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RESEARCH ARTICLE

The transition to parenthood and development of parents' personality and emotional competencies

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To investigate the influence of the transition to parenthood on parents' personality traits and emotional competencies, the authors conducted a two-wave longitudinal research programme (during pregnancy and 6 months postpartum) on 307 parents (214 primiparous and 93 multiparous). At each wave, participants completed a questionnaire assessing personality traits (NEO-60) and emotional competencies (TEIQue). The main results showed few personality and emotional competencies mean-level changes, all gender and socio-economic status taken into account. Globally, the transition to parenthood does not lead to short-term changes, which confirms personality stability theory. Nevertheless, when gender effects were set aside, different developmental trajectories were observed between mothers and fathers. Parenthood seems to have a positive effect on the mother's development. Finally, SES differences in personality and emotional competencies development were not observed. Neither educational level, associated to cognitive flexibility, nor income level, allowing access to parental services and goods, affected parents' personality development.

Keywords: parenthood; personality development; emotional competencies; gender differences

The transition to parenthood is considered to be a major life stage. 'People who become parents and are involved in the raising of children are transformed and follow a different developmental trajectory from people who do not engage in parenting roles' (Palkovitz *et al.* 2003). However, what kind of transformation can we expect as a parent? Two visions of how parenthood affects personal life may be imagined: a positive one, with feelings of joy, personal growth, social integration, and affect-sharing within the family; and a more negative one, with anxiety related to the child's health and education, decrease of marital satisfaction, and financial problems (Bird 1997). Previous studies (Nomaguchi and Milkie 2003, Keizer *et al.* 2010) have shown mixed and sometimes inconsistent results concerning parents' development. The aim of the current article, then, is to study the particular effect of parenthood on the individual's life; that is, the impact of the transition to parenthood on parents' personality and emotional competencies.

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The transition to parenthood and parental development

This question is rooted in life-span developmental theory. This theory maintains that the individual's development takes place in the context of various age-graded developmental tasks and challenges (Erikson 1959) and role transitions (Caspi 1987), which form a normative reference system of development-related expectations and give a structure to the life-course. One of the major life transitions is the birth of a child (Salmela-Aro *et al.* 2000). Becoming a parent is a turning-point during which the life-course takes a new direction, implying many interpersonal (e.g. decrease in marital satisfaction (Lawrence *et al.* 2008)) and intrapersonal (e.g. development of a new identity (Delmore-Ko 2000)) changes. The transition to parenthood also implies changes in gender role attitudes (Katz-Wise *et al.* 2010). According to social structural theory (Eagly and Wood 1999), due to the biological role in child-bearing (pregnancy, childbirth, and lactation) and to cultural expectations of motherhood, mothers display a different parenting role and develop differently from men. Couples often tend to fall into more traditional gender roles after becoming parents (Nomaguchi and Milkie 2003, Katz-Wise *et al.* 2010).

Although personal and gender-related changes linked to parenthood have already been observed, no studies have yet considered the impact of the transition to parenthood on parents' personalities and emotional competencies. Two possibilities exist in regard to this question. First, the transition to parenthood is a transformative life event insomuch as it induces a radical modification of personality and/or emotional competencies. Second, according to the sociological point of view, the notion of life transition is constructed by society to create a sense of transition. However, no differences would appear between before and after birth (LaRossa and Sinha 2006). Consequently, the transition to parenthood would be experienced as a transformative event, but there would not be any radical change of personality and/or emotional competencies.

Personality development: stability versus change?

Personality research (McCrae and Costa 1999, DeYoung *et al.* 2007) has reached near consensus on a five-trait structure of personality (i.e. the 'Big Five'): Neuroticism (withdrawal behaviour, anxiety, and detection of threat), Extraversion (intensive pursuit of interpersonal relationships, activities, stimulations, and joy), Agreeableness (empathic orientation), Openness to experience (intellectual curiosity, imagination, and new cultural experiences), and Conscientiousness (ability to organize, plan, and respect conventions).

Although consensus has been reached on a five-trait structure of personality, there is an ongoing debate on personality development, with some arguing for the immutability of personality, especially in adulthood (McCrae and Costa 1999, 2006), and others arguing that traits change with time (Helson and Stewart 1994, Helson *et al.* 2002, Caspi *et al.* 2005, Roberts *et al.* 2006). Can personality change? There is no simple answer to this question because there are different ways of conceptualizing and measuring personality stability (Roberts and Pomerantz 2004, Caspi and Shiner 2006, Morizot and Miranda 2007). The broadest distinction is between homotypic and heterotypic stability. Homotypic stability refers to the stability of the exact feelings, thoughts, and behaviours across time. Heterotypic stability refers to the

stability of theoretical personality traits that have different manifestations at different ages (and so different measures). The assessment of homotypic stability is less conceptual and more statistical. It uses the exact same measure of personality across time. Four types of homotypic stability are observed: (1) absolute stability (i.e. mean-level stability), (2) differential stability (i.e. the degree to which people high or low on a trait at one point maintain their relative ordering), (3) structural stability (i.e. similarity over time in patterns of covariation among traits), and (4) ipsative stability (i.e. stability in the patterning of personality characteristics within a person). Absolute stability can result from maturational processes and/or environmental factors that influence a population in a similar manner (Roberts *et al.* 2006). It refers to the average trait level of a population and serves to show if the sample as a whole is increasing or decreasing on a trait. In the current study, this kind of stability was chosen and analysed, with the objective of observing the variation of the mean-level of parents' personality traits between pregnancy and 6 months postpartum.

