WHEN NIECES AND NEPHEWS BECOME IMPORTANT: DIFFERENCES BETWEEN CHILDLESS WOMEN AND MOTHERS IN RELATIONSHIPS WITH NIECES AND NEPHEWS

THOMAS V. POLLET [1], TOON KUPPENS[2], ROBIN I. M. DUNBAR

Abstract. As suggested by previous research, childlessness can thoroughly affect the likelihood of giving and receiving help to kin, even in modern societies. In this paper we show that childless women over thirty-five have had more recent contact with their nephews/nieces than mothers. Yet, both groups showed no significant differences in contact with their uncles/aunts. This suggests heightened social investment in kin with high reproductive value by childless women compared to mothers. Results are discussed with reference to kin selection theory.

Keywords: kin selection theory; childlessness; family relations; social networks

INTRODUCTION

Individualization theorists, e.g. GIDDENS (1991) and BECK (1993[1992]), claim that social and family relationships have become increasingly dependent on individualized choice. Whereas life of individuals in 'traditional societies' was structured by traditional institutions and norms, life in 'radicalized modern societies' has become increasingly dependent on the individual and his/her choice. Individualization has been cited as one of the most important factors for the observed decline in total fertility rates and the increasing choice of childlessness in modernized societies (HIRSCHMAN, 1994; VAN DE KAA, 2004). Women in Western societies increasingly postpone their decision to have children and rising numbers choose not to have any children at all (MCALLISTER AND CLARKE, 1998). The choice to become a parent in a radicalized modern society requires long-lasting financial and emotional investment (VAN DE KAA, 2004). Individuals can choose not to make such a commitment and not to have a (or another) baby. People who choose to remain childless can al-

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[1] Corresponding author ; Thomas V. Pollet is currently at the School of Biology and Psychology, Newcastle University , UK (T.V.Pollet@ncl.ac.uk). Address: Henry Wellcome Building for Neuroecology (Newcastle University), Framlington Place, NE2 4HH, Newcastle upon Tyne, UK.

[2] Toon Kuppens is currently at the Department of Sociology, Free University of Brussels, Belgium (toon.kuppens@vub.ac.be).

locate their time and money in a different way and devote these available resources to self-expression (see GIDDENS, 1991).

Research has shown that there is still an increasing trend in radicalized modern societies of individuals who choose to remain childless (DEOLLOS and KAPINUS, 2002; PARK, 2005). For the United States, estimates are that approximately seventeen percent of the women born between 1944 and 1955 and up to twenty-two percent of the women born between 1956 and 1972 will remain childless (DEOLLOS and KAPINUS, 2002). Supposedly, the majority of these women are childless by choice (GILLESPIE, 2003; PARK, 2005; see MCALLISTER and CLARK, 1998). For the UK, it is estimated that as many as 25 percent of the women born in 1973 will remain childless (SOCIAL TRENDS 30, 2000), and it is anticipated that this trend towards voluntary childlessness will continue (SOCIAL TRENDS 34, 2004). Similar estimates exist for other European countries, but there is some variation between countries (MCALLISTER and CLARKE, 1998; RUDDOCK et al., 1998; PEARCE et al., 1999). These increasing rates of voluntary childlessness are predominantly a Western phenomenon. In many other parts of the world, contraceptives and reproductive technologies, which facilitate the choice of childlessness, are still largely unavailable (GILLESPIE, 2003).

Research has shown that compared with 'mothers', voluntarily childless women are more likely to be highly educated and employed (MCALLISTER and CLARKE, 1998; BACHU, 1999), have a managerial job (MCALLISTER and CLARKE, 1998; BACHU, 1999), are less religious (MOSHER et al., 1992), less traditionally gender orientated (CALLAN, 1986) and less conventional (PARK, 2005).

Individualization theory predicts the breakdown of traditional family structures (e.g. marriage) and norms (BECK-GERNSHEIM, 2002). Following individualization theory, there is no obvious reason why childless individuals should (continue to) invest in the relationships with their kin. Moreover, if we interpret childlessness as breaking with traditional family norms, childless women should be particularly nontraditional in their relationship with family members. Individualization theory would then predict that childless women invest even less in family members than other individuals.

