993). Bias, prevalence and kappa. *Journal of Clinical Epidemiology, 46,* 423–429. http://dx.doi.org/10.1016/0895-4356(93)90018-V

Campbell, S. K., Palisano, R. J., & Orlin, M. (2012). *Physical therapy for children*. Philadelphia, PA: Saunders company.

Centrum voor Jeugd en Gezin. (2014). *Groeigids* [Growth guide]. Retrieved from www.groeigids.nl

Cohen, A. (2007). An examination of the relationship between commitments and culture among five cultural groups of Israeli teachers. *Journal of Cross-Cultural Psychology, 38,* 34–49. http://dx.doi.org/10.1177/0022022106295440

Colson, E. R., Geller, N. L., Heeren, T., & Corwin, M. J. (2017). Factors associated with choice of infant sleep position. *Pediatrics, 140,* e20170596. http://dx.doi.org/10.1542/peds.2017-0596

Davis, B. E., Moon, R. Y., Sachs, H. C., & Ottolini, M. C. (1998). Effects of sleep position on infant motor development. *Pediatrics, 102,* 1135–1140. http://dx.doi.org/10.1542/peds.102.5.1135

De Kegel, A., Peersman, W., Onderbeke, K., Baetens, T., Dhooge, I., & Van Waelvelde, H. (2013). New reference values must be established for the Alberta Infant Motor Scales for accurate identification of infants at risk for motor developmental delay in Flanders. *Child: Care, Health and Development, 39,* 260–267. http://dx.doi.org/10.1111/j.1365-2214.2012.01384.x

Dennis, W., & Dennis, M. G. (1940). Cradles and cradling practices of the pueblo Indians. *American Anthropologist, 42,* 107–115. http://dx.doi.org/10.1525/aa.1940.42.1.02a00070

Ejemen, O. P., Bernard, O., & Oluwafemi, D. I. (2015). Socio-cultural context of developmental milestones in infancy in south west Nigeria: A qualitative study. *European Scientific Journal, 11,* 185–201.

Feldman, R., & Masalha, S. (2007). The role of culture in moderating the links between early ecological risk and young children's adaptation. *Development and Psychopathology, 19,* 1–21. http://dx.doi.org/10.1017/S0954579407070010

Feldman, R., Masalha, S., & Alony, D. (2006). Microregulatory patterns of family interactions: Cultural pathways to toddlers' self-regulation. *Journal of Family Psychology, 20,* 614–623. http://dx.doi.org/10.1037/0893-3200.20.4.614

Gibson, E. J. (1988). Exploratory behavior in the development of perceiving, acting and the acquiring of knowledge. *Annual Review of Psychology, 39,* 1–42. http://dx.doi.org/10.1146/annurev.ps.39.020188.000245

Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology, 8,* 23–34. http://dx.doi.org/10.20982/tqmp.08.1.p023

Harkness, S., & Super, C. M. (2006). Themes and variations: Parental ethnotheories in Western cultures. In K. Rubin (Ed.), *Parental beliefs, parenting, and child development in cross-cultural perspective* (pp. 61–79). New York, NY: Psychology Press.

Harkness, S., Super, C. M., Moscardino, U., Rha, J., Blom, M. J. M., Huitrón, B., . . . Palacios, J. (2007). Cultural models and developmental agendas: Implications for arousal and self-regulation in early infancy. *The Journal of Developmental Processes, 5,* 5–39.

Harkness, S., Super, C. M., & van Tijen, N. (2000). Individualism and the "Western mind" reconsidered: American and Dutch parents' ethnotheories of the child. In S. Harkness, C. Raeff, & C. M. Super (Eds.), *Variability in the social construction of the child New Directions for Child and Adolescent Development, 87,* 23–39.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33,* 61–83. http://dx.doi.org/10.1017/S0140525X0999152X

Hofstede, G. (1983). National cultures in four dimensions: A research-based theory of cultural differences among nations. *International Studies of Management & Organization, 13,* 46–74. http://dx.doi.org/10.1080/00208825.1983.11656358

Hopkins, B., & Westra, T. (1989). Maternal expectations of their infants' development: Some cultural differences. *Developmental Medicine and Child Neurology, 31,* 384–390. http://dx.doi.org/10.1111/j.1469-8749.1989.tb04008.x

Hopkins, B., & Westra, T. (1990). Motor development, maternal expectations, and the role of handling. *Infant Behavior and Development, 13,* 117–122. http://dx.doi.org/10.1016/0163-6383(90)90011-V

Israel Central Bureau of Statistics. (2013). *Statistical abstracts of Israel* (No. 53). Jerusalem, Israel: Keter Press.

Iverson, J. M. (2010). Developing language in a developing body: The relationship between motor development and language development. *Journal of Child Language, 37,* 229–261. http://dx.doi.org/10.1017/S0305000909990432

Keller, H., Yovsi, R. D., & Voelker, S. (2002). The role of motor stimulation in parental ethnotheories: The case of Cameroonian Nso and German women. *Journal of Cross-Cultural Psychology, 33,* 398–414. http://dx.doi.org/10.1177/002221020330040003

Kohen-Raz, R. (1968). Mental and motor development of Kibbutz, institutionalized, and home-reared infants in Israel. *Child Development, 39,* 489–503. http://dx.doi.org/10.2307/1126960

Konner, M. J. (1977). Infancy among the Kalahari Desert San. In P. H. Leiderman, S. R. Tulkin, & A. Rosenfeld (Eds.), *Culture and infancy: Variations in the human experience* (pp. 287–328). New York, NY: Academic Press.