Controversies persist regarding mean-level stability versus change of personality over the whole population (McCrae and Costa 2006, Roberts *et al.* 2006). On the one hand, defenders of stability (McCrae and Costa 1997, 1999, 2006) affirm that there is little meaningful mean-level change in any personality traits once adulthood is reached, at around the age of 30. Moreover, observed mean-level changes occur because of genetic predispositions to change in particular ways (McCrae 2004). Recently, McCrae and Costa (2006) have added that personality traits are fundamental, endogenous dispositions that can be modified only by interventions, processes, or events affecting biological bases. On the other hand, defenders of change affirm that personality traits show a clear pattern of normative change across the life-course (Roberts *et al.* 2006). People become more socially dominant, conscientious, and emotionally stable. Social vitality and openness to experience increase in young adulthood and decrease in old age. Most changes occur during young adulthood and are probably due to 'normative functional maturation' (Hogan and Roberts 2004, Caspi *et al.* 2005). This life period is indeed characterized by many life experiences and transitions such as the transition to parenthood (Roberts *et al.* 2006). These life transitions imply new social roles (e.g. parent) and expectations (e.g. child's upbringing), to which people must adapt. This adaptation causes personality changes, most frequently in a positive way (Roberts *et al.* 2003, Roberts *et al.* 2006).

Emotional competencies development

Individuals differ in the extent to which they attend to, process, and utilize affect-laden information of an intrapersonal or interpersonal nature (Petrides and Furnham 2003, Mikolajczak *et al.* 2007). They tend to differ in their way of understanding, managing, regulating, and using their own and others' emotions (Mikolajczak *et al.* 2009). Two emotional competencies (EC) constructs exist: ability EC and trait EC. The ability perspective (Salovey and Mayer 1990) concerns emotion-related cognitive abilities measured via performance-based tests. It conceives of EC as a form of intelligence. On the other hand, the trait perspective (Petrides and Furnham 2000, 2001, Pérez *et al.* 2005, Mikolajczak *et al.* 2007) concerns emotion-related dispositions and self-perceptions assessed through self-reports. It conceives of EC as a form of personality. In this article, we focus on the latter perspective because of the notably

difficult operationalization of ability EC. In contrast the operationalization of trait EC is straightforward because the construct includes self-perceptions and dispositions, which fit the subjective nature of emotions (Petrides *et al.* 2007).

A four-factor model of emotional competencies traits (i.e. the TEIQue) has been established (Petrides and Furnham 2003, Mikolajczak *et al.* 2007): Well-being (self-esteem, trait happiness, and trait optimism), Self-control (emotion regulation, stress management, and low impulsiveness), Emotionality (emotional perception, emotional expression, relationship skills, and empathy), and Sociability (social competence, other's emotional management, and assertiveness). Two others subscales form a part of emotional competencies but do not belong to any particular factor: Adaptability and Self-motivation. 'Adaptable' people are flexible and willing to adapt to new conditions. Self-motivated individuals tend to be driven and are unlikely to give up in the face of adversity.

As mentioned previously, trait EC concerns emotions-related dispositions and is conceptualized in terms of personality (Petrides and Furnham 2001). More precisely, trait EC is viewed as a single framework that contains all affect-related aspects of personality. It is a distinct (it can be isolated in personality space) compound (it is partially determined by several personality traits) construct located at the lower levels of personality hierarchies (trait EC is oblique, rather than orthogonal to the Big Five). For example, propensity to decode others' emotions, a facet of trait EC, can be represented and predicted by a complex function of Big Five factors (e.g. low Extraversion, high Neuroticism, and high Agreeableness) (Mikolajczak *et al.* 2007). Contrary to the high-order traits of the Big Five, the lower-order traits EC allow easier prediction of behaviour, attitudes, and achievement (Petrides *et al.* 2007).

In this article, emotional competencies are considered because the transition to parenthood and potential intrapersonal changes especially concern the emotional field. Emotions are involved in this life transition. For instance, it is a turning-point, during which mothers can develop depressive symptoms while strong feelings also develop towards the newborn baby. Therefore, given its emotional characteristic, we would expect that the transition to parenthood mainly affects emotional competencies rather than personality traits.

Current study and hypotheses

The aim of the current study is to observe the impact of the transition to parenthood on parents' personality traits and emotional competencies. Three groups are compared which allow distinguishing effects from transition to parenthood than from childbirth: (1) childless adults (absence of life event), (2) primiparous parents (transition to parenthood), and (3) multiparous parents (childbirth). With this objective in view, a two-wave longitudinal research programme (pregnancy and 6 months postpartum) with self-reported measures has been carried out.

Hypothesis 1: Development versus stability of parent's personality

As regards personality, both opposite theoretical positions prevent us from putting forward a hypothesis on personality stability or development associated with the transition to parenthood. If development is observed, this life transition should be considered as a transformative life event which supports personality developmental

theory (Hogan and Roberts 2004, Caspi *et al.* 2005, Roberts *et al.* 2006). If stability is observed, the notion of the transition to parenthood should be considered as constructed by society to have an age-graded reference system (LaRossa and Sinha 2006). Consequently, the transition to parenthood should be experienced as a transformative life event without changing personality mean-level, which supports personality immutability theory (McCrae and Costa 1999, 2006).

Hypothesis 2: Positive development of parents' emotional competencies

As for potential development of emotional competencies, socio-emotional selectivity theory (Carstensen 2006) has showed that as one's life on earth is perceived to become shorter, one tends to prioritize emotion regulation. Therefore, individuals are more motivated to regulate their emotions as they get older (Ready and Robinson 2008) because they increasingly want to maximize pleasure and minimize displeasure (Charles and Carstensen 2007). As a result, more frequent emotion regulation efforts and higher levels of emotional well-being are observed. Yet, the transition to parenthood and, to a lesser extent, the childbirth imply a new life stage with new developmental tasks and roles that lead to more maturity. It is a sign of some advance in adult age. Moreover, this life event especially affects the emotional field. Therefore, we might expect that the transition to parenthood implies development in emotional competencies. Given that childbirth is a normative and significant event that is often lived as positive by most individuals, we expect positive changes of emotional competencies.

Hypothesis 3: Gender differences

Some moderators are included in this model. The first one concerns the observation of gender differences in parental development. Parental developmental theory (Koivunen *et al.* 2009, Katz-Wise *et al.* 2010) has indeed shown that the transition to parenthood induces gender role attitudes with more traditional gender roles after becoming parents (Nomaguchi and Milkie 2003, Katz-Wise *et al.* 2010). Therefore, in this study, we expect that mothers and fathers experience different developmental trajectories. Moreover, due to the particular biological role in child-bearing and to cultural expectations of motherhood, mothers tend to display a different parenting role from men (Eagly and Wood 1999). In view of the fact that the mother's role is particularly viewed in a good light in Western society (Stryker and Serpe 1982, Katz-Wise *et al.* 2010), becoming a mother would cause more positive changes.

Hypothesis 3.1: Gender differences and personality development

The potential effect of gender as a moderator of personality change has already been tested. Globally, no gender differences appeared. Women and men develop similarly (Roberts *et al.* 2006). As regards parents' personality development, we do not expect significant gender differences.

Hypothesis 3.2: Gender differences and emotional competencies development

Gender differences in emotional competencies have already been observed (Mikolajczak *et al.* 2007). Women score higher on Emotionality, which is in line with Western norms, according to which expressing emotions is viewed as 'unmanly' (Brody 2000). As for men, they have a higher level of Self-control, which is certainly due to the gender-differenced socialization of emotion (i.e. 'men do not show their feelings'). They also have a higher score on Socialization, in terms of asserting oneself and influencing others' emotions. Consequently, given the inert emotional gender differences, in this study, we expect that emotional competencies development occurs differently for mothers and fathers.

Hypothesis 4: SES differences

The second moderator included in this model is the socio-economic status (SES), represented by educational level and income status. Indeed, the transition to parenthood tends to magnify low-SES individuals' vulnerabilities, such as emotional distress and weak coping resources (Puckering 2004). These specific environmental contingencies might contribute to personality and emotional competencies change (Roberts *et al.* 2008). Consequently, we expect development to occur differently between low-SES and high-SES parents. Moreover, effects will be examined separately between educational and income levels because they imply different processes: the former refers to cognitive flexibility, such as adopting the child's perspective, while the latter concerns access to goods and services, such as crèche, babysitter, or antenatal class.

Hypothesis 4.1: SES differences and personality development

According to Roberts *et al.* (2008), personality might change in response to contingencies in the environment found in social roles. Yet, low-SES parents have difficulties in coping with transitional changes, let-alone access to goods and services. Consequently, following the transition to parenthood, low-SES people tend to experience deeper difficulties for a long time. So, they have to deal with specific environmental contingencies, which imply personality change. We therefore hypothesize that low-SES parents would present more personality change, compared to high-SES ones since, due to their economic and educational advantages, this latter category can more easily cope with transitional changes.

Hypothesis 4.2: SES differences and emotional competencies development

SES differences in emotional competencies have already been observed (Puckering 2004, Mikolajczak *et al.* 2007). For instance, low-SES people experience more emotional distress (Puckering 2004) and show weaker emotional competencies (especially Well-being, Self-control, and Sociability) than do high-SES ones (Mikolajczak *et al.* 2007). In addition, the transition to parenthood tends to magnify these vulnerabilities (Puckering 2004). Consequently, in this article, we expect that emotional competencies development occurs differently between low-SES and high-SES parents, with a more negative trajectory for low-SES ones.

Method

Sample

The hypotheses generated were tested on the one hand among primiparous and multiparous parents, and on the other hand among childless adults constituting the control group.

With regard to parents, data were collected from a good-sized sample of 214 primiparous parents ($N = 133$ mothers and $N = 81$ fathers) aged from 19 to 41 years old ($M = 28.20$, $sd = 3.71$ for the overall sample; $M = 27.45$, $sd = 3.33$ and $M = 29.42$, $sd = 3.99$, respectively, for mothers and fathers) and 93 multiparous parents ($N = 58$ mothers and $N = 35$ fathers) aged from 22 to 43 years old ($M = 31.50$, $sd = 4.35$ for the overall sample; $M = 30.25$, $sd = 3.96$ and $M = 33.54$, $sd = 4.22$, respectively, for mothers and fathers). Two waves of data were collected in a longitudinal research program at two points of parenthood: pregnancy ($M = 25.81$ pregnancy weeks, $sd = 8.68$) and 6 months post partum ($M = 24.63$ weeks post partum, $sd = 4.35$). Both during pregnancy and at 6 months postpartum, depression was assessed by means of the Beck Depression Inventory Short Form Items (BDI-13 (Collet and Cottraux 1986, Beck and Garbin 1988)). The difference between the two measures (depression at 6 months postpartum and depression during pregnancy) allowed us to identify postnatally depressed parents (a difference of more than 2 points) with the objective of withdrawing them from the sample.

With regard to the control group, data were collected from a good-sized sample of 124 childless adults ($N = 84$ women and $N = 40$ men) aged from 19 to 52 years old ($M = 25.73$, $sd = 5.55$ for the overall sample; $M = 24.77$, $sd = 4.46$ and $M = 27.72$, $sd = 6.99$, respectively, for women and men). Two waves of data were collected with a 6-month interval. At Time 1, 113 participants were in a relationship, compared to 111 participants at Time 2.

For all participants, educational level was distributed as follows: low level (secondary school at most) and high level (higher education). In Belgium, a secondary school diploma is necessary to gain access to the job market (Colicis *et al.* 2004). Table 1 displays the distribution of participants between these two groups.

Family incomes were represented by four household income groups: 0–1999€, 2000€–3499€, 3500€–4999€, and more than 5000€. In Belgium, the mean income is 2987€ (Colicis *et al.* 2004). Below 2000€, a family is near the poverty line. Between 3500€ and 4999€, incomes are considered as above average. Finally, incomes above 5000€ are very high. Table 2 displays the distribution of participants between these four income groups.

Table 1. Descriptives of educational level.

	Low education	High education	Total
Primiparous parents	49	165	214
Multiparous parents	31	62	93
Childless adults	18	106	124
Total	98	333	431

Table 2. Descriptives of family income.

	0–1999€	2000–3499€	3500–4999€	More than 5000€	Total
Primiparous parents	36	137	33	8	214
Multiparous parents	22	44	22	5	93
Childless adults	51	53	18	2	124
Total	109	234	73	15	447

Procedure

Parents were recruited with the assistance of gynaecologists, sponsors, magazines, and newspapers. Childless adults were recruited with the assistance of psychologists' students. At the two waves of data collection, parents and childless adults completed a questionnaire on the Internet via Lime Survey or completed a paper version. For ethical reasons, this study was registered with the Commission for the Protection of Private Life.

Measures

Socio-demographic variables

Socio-demographic variables were collected during the first wave of data collection: gender, date of birth, nationality, educational level, and family income. In addition, parents were asked for details of primiparity and weeks of pregnancy (Time 1, pregnancy) or for the child's age (Time 2, 6 months postpartum).

Longitudinal variables

Personality (NEO-60). At the two waves of data collection, personality was assessed by means of a short self-report version of NEO-PI-R, the NEO-60 (Aluja *et al.* 2005). This questionnaire consists of five subscales (12 items in each): Neuroticism (anxiety, distress, and nervousness), Extraversion (quantity and intensity of interpersonal interaction and capacity for joy), Agreeableness (kindness, sympathy, and empathy), Openness to experience (pursuit of new experiences, broad interests, and imagination), and Conscientiousness (organization, strong sense of purpose, and high standards). A five-point Likert-type scale was provided for each item ranging from 'Strongly disagree' to 'Strongly agree'. Cronbach's alpha ranged from 0.70 to 0.87 (Aluja *et al.* 2005).

Emotional competencies (TEIQue). At the two waves of data collection, emotional competencies were assessed by means of an intermediate version of the self-report Trait Emotional Intelligence Questionnaire (TEIQue) (Mikolajczak *et al.* 2007). This questionnaire consists of four factors: Well-being (self-esteem, trait happiness, and trait optimism; 14 items), Self-control (emotion regulation, stress management, low impulsiveness; 20 items), Emotionality (emotion perception, emotion expression, relationship skills, and empathy; 19 items), and Sociability (social competence, others' emotion management, and assertiveness; 14 items). Two subscales are also provided: Adaptability (flexible and willing to adapt to new conditions; 4 items) and Self-motivation (driven and unlikely to give up in the face of adversity; 4 items).

A five-point Likert-type scale was provided for each item ranging from 'Not at all agree' to 'Absolutely agree'. Cronbach's alpha ranged from 0.71 to 0.91 (Mikolajczak *et al.* 2007).

Results

Preliminary analyses

At the two waves of data collection, preliminary analyses were performed on the items of the NEO-60 and the TEIQue to assess if the factor solution could be replicated. First, a principal component analysis (PCA) was conducted on the 60 items of the NEO-60 with orthogonal rotation (varimax). The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = 0.84 (Time 1 and 2), which is well above the acceptable limit of 0.50 (Field 2009). Bartlett's test of sphericity of Time 1 [chi-square (1770) = 10,311.44, $p < 0.001$] and Time 2 [chi-square (1770) = 11,821.20, $p < 0.001$] indicated that correlations between items were sufficiently large for PCA. A five-factor solution emerged explaining 40.14% (Time 1) and 42.90% (Time 2) of the variance. Cronbach's alphas (αs) ranged from 0.77 to 0.88 (Time 1) and from 0.81 to 0.89 (Time 2).

Second, a PCA was conducted on the 75 items of the TEIQue with orthogonal rotation (varimax). The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = 0.88 (Time 1) and 0.89 (Time 2), which is well above the acceptable limit of 0.50 (Field 2009). Bartlett's test of sphericity of Time 1 [chi-square (2775) = 14,400.23, $p < 0.001$] and Time 2 [chi-square (2775) = 16,651.92, $p < 0.001$] indicated that correlations between items were sufficiently large for PCA. A four-factor and two-subscale solution emerged explaining 37.44% (Time 1) and 40.38% (Time 2) of the variance. Cronbach's alphas (αs) ranged from 0.67 to 0.87 (Time 1) and from 0.70 to 0.89 (Time 2).

Other preliminary analyses were conducted at the two waves of data collection by correlating personality and emotional competencies. These correlations are displayed in Table 3. Numerous significant correlations were observed in the expected direction, confirming the validity of the measures.

A crosstab was conducted with the whole sample which coherently reported a significant association between educational level and income level chi-square (3) = 18.77, $p < 0.001$. The probability for a high-education person to have higher incomes was high. Nevertheless, since these variables underlie different processes, as mentioned in the introductory section, their effect was treated separately in the current study.

A last preliminary analysis was computed by comparing base level (Time 1 scores) according to (1) group, (2) gender, and (3) interaction group × gender. Given the large size of the sample, we only considered results with a significant threshold of 0.01. Significant differences between parents and childless adults in base levels appeared for personality and emotional competencies. At Time 1, childless adults had a higher score on Neuroticism [F(2, 443) = 7.41, $p < 0.01$] and Openness to experience [F(2, 443) = 4.75, $p < 0.01$] and a lower score on Agreeableness [F(2, 443) = 5.95, $p < 0.01$] than parents. Since childless adults were on average younger than parents, these results are difficult to interpret in terms of whether they are due to age or to adult status.

Table 3. Correlations between personality and emotional competencies (Time 1 and Time 2).

	Neuroticism		Extraversion		Openness		Agreeableness		Conscientiousness	
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
Self-control	−0.59***	−0.57***	ns	0.11*	ns	ns	ns	0.12*	0.31***	0.31***
Well-being	−0.70***	−0.67***	0.46***	0.48***	0.15**	0.13**	0.12*	0.16**	0.32***	0.39***
Emotionality	−0.14**	−0.22***	0.45***	0.47***	0.28***	0.26***	0.23***	0.31***	0.22***	0.31***
Sociability	−0.39***	−0.39***	0.37***	0.39***	0.26***	0.23***	−0.23***	−0.17***	0.30***	0.28***
Motivation	−0.38***	−0.37***	0.35***	0.38***	0.10*	ns	ns	0.16**	0.56***	0.58***
Adaptability	−0.38***	−0.31***	0.35***	0.32***	0.25***	0.26***	−0.11*	0.09*	0.26***	0.26***

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Furthermore, a main gender-related effect in base levels appeared for personality and emotional competencies. At Time 1, women had a higher score on Neuroticism [$F(1, 444) = 49.42$, $p < 0.001$], Extraversion [$F(1, 444) = 8.29$, $p < 0.01$], Agreeableness [$F(1, 444) = 11.78$, $p < 0.01$], and Emotionality [$F(1, 444) = 15.73$, $p < 0.001$] and a lower score on Self-control [$F(1, 444) = 53.38$, $p < 0.001$].

Finally, no interaction effect of group × age was reported.

Analyses

To test the impact of the transition to parenthood on parents' personality and emotional competencies, the three groups of participants (primiparous parents, multiparous parents and childless adults) were compared. On the basis of repeated-measures design, analyses were computed to observe if significant differences existed between scores at Time 1 (or pregnancy) and scores at Time 2 (or 6 months postpartum) in each group of participants.

As expected, no difference was noted among childless adults. Similarly, no difference was noted among multiparous parents, while a single principal effect was observed among primiparous parents showing a decrease in Extraversion [$F(1, 212) = 8.29$, $p < 0.01$] between pregnancy ($M = 3.80$, $sd = 0.59$) and 6 months postpartum ($M = 3.73$, $sd = 0.62$). Descriptive data are presented in Table 4.

Three moderators were then separately included in the model: gender, educational level, and income level. When gender was included as moderator, two effects were observed on emotional competencies. First, primiparous mothers' scores increased and primiparous fathers' scores decreased in Self-control with, respectively, $M = 3.20$ to 3.27 ($\sigma = 0.50$ and 0.55) for mothers and $M = 3.56$ to 3.45 ($\sigma = 0.46$ and 0.48) for fathers [$F(1, 212) = 10.02$, $p < 0.01$]. Second, multiparous mothers' scores increased and multiparous fathers' scores decreased in Adaptability with, respectively,

Table 4. Descriptive data.

	Primiparous parents				Multiparous parents				Childless adults			
	T1		T2		T1		T2		T1		T2	
	M	σ	*M*	σ	*M*	σ	*M*	σ	*M*	σ	*M*	σ
Neuroticism	2.66	0.66	2.70	0.72	2.51	0.75	2.61	0.79	2.85	0.70	2.87	0.73
Extraversion	3.80	0.59	3.73	0.62	3.68	0.56	3.73	0.64	3.68	0.47	3.64	0.49
Openness	3.23	0.67	3.22	0.67	3.25	0.65	3.29	0.69	3.41	0.64	3.42	0.60
Agreeableness	3.57	0.57	3.59	0.60	3.55	0.54	3.58	0.74	3.38	0.54	3.40	0.52
Conscientiousness	4.00	0.55	3.98	0.60	3.95	0.59	4.00	0.62	3.92	0.50	3.87	0.50
Self-control	3.34	0.51	3.34	0.53	3.36	0.52	3.41	0.56	3.26	0.54	3.25	0.48
Well-being	3.96	0.53	3.92	0.56	3.95	0.60	3.96	0.65	3.79	0.51	3.74	0.54
Emotionality	3.78	0.55	3.78	0.61	3.75	0.49	3.79	0.59	3.71	0.49	3.65	0.48
Sociability	3.51	0.53	3.49	0.54	3.52	0.58	3.47	0.64	3.47	0.50	3.46	0.50
Self-motivation	3.92	0.60	3.87	0.68	3.93	0.59	3.96	0.64	3.79	0.54	3.72	0.56
Adaptability	3.96	0.58	3.95	0.64	3.91	0.60	3.94	0.68	3.91	0.53	3.86	0.52
Emotional competencies	3.66	0.39	3.65	0.43	3.66	0.40	3.68	0.46	3.57	0.36	3.54	0.36

$M = 3.84$ to 4.00 ($\sigma = 0.65$ and 0.68) for mothers and $M = 4.03$ to 3.83 ($\sigma = 0.50$ and 0.66) for fathers [$F(1, 91) = 7.29$, $p < 0.01$].

Finally, no effect was observed for educational level nor for income level as moderators.

Discussion

The main objective of this study was to examine the impact of the transition to parenthood on parents' personality traits and emotional competencies. With regard to personality development, an ongoing debate exists, with some arguing for the stability of personality (McCrae and Costa 1999, 2006) and others maintaining that traits change with time (Helson and Stewart 1994, Helson *et al.* 2002, Caspi *et al.* 2005, Roberts *et al.* 2006, Roberts *et al.* 2008). These last authors affirm that personality changes occur during young adulthood and claim that they are due to a 'normative functional maturation' (Hogan and Roberts 2004, Caspi *et al.* 2005). Young adults cope with many life transitions, such as transition to parenthood, which imply new social roles (i.e. parent) to which people must adapt. This adaptation would cause personality change.

Nevertheless, our data have shown very few differences between pregnancy and 6 months postpartum. Globally, transition to parenthood does not lead to short-term personality change. Our results thus confirm stability theory (Scarr and McCartney 1983, McCrae and Costa 1997, 1999, 2006, McCrae 2004, Donnellan and Robins 2009) and can notably be explained by the cumulative continuity principle (Roberts and Wood 2006), which defines four factors contributing to personality stability. First, longitudinal data on twins (McGue *et al.* 1993, Lykken and Tellegen 1996) suggest that much of the stability in adult personality is attributable to genetic factors. This does not mean that genes entirely determine personality, but rather that genotype determines which environments are actually experienced and what effects they have on the developing person (Scarr and McCartney 1983). Thus, the genotype determines environments individuals seek for themselves. Indeed, people seek environments compatible with their personality and select their own social experiences (Donnellan and Robins 2009). This specific environment then reinforces basic personality, which is prevented from changing. Second, personality traits are implicated in niche-building processes that promote stability. People tend to create, seek out, and end up in environments that are correlated with their traits. In turn, these trait-correlated environments reinforce personality traits (Roberts and Robins 2004). For instance, parents decide on having a child. They have particular personality traits that make them want to become a parent and to cope with a new and specific life situation. This situation – that is, the transition to parenthood – comes closest to reinforcing their personality traits. Third, with age, people develop a personal identity. Identity development facilitates personality stability by providing clear reference points for making life decisions (Roberts and Caspi 2003). Identity serves as a filter for life experiences and leads individuals to interpret new events, such as the transition to parenthood, in ways that are consistent with their identity, which implies little personality change. Finally, some individuals are entry-level effective, organized, decisive, considerate, and emotionally stable (high in Agreeableness, Conscientiousness, and Emotional stability) and, thus, are less likely to change (Roberts *et al.* 2001). Indeed, Agreeable,

Conscientious, and Emotionally stable people are better equipped to cope with social-developmental challenges, such as having a baby. They have more personal capital, and this allows them to master more efficiently the challenges of parenthood, thus implying less personality change.

In addition, other studies (Allport 1937, Cantor 1990, Palus 1995) have already shown that although first-time parents feel they are being personally changed, the transition to parenthood did not have an impact at the broad dispositional level of personality factors (McCrae and Costa 1987, 1999) but rather at the 'doing' level of personality; that is, the level where dispositions become contextualized into cognitive-motivational forms. Hence, changes could be observed in values, beliefs, personal goals, attitudes, and various schemata for self, others, and situations (Allport 1937, Bandura 1986, Cantor 1990, Salmela-Aro *et al.* 2000).

In line with our results, sociologists (LaRossa and Sinha 2006) introduced the notion of the 'social construction of the transition to parenthood' that reappraises developmental stages. People feel they are being personally changed: they essentially feel that something that did not exist before supposedly exists now (or vice versa). However, if time is seen as a continuous stream, then the demarcation of time into stages must emerge from mental activity. Consequently, to create a sense of transition, people group one set of 'similar' events into one category, another set into a second category, and simultaneously draw a line between the 'dissimilar' sets. The transition to parenthood refers to 'before birth' and to 'after birth'. These periods may be more alike than unalike, but when a narrative of change is employed, it is the differences, more than the similarities, that are highlighted. Thus, 'before birth' versus 'after birth' is seen as a meaningful classification. In fact, this classification does not rest on objective dissimilarities but on 'interpretive practices' (Holstein and Gubrium 2000) that create and sustain the idea that differences exist. Objectively, no differences appear between these two periods that can explain personality stability.

Consequently, our results contradicted the developmental theory of personality (Roberts *et al.* 2006), which claims a 'normative functional maturation'. Life transitions, such as parenthood, could increase the level of psychological maturation. Personality traits, then, would develop in a positive way. In addition, positive family experiences would be associated with changes in personality traits, particularly increases in Agreeableness, Conscientiousness, and Emotional stability. This inconsistency of results can be explained by two processes. The first one relates to the characteristics of the sample. Hence, if during pregnancy prospective parents are already agreeable, conscientious, and stable, there is little likelihood of observing increases at 6 months postpartum. Indeed, our results showed that pregnant parents tend to be more agreeable and emotionally stable than childless adults. The second process refers to the potential moment of change. If change is presumed to occur, perhaps it appears when people decide on becoming parents, for instance during the conception period, or during pregnancy. During pregnancy, prospective parents begin to sort through issues and to make and modify plans for the future birth, baby, and parenthood (Galinsky 1981). They are preparing for a change in their life. Perhaps change appears during this period of projection of the future.

With regard to emotional competencies, our results have not shown any differences between pregnancy and 6 months postpartum, as with personality. Emotional competencies are indeed viewed as a single framework that contains all affect-related aspects of personality (Petrides and Furnham 2001). Consequently, it is

not surprising that these results are similar to those for personality. In addition, the explanation of a social construction of the transition to parenthood (LaRossa and Sinha 2006) is also available for emotional competencies.

However, the transition to parenthood mainly affects the emotional field. In fact, the transitional effects that do appear are those such as profound joy, baby blues, or anxiety associated to breast-feeding rather than deep changes of general emotional regulation or emotional well-being. So, how can we explain that emotions appear during this life event without modifying emotional competencies? The first explanation is related to the notion of meta-emotion (Pons *et al.* 2002) which consists of two parts: (1) the individual's comprehension of the nature, the causes, the consequences, and the possibility of managing one's emotions and (2) the individual's consciousness of one's emotions. On the one hand, when parents feel strong emotions such as joy or anxiety, there is in fact an absence of meta-emotion. Their feelings are directly associated to the situation. On the other hand, emotional competencies are related to meta-emotion: individuals show or do not show competencies that allow them understanding, utilizing, or managing one's and others' emotions. The second explanation is about the notion of acquisition. One the one hand, the emotions felt by parents have not been the subject of acquisition. On the other hand, individuals must embark on a process of acquisition to have appropriate emotional competencies. This acquisition takes time. It is perhaps one reason why emotional competencies have not been developed between pregnancy and 6 months postpartum. For both reasons, individuals' emotions such as joy or anxiety fluctuate according to life event such as transition to parenthood. On the contrary, emotional competencies are not only related to life events but depend on more complicated processes such as meta-emotion and acquisition which explain the stability.