In contrast, from a kin selection perspective we would expect higher investment in kin from childless women than from 'mothers'. For humans, this implies that, under appropriate circumstances, it is beneficial to behave altruistically towards (closely) related kin as this increases inclusive fitness (HAMILTON 1964). More importantly, HUGHES (1988) has pointed out that, within categories of relatedness, reproductive value should be factored into the equation for Hamilton's Rule. Thus, individuals should pay attention not just to kinship, but also to the prospective fertility of the individuals they interact with, such that individuals of higher reproductive value will be preferred over those with low reproductive value.

Kin often provide childcare and their help can increase an individual's inclusive fitness (TURKE 1988; 1989; BERECZKEI 1998; SEAR et al. 2000; 2002). Such 'helper' behaviour between related individuals has been shown in several non-

human species (KURLAND 1980; EMLEN 1995). In humans, kin can also serve as 'helpers at the nest' and individuals of low reproductive value, e.g. grandmothers, often help kin (HAWKES et al., 1997; SEAR et al. 2000). The presence of (matrilineal) kin has been shown to have significant beneficial effects on infant survival and (inclusive) fitness (HAWKES et al., 1997; SEAR et al., 2000; 2002; but see ADAMS et al., 2002). In traditional societies, older siblings also often fulfil a 'helper role' (WEISNER and GALLIMORE, 1977; BERECZKEI and DUNBAR 2002; but see CROGNIER et al., 2001). Older siblings take care of younger siblings, thereby reducing the workload of the mother. Among the Toba of Argentina for instance, girl helpers were shown to significantly reduce the workload of the mother by helping and care-taking (BOVE et al., 2002; but see HAMES and DRAPER, 2004).

In modern societies, childless individuals could fulfil similar helper roles, as suggested by ESSOCK-VITALE and MCGUIRE (1985). They found that childless women were more likely to give help to, but also to receive help, from their nieces and nephews. While the impact of childlessness on family and social relationships has received considerable attention within family studies, there have been virtually no other studies offering an evolutionary perspective on the issue (but see NELSON, 1998; POLLET, 2005).

As the number of high quality relationships is inherently limited, this implies that the investment in, as well as the quality of, a given social relationship is traded off against other relationships in one's social network. Not all relationships can be very 'strong'. Our hypothesis is thus that, as childless women do not have the opportunity to invest in relationships with their own children, their relationship with their nieces and nephews is stronger than those of mothers (i.e. women with children). Moreover, following HUGHES (1988), we expect childless women to invest more heavily in nieces/nephews than they do in aunts/uncles despite the fact that both have the same genetic relationship to the investor. One possible confounding variable is the amount of time that childless women have. Childless women might simply have more available time than mothers and this could change their relationships with family and friends. However, if the change in the relationship is *only* due to the amount of available time, the relationships with other family members and friends should differ between childless women and mothers in the same way. To control for this confound, we test whether or not childless women have contact with uncles and aunts more often than mothers. If the two categories of women do not differ in their contact frequencies with aunts/uncles, then differences in free time is not a sufficient explanation for any differences we may find in their contact frequencies with nieces/nephews.

DATA AND METHODOLOGY

The data were obtained through a network survey amongst 18–65 year old women in Belgium (December'04 to February '05). A total of 161 respondents returned completed questionnaires containing network measures and some demographic

measures, including age and educational attainment (6 categories: from incomplete primary to university). Due to the extent of the questionnaire, i.e. respondents were asked to map out their entire social network, snowball and ad libitum sampling was used. Respondents were asked to write down all their known and living relatives and (close) friends. For each person, the respondents indicated how emotionally close they felt to them. Emotional closeness was rated on a scale 1–10 (1 indicating someone to whom the respondent barely has any relation, 10 indicating someone from whom the respondent would seek social support in times of distress). Respondents also indicated how recently they had had contact with each of the individuals they listed (e.g. within last two days, within last week, within last fortnight, within last month or over a month ago). The questionnaire distinguished between face-to-face contact and contact by some other medium (i.e. telephone, mail or email). Frequency of contact is a commonly used measure in social network studies (see House, Umberhouse and Landis, 1988) and is generally a reliable predictor of financial and social support (see Pollet, 2005). Respondents also estimated the distance in minutes (i.e. how long it would take to get from their place to the other's place) for each person in their social network (mean for nieces and nephews= 39 minutes; std = 27 minutes; mean for aunts and uncles = 48 minutes; std = 37 minutes). Women were coded as childless if they did not have children at the time.

From this set (n = 161), we selected all women who had at least one full niece or nephew (n = 83; mean number of nieces and nephews = 6.96; std = 5.77). The mean emotional distance to full nieces and nephews was then calculated for each respondent (mean = 5.98; std = 2.37). For 'recency of face to face contact' and 'recency of contact by medium', we calculated the mode for each respondent. The mode is preferred as a measure over the median, as the median can lead to in-between categories (e.g. less than a month but more than two weeks) with few or no actual respondents. In general, the results were not significantly different if the median was used instead of the mode. For respondents who had at least one full niece or nephew, the same procedure was followed to construct similar variables for genetically related uncles and aunts.

RESULTS
Nieces and nephews

Distance does not appear to influence mode of face to face contact (Somers' D_{yx}= 0.105; p = 0.219; n = 75) or mode of contact by telephone/email/mail (Somers' D_{yx} = 0.05; p = 0.617; n = 47). Moreover, distance does not appear to lower the mean emotional score for nieces/nephews (r = – 0.053; one-tailed p = 0.321; n = 80). As the number of (full) nephews and nieces increases, the average emotional score significantly decreases (r = – 0.195; one-tailed p = 0.039; n = 83). The number of (full) nephews and nieces affects both the (mode of) recency of face to face contact (Somers' D_{yx}= 0,284; p = 0.001; n = 77) and (mode of) recency of contact by letter, mail or telephone (Somers' D_{yx}= 0,205; p = 0.033; n = 48) in the same

way. As the number of nieces and nephews increases, respondents are significantly less likely to have had recent contact with them, either face to face or by medium.

There is a marginally significant relationship between educational level and mode of face to face contact (Somers' $D_{yx} = -0.205$; p= 0.055; n = 77). Also, higher educated individuals seem to have a closer relationship with their nieces/nephews, in general (Somers' $D_{yx} = 0.286$; p = 0.008; n = 83). However, there appears to be no relation between mode of contact by telephone/email/mail and attained level of education (Somers' $D_{yx} = 0.057$; p = 0.684; n = 48).

We should bear in mind that differences between 'childless' individuals and 'mothers' could be due to the life-phase they are in. In our analysis, women coded as 'childless' could still have children in the future and are therefore significantly younger than women coded as 'mothers'. In order to distinguish between childless women and women who still might have children, we have split our analyses between individuals aged between eighteen and thirty-five, and individuals aged over thirty-five. Childless women over thirty-five in modern societies are highly unlikely to ever have children. In Belgium, the probability for childless women over thirty-five of ever having children is below 2% for women born in 1936-1950 (based on population data for women born in 1936–1945 and an estimate based on population data for women born in 1946–1950) (NEELS, 2004, appendix C, Table C.14). This percentage has decreased, if we examine the different cohorts born in 1931–1950, so it is unlikely that it will be much higher for the women born in 1951–1970 (the women over thirty-five in our sample). Although we present analyses for women both under and over thirty-five, the emphasis of our study is on differences between childless women and mothers over thirty-five.

Childless women do not have significantly fewer (full) nieces and nephews than 'mothers' (r = − 0.164; p = 0.137; n = 83). For women aged over thirty-five, we find no significant relationship between childlessness and the number of nieces and nephews (r = 0.015; p = 0.91; n = 62).

Individualization theory predicts that childless women are generally higher educated than women who have children. However, in our sample, childless women are not significantly higher educated than 'mothers' (Mann-Whitney U = 785; one-tailed p = 0.418). This remains the case even if we select only women over thirty-five (Mann-Whitney U = 314.5; one-tailed p = 0.285).

Childless individuals are significantly more likely than individuals who have children to have had recent face to face contact with their nephews/nieces (Mann-Whitney U = 473.5; one-tailed p = 0.011; *Figure 1*). If we select only women over thirty-five, assuming that childless women over thirty-five are highly unlikely to have any children, we find that childless women had marginally significant more recent contact than mothers (Mann-Whitney U = 213.5; one-tailed p = 0.097).

Similar results are found for contact by telephone, letter or email. Childless women are more likely than 'mothers' to have had recent contact with a niece or nephew (Mann-Whitney U = 178; one-tailed p = 0.022; *Figure 2*), and this was true for childless women over thirty-five (Mann-Whitney U = 66; one-tailed p = 0.005).