Lobo, M. A., & Galloway, J. C. (2012). Enhanced handling and positioning in early infancy advances development throughout the first year. *Child Development, 83,* 1290–1302. http://dx.doi.org/10.1111/j.1467-8624.2012.01772.x

Majnemer, A., & Barr, R. G. (2005). Influence of supine sleep positioning on early motor milestone acquisition. *Developmental Medicine and Child Neurology, 47,* 370–376. http://dx.doi.org/10.1017/S0012162205000733

McClelland, D. C. (1976). *The achievement motive*. New York, NY: Irvington Publishers.

Murphey, D. A. (1992). Constructing the child: Relations between parents' beliefs and child outcomes. *Developmental Review, 12,* 199–232. http://dx.doi.org/10.1016/0273-2297(92)90009-Q

Muthén, L. K., & Muthén, B. O. (1998–2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Author.

Onis, M., & the WHO Multicentre Growth Reference Study Group. (2006). WHO Motor Development Study: Windows of achievement for six gross motor development milestones. *Acta Paediatrica, 450,* 86–95.

Oudgenoeg-Paz, O., Leseman, P. P. M., & Volman, M. C. (2015). Exploration as a mediator of the relation between the attainment of motor milestones and the development of spatial cognition and spatial language. *Developmental Psychology, 51,* 1241–1253. http://dx.doi.org/10.1037/a0039572

Pin, T., Eldridge, B., & Galea, M. P. (2007). A review of the effects of sleep position, play position, and equipment use on motor development in infants. *Developmental Medicine and Child Neurology, 49,* 858–867. http://dx.doi.org/10.1111/j.1469-8749.2007.00858.x

Rosenthal, M. K., & Roer-Strier, D. (2001). Cultural differences in mothers' developmental goals and ethnotheories. *International Journal of Psychology, 36,* 20–31. http://dx.doi.org/10.1080/00207590042000029

Seginer, R., Shoyer, S., Hossessi, R., & Tannous, H. (2007). Adolescent family and peer relationships: Does culture matter? *New Directions for Child and Adolescent Development, 2007,* 83–99. http://dx.doi.org/10.1002/cd.190

Shapira, Y., & Harel, S. (1983). Standardization of the Denver developmental screening test for Israeli children. *Israel Journal of Medical Sciences, 19,* 246–251. Retrieved from http://europepmc.org/abstract/MED/6189803

Steenis, L. J. P., Verhoeven, M., Hessen, D. J., & van Baar, A. L. (2015). Performance of Dutch children on the Bayley III: A comparison study of US and Dutch norms. *PLoS ONE, 10,* e0132871. http://dx.doi.org/10.1371/journal.pone.0132871

Suizzo, M. A. (2004). French and American mothers' childrearing beliefs stimulating, responding, and long-term goals. *Journal of Cross-Cultural Psychology, 35,* 606–626. http://dx.doi.org/10.1177/0022022104268391

Super, C. M. (1976). Environmental effects on motor development: The case of "African infant precocity". *Developmental Medicine and Child Neurology, 18,* 561–567. http://dx.doi.org/10.1111/j.1469-8749.1976.tb04202.x

Super, C. M., & Harkness, S. (1986). The developmental niche: A conceptualization at the interface of child and culture. *International Journal of Behavioral Development, 9,* 545–569. http://dx.doi.org/10.1177/016502548600900409

Super, C. M., Harkness, S., van Tijen, N., van der Vlugt, E., Fintelman, M., & Dijkstra, J. (1996). The three R's of Dutch childrearing and the socialization of infant arousal. In S. Harkness & C. M. Super (Eds.), *Parents' cultural belief systems: Their origins, expressions, and consequences* (pp. 447–466). New York, NY: Guilford Press.

Synnott, K., Bogue, J., Edwards, C. A., Scott, J. A., Higgins, S., Norin, E., . . . Adam, R. (2007). Parental perceptions of feeding practices in five European countries: An exploratory study. *European Journal of Clinical Nutrition, 61,* 946–956. http://dx.doi.org/10.1038/sj.ejcn.1602604

Thelen, E. (2000). Motor development as foundation and future of developmental psychology. *International Journal of Behavioral Development, 24,* 385–397. http://dx.doi.org/10.1080/016502500750037937

Tikotzky, L., & Sadeh, A. (2009). Maternal sleep-related cognitions and infant sleep: A longitudinal study from pregnancy through the 1st year. *Child Development, 80,* 860–874. http://dx.doi.org/10.1111/j.1467-8624.2009.01302.x

Tuli, M. (2014). Parental reconstruction about the care and development of young children. In N. Chaudhary, S. Anandalakshmy, & J. Valsiner (Eds.), *Cultural realities of being. Abstract ideas within everyday lives* (pp. 69–87). New York, NY: Routledge.

van Beek, Y., Genta, M. L., Costabile, A., & Sansavini, A. (2006). Maternal expectations about infant development of pre-term and full-term infants: A cross-national comparison. *Infant and Child Development, 15,* 41–58. http://dx.doi.org/10.1002/icd.428

van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology, 9,* 486–492. http://dx.doi.org/10.1080/17405629.2012.686740

van Sleuwen, B. E., Engelberts, A. C., Boere-Boonekamp, M. M., Kuis, W., Schulpen, T. W., & L'Hoir, M. P. (2007). Swaddling: A systematic review. *Pediatrics, 120,* e1097–e1106. http://dx.doi.org/10.1542/peds.2006-2083

Walle, E. A. (2016). Infant social development across the transition from crawling to walking. *Frontiers in Psychology, 7,* 960.

Worthman, C. M. (2010). The ecology of human development: Evolving models for cultural psychology. *Journal of Cross-Cultural Psychology, 41,* 546–562. http://dx.doi.org/10.1177/0022022110362627

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