In addition, socio-emotional selectivity theory (Carstensen 2006) has shown that emotional regulation increases with age. We hypothesized that transition to parenthood implies a new life stage that leads to more maturity and then to more emotional regulation. However, this has not been demonstrated. The first explanation is that socio-emotional selectivity theory refers to a set of life experiences that bring emotional maturity, rather than to a life transition. The second is associated to the time perspective: the transition to parenthood is only measured over a short period of time which does not correspond to a real advance in age.

Our results also related to gender differences. First, gender differences in personality and emotional competencies were observed during pregnancy. Women have higher scores on Neuroticism, Extraversion, Agreeableness, and Emotionality and a lower score on Self-control than men, which is congruent with Feingold's meta-analyses (1994). Three models – biological, socio-cultural, and biosocial – can explain the proximal causes of sex differences. The biological model (Eysenck 1992) posits that gender differences in personality reflect innate temperamental differences between the sexes. The socio-cultural model (Eagly and Wood 1991) affirms that social and cultural factors directly produce gender differences in personality traits; a social role model is said to exist which dictates the appropriate behaviours for women and men. Finally, the biosocial model (Feingold 1994) posits that social factors tend to increase inherent gender differences. So, if men and women are initially perceived differently because of observable and innate temperamental sex differences in behaviours, they also may be treated differently because of stereotypes that result from these inherent differences in behaviour.

Secondly, in this study, mothers and fathers showed different developmental trajectories in emotional competencies. Thus, primiparous mothers' scores increase and fathers' scores decrease in Self-control. Moreover, multiparous mothers' scores increase and fathers' scores decrease in Adaptability. Parenthood seems to have a positive effect on mothers' development in particular, which is in line with social structural theory (Eagly and Wood 1999). This last theory posits that the roles people occupy – whether due to individual choice, socio-cultural pressures, or biological potential – lead them to develop psychological qualities and, in turn, behaviours to fit those roles. For instance, mothers' biological role in child-rearing (pregnancy, childbirth, and lactation) and cultural expectations of motherhood place them in a different parenting role than fathers. When transitioning to parenthood, parents adopt these new social roles, experience the event differently, and also develop differently. Moreover, the role of motherhood is seen by society as positive and as central to a woman's identity. Parenthood is more significant for women's self-conception than it is for men's (Simon 1992). As a result, mothers tend to change positively. Nevertheless, gender differences in development of personality were not observed like Feingold's study (1994), which posits that there are few reliable sex differences in the way these traits develop over time. How can we explain that only emotional competencies develop differently for mothers and fathers and not personality? Social and cultural expectations and the mothering biological nature lead mothers to develop more emotional competencies than men do. During the first months of breast-feeding, they have to be sensitive to the infant's signals and to be more empathic. On the contrary, the new parental biosocial roles do not lead parents to develop specific gender differences personality traits to meet parental qualities. For instance, it is not necessary that the mothers become more extrovert or less anxious than fathers.

Finally, SES differences in personality and emotional competencies development have not been observed. Neither educational level associated to cognitive flexibility nor income level allowing access to parental services and goods has affected parents' personality development. Although the transition to parenthood magnifies low-SES individuals' vulnerabilities, it does not cause radical personal change, such as an increase in Neuroticism. It could be explained by a kind of equilibrium between positive (e.g. positive emotions such as joy) and negative (e.g. more financial difficulties) aspects of this life event which lead to the stability of low-SES parents' personality and emotional competencies. Be that as it may, these results are encouraging: parenthood does not turn out to be deleterious for precarious individuals. In terms of personal development, these results run counter to social determinism, the cycle of disadvantage (Puckering 2004), and the SES stereotypes. People often tend to have value judgment towards low-SES parents: on top of having financial and educational problems, they tend to have many children and to be early parents. They would add a burden. These results allow moderating this stereotype by showing that this life event does not affect negatively their personal development.

Limits

Three limits have been observed. First, only two data collections were completed. These allow observation only of short-term personality changes. Second, childless couples are younger than parents. Given that the transition to parenthood is a

normative event, it affects a subgroup of individuals within some age-range. Thus, childless people are often younger. Third, there are more primiparous parents than multiparous ones. This does not allow comparison of the two groups.

Our future research will take into account and overcome these limits with the objective of examining long-term personality changes, comparing subgroups of parents and childless adults of the same age-range, and contrasting primiparous and multiparous parents' development.

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