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Women's emotions towards the mobile phone

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Abstract

This article explores women's emotional reactions towards the mobile phone. To structure this analysis we had recourse to James A. Russell's circumplex model of affect which explores four main emotional dimensions: excitement, distress, depression and contentment. In terms of data, the article is based on the female sub-sample (N=3,704) of nationally representative survey data collected from Italy, France, the UK, Germany and Spain (N=7,255) in 2009. Furthermore, this paper investigates whether women's emotions associate differently with the mobile phone depending on the type of family in which they live. The results show that it is women living in blended families who seem to associate more distress and less feelings of contentment with the mobile phone than women living in other types of family. An unexpected result coming from one of the other control variables is that Italian women, who have been the most equipped and active female users in Europe, are now less excited and content as well as more depressed and distressed in their relationships with the mobile phone than women in the other countries under consideration.

Keywords

Mobile phone, family typology, gender, women, emotion.

Introduction

As various studies show, emotional labour is being commercialized and the boundary between work and home, in this respect, is blurring (Judy Wajcman, Michael Bittman & Judith E. Brown 2008; Donald Hislop & Carolyn Axtell 2011). This is especially characteristic of women who, on a global scale, not only undertake the majority of emotion-intensive paid work (care work and service work in general) but also take on a large share of emotional labour at home (e.g. child rearing and caring for the elderly) (Larissa Hjorth & Michael Arnold 2011; Arlie R. Hochschild 1983, 2000, 2001). The mobile phone has a particular role to play in managing emotions in everyday life. Previous studies indicate that the mobile phone can actually maintain or even increase gender inequality, as women use it to perform parenting at a distance (Rhacel Parreñas 2005; Mirca Madianou & Daniel Miller 2011, Leopoldina Fortunati 2002). In this article, we contribute to this emerging field of media research – which so far has been mainly approached using ethnographic tools – by providing statistical evidence from Europe. More specifically, our aim first of all is to illustrate the emotional reaction of women towards the mobile phone and second to explore whether women's emotions associate differently with the mobile phone depending on the type of family in which they live. With such a study we aim to present more generalizable data on women's emotions towards this communication tool.

The focus of this study is *not* on a male–female comparison. The study concentrates mainly on women and their emotional associations with the mobile phone. In fact, reasons for using only a sub-sample of women are many (Fortunati 2009). First,

by concentrating only on women respondents, we avoid taking the masculine situation as a central precept. Second, we avoid defining the “feminine” in terms of the “masculine”. Third, we avoid describing the results concerning women as something “more” or “less” than the results dealing with men. Lastly, we can take into account the results in which no significant differences between men and women are found and explore the meaning of that lack.

In practice, we will analyse the female sub-sample (N=3,704) of the survey data collected from Italy, France, the UK, Germany and Spain (N=7,255) in 2009. The survey, funded by Telecom Italia, partially replicates research carried out in 1996 in the same countries (N=6,609) (Fortunati 1998).

The article is structured as follows. First, we will review previous literature dealing with women, mobile phones and emotions, as well as earlier studies on family and mobile phones, in order to formulate literature-based hypotheses for the study. Then we will describe the data and statistical tools applied in the study. The research results will be reported after that before turning to the final discussion and conclusions.

Previous literature

Gender and the mobile phone

Lana F. Rakow (1992) argues that the use of the telephone conveys the meanings of gender. In fact, women’s practices of using the telephone reveal, according to her, women’s attitudes, tastes and abilities. Moreover, Rakow (1992) highlights the different

identities of the fixed and the mobile phone in relation to gender. While housewives have used the fixed telephone at home as a magic helper to maintain their social relations, they use the mobile phone to be able to exist in their domestic and work worlds simultaneously.