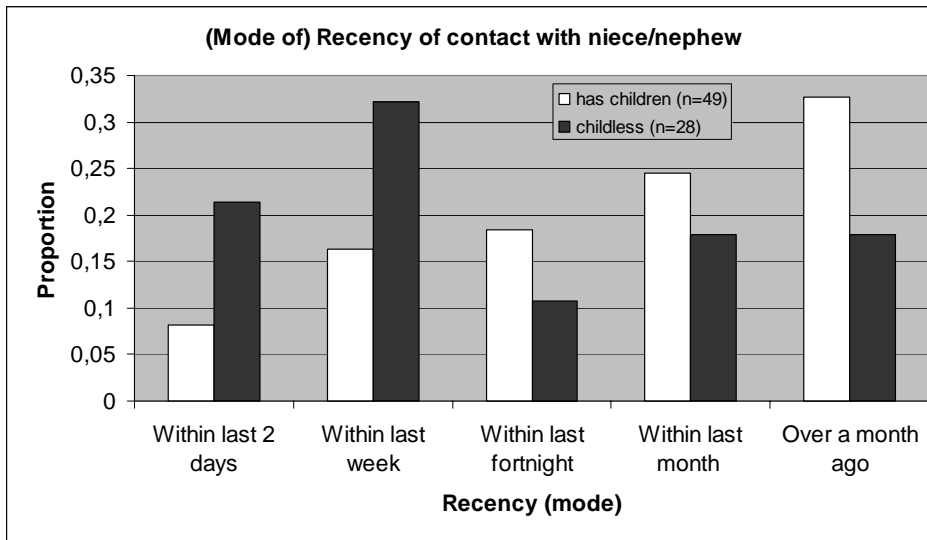**(Mode of) Recency of contact with niece/nephew**

Figure 1. Childlessness and (mode of) recency of face to face contact with niece/nephew

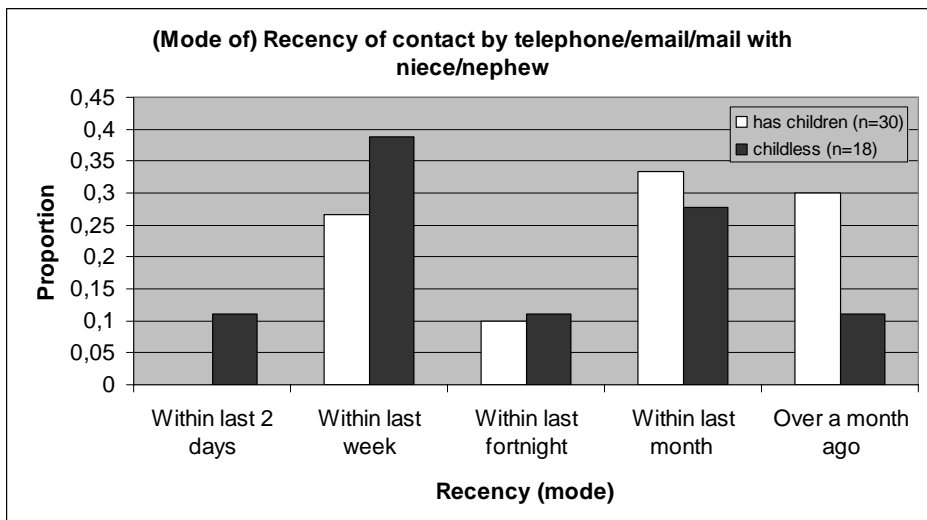**(Mode of) Recency of contact by telephone/email/mail with niece/nephew**

Fi*gure 2.* Childlessness and (mode of) recency of contact by telephone/email/mail with niece/nephew

Childless women are (on average) emotionally closer to their niece/nephew than mothers (t = – 2.005; df = 81; one-tailed p = 0.024). After controlling for age, however, this relationship disappears (partial r = – 0.02; one-tailed p = 0.214; n = 80). Likewise, if we select only individuals aged thirty-five and over, childless

women are not significantly emotionally closer to their nieces/nephews than mothers (t = – 0.284; df = 60; one-tailed p = 0.389).

Uncles and aunts

Unlike nieces and nephews, there appears to be a relationship between average distance and (mode of) recency of face to face contact for aunts and uncles (Somers' D_{yx} = 0.13; p = 0.011; n = 70). There is no relationship between average distance and mode of contact by medium (Somers' D_{yx} = 0.007; p = 0.934; n = 46). Whereas distance did not appear to lower the emotional closeness with nieces and nephews, this does seem to be the case for uncles and aunts (r = – 0.174; one-tailed p = 0.073; n = 71).

Whereas the number of nieces and nephews influenced the recency of face to face contact and contact by medium with them, this does not appear to be the case with uncles and aunts (respectively: Somers' D_{yx} = 0.054; p = 0.358; n = 74; Somers' D_{yx} = -0.05; p= 0.614; n= 48). The number of uncles and aunts does not relate to the average emotional score with them (r = – 0.023; p= 0.842; n = 75).

There is no relation between childlessness and average distance to an aunt or uncle (r = 0.005; p = 0.969; n = 71). Childless women have significantly more aunts and uncles (r = 0.272; one-tailed p = 0.009; n = 75). However, this is due to a spurious correlation with age: the older the women are, the less likely they are to have several living uncles and aunts. The relationship between childlessness and number of aunts and uncles is insignificant after controlling for age (partial r = 0.028; p = 0.814; n = 72)
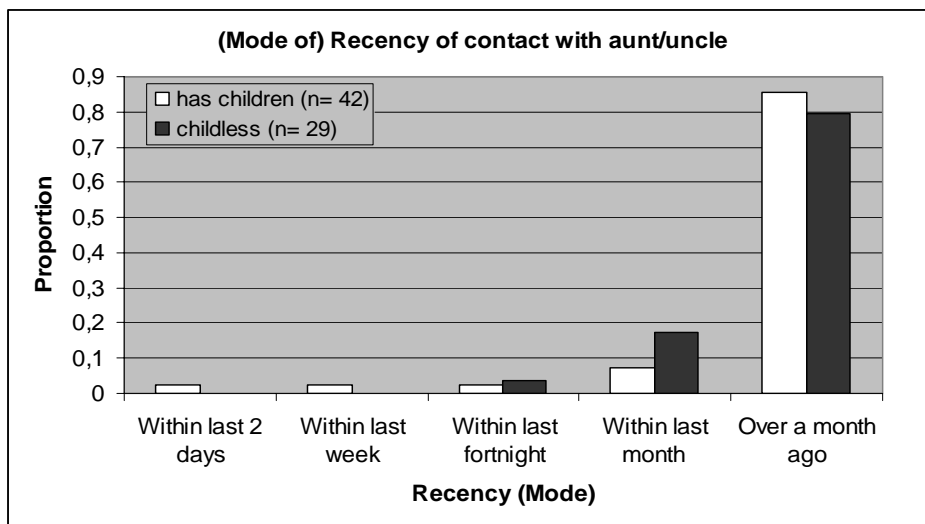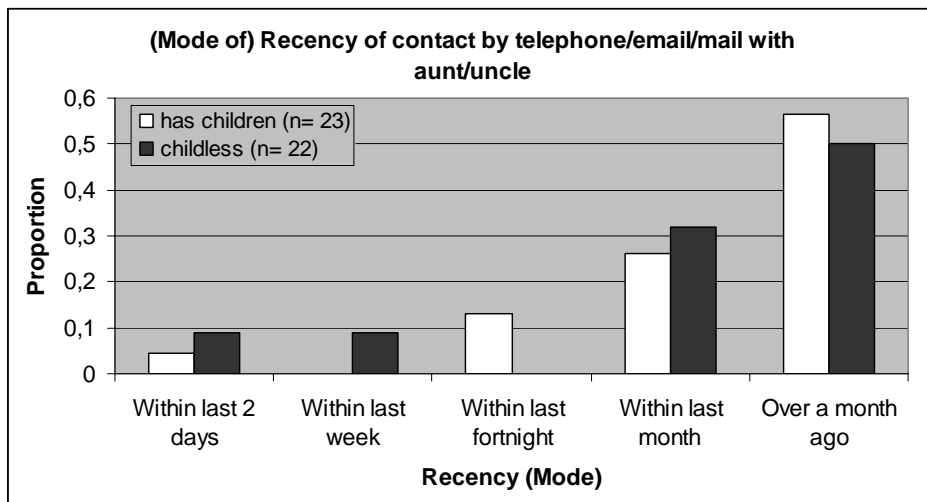

Figure 3. Childlessness and (mode of) recency of face to face contact with aunt/uncle

In contrast to the highly significant differences between childless women and mothers in face to face contact with a niece or nephew, the difference between childless women and mothers for recency of contact with aunts or uncles is not significant (Mann-Whitney U = 612.5; one-tailed p = 0.254; *Figure 3*). For women over 35, the trend goes in the opposite direction: childless women are less likely to have had recent face to face contact with their aunt or uncle (Mann-Whitney U = 271; p = 0.064).

There are no significant differences between childless women and mothers in recency of contact by email, mail or telephone with their aunt or uncle (Mann-Whitney U = 268.5; one-tailed p = 0.332; *Figure 4*). If we select only women over thirty-five, this remains non-significant (Mann-Whitney U = 112; one-tailed p = 0.38).

Figure 4. Childlessness and (mode of) recency of contact by
telephone/email/mail with aunt/uncle

Childless women are significantly emotionally closer to their uncle or aunt than mothers (t = 2.08; df = 73; one-tailed p = 0.021). Yet, this is likely to be a spurious relationship caused by age. For childless women over thirty-five, we find no significant difference (t = 1.08; df = 53; one-tailed p = 0.141).

DISCUSSION

Childless women (at the time of the interview) 'invest' more in relationships with their nephews/nieces than women with children. Furthermore, childless women appear to have a closer bond with their niece/nephew. It might be the case that women

who are younger and coded as childless have nephews/nieces that are very young as well, which could lead to more interaction and higher score on emotional closeness.

If we examine only women over thirty-five, we find that childless women have had more recent face to face contact than 'mothers' but this difference is only marginally significant. Moreover, childless women over thirty-five are significantly more likely to have had recent contact by e-mail, letter or telephone with their nieces and nephews than 'mothers'. This suggests that childless women invest more in their relationship with nieces and nephews than mothers do. For women over thirty-five, there are no significant differences between childless women and mothers in the rating of emotional closeness, however. Nor do these differences between childless women and mothers over thirty-five appear to be merely a function of available free time: childless women did not have significantly more recent contact with an uncle or aunt than mothers.

Our findings suggest that childless women (over thirty-five), who do not have to trade off investment in relationships with their children against investment in other kin relationships, invest more in those family members with high reproductive value. These results are consistent with a kin selection perspective and adaptive decision making. The 'marginal utility', i.e. the relative amount of benefit compared to investment, of nieces and nephews is greater for childless women than for mothers (because mothers can invest in their own children). They are also consistent with HUGHES's (1988) modification of Hamilton's Rule to incorporate the impact of reproductive value.

The extent to which our measure of the recency of contact reflects 'material investment' such as the giving of financial help, of course, is uncertain. However, studies on social networks (e.g. KANA'IAUPUNI et al., 2005) provide evidence to suggest that recency of contact often does reflect social and material support. Similarly, Pollet (unpublished data) also found that social investment in family relationships was a strong predictor of financial investment. For the purpose of this study, we also assumed that recency of contact reflected 'investment on behalf of ego', rather than on behalf of the niece/nephew/uncle/aunt. It is unclear, however, who takes initiative to contact the other, or even whether this makes a significant difference.

Although we were unable to distinguish between 'childfree' women and those who are involuntarily childless, it is unlikely that this distinction could be responsible for our results for at least two reasons. First, other studies indicate that the majority of childless women are childless by choice rather than being involuntarily childless (e.g. MCALLISTER and CLARKE, 1998). Indeed, MCALLISTER and CLARKE (1998) were also unable to identify any fitness consequences for differences between childless women and mothers in relationships with nieces and nephews. Second, strategic decisions about reproductive effort investment should not depend on lifelong childlessness, but rather on current reproductive state. Consequently, the distinction should not influence whether or not an individual invests in her close kin.

Finally, these results suggest that, despite concerns about the fragmentation of family structures in the modern world (e.g. GIDDENS 1991, BECK 1993[1992]), traditional kinship patterns still have a strong influence on contemporary behaviour. From an individualization perspective, there is no compelling reason for childless women to 'invest' in the relationship with their nieces and nephews, other than by idiosyncratic choice. That being so, there is no apparent reason why childless women should 'invest' more in their relationship with their nieces and nephews than mothers, or than they do in other relatives or friends. However, the finding that childless women differ from mothers in terms of their patterns of investment in nieces/nephews but not uncles/aunts not merely conforms with the predictions of kin selection theory but is, in addition, at odds with individualization theory.

(Biographical note)

Thomas V. Pollet is currently undertaking a PhD. in Psychology at the University of Newcastle upon on Tyne (UK). His research interests are the evolution of social behaviour, family relationships and ingroup-outgroup behaviour.

Toon Kuppens is currently at the dept. of Sociology, Free University of Brussels (Belgium). His research focuses on attitudes and the evolution of group-related behaviour.

Robin I.M. Dunbar is British Academy Research Professor at the School of Biological Sciences, University of Liverpool (UK) and co-Director of the British Academy Centenary Research Centre. His research centres on the evolution of language, theory of mind and human social networks.

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