A year later, Lana Rakow and Vija Navarro wrote “the cellular telephone sits in an ambiguous position for most of them [women], between being a feminine and familiar appliance (the telephone), and a masculine machine (a mechanical and/or electronic gadget)” (Lana Rakow & Vija Navarro 1993, p. 153), with the consequence that gender ideology leads to women living different lifestyles and using this tool differently from men. Furthermore, Rakow and Navarro argue that the use of this device has generally contributed to reproducing the traditional role and subordinate social status of women. In fact, women have used the mobile phone to connect and integrate the domestic and work worlds and to be active in both, with the consequence that the institutional boundaries between these two worlds have blurred.

However, the relationship between women and the mobile phone is generationally differentiated. During the last few years, young women have overtaken young men in some aspects of the use of mobile phones, such as texting. But the fact that the social power of adult and more mature women is still considerably smaller than that of men of the same age, attaches a negative weight to younger women. In other words, the fact that women are, on average, less well equipped, and use the mobile phone less and in a less sophisticated way than men weakens the power of younger women, although they are well equipped and have high capabilities. As Leopoldina Fortunati

(2009) writes elsewhere, this is why age is a factor of social aggregation that often supersedes the significance of gender.

Women and mobile-related emotions

The emotional meaning that people attach to the mobile phone and related services has remained an obscure research subject. Depending on the studied features of the mobile phone, women are either said to associate negative or positive feelings with this personal communication tool. For instance, David Gilbert, Liz Lee-Kelley & Maya Barton (2003, p. 259), in their study on a pocket computer and mobile phones, suggest that women express more computer anxiety and negative feelings toward mobile Internet technology. However, others have shown that women report less negative effects, such as annoyance, where public use of mobile phones by others is concerned (Mark Turner, Steve Love & Mark Howell 2008).

Some studies have led us to understand that women may have comparatively positive attitudes towards mobile technology. For example, intrinsic motives such as enjoyment are said to be important determinants among women of the intention to use mobile chat services (Herbjørn Nysveen, Per E. Pedersen & Helge Thorbjørnsen 2005a). The study by Bill Anckar and Davide D’Incau (2002) provides similar results. It shows that women are more interested in adopting mobile commerce services than men. In this respect, ease of use is regarded as an important factor for the use of the mobile phone and related services (e.g. Manuel Castells, Mireia Fernandez-Ardevol, Jack Linchuan Qiu &

Araba Sey 2007, p. 48). In particular, the intentions of women to use goal-directed mobile services, such as text-messages and payment, are related to their user-friendliness (Nysveen et al. 2005b).

Another way to create a more comprehensive and de-fragmentized picture of the emotional fabric of women relating to the mobile phone is to ask women, as we did in this study, about the prime emotion they attach to the mobile phone and to organize the relative answers according to a theoretical model. In particular, in this study we took advantage of James A. Russell's (1980) circumplex model of affect, which has been tested over the last three decades and has proved to be appropriate for measuring emotions in various research settings (David Martin, Martin O'Neill, Susan Hubbard & Adrian Palmer 2008, pp. 225--227). The model sees emotion organized according to a circular structure ("circumplex"), which is a two-dimensional space consisting of pleasure-displeasure and arousal-sleepiness (or high-low arousal) axes (e.g. Russell 1980; James A. Russell, Maria Lewicka & Toomas Niit 1989). When studied in this way, emotion is made up of four categories: excitement (pleasant, arousal), distress (unpleasant, arousal), depression (unpleasant, sleepiness) and contentment (pleasant sleepiness). Each emotional category represents one quadrant of the circumplex model of affect.

The mobile phone in family relationships

Another consistent finding in previous literature is that women use the mobile phone for maintaining social networks and coordinating family activities (Castells,

Fernandez-Ardevol, Qiu and Sey 2007, pp. 45--46). Thus, it is not a surprise that the mobile phone has been considered to be a tool of domestic organization (Fortunati 2002, p. 56). However, the pluralization of family forms, as well as the shift from collective to individualized social relationships, might affect the way in which mobile phones are employed in family settings. For instance, single parents have no possibility of negotiating with a partner, via the mobile phone, who should do what. On the contrary, in blended families, negotiations might involve more parties and social roles than in nuclear families. In addition to biological parents, new and ex-partners, stepmothers and stepfathers are probably involved in the process. Furthermore, it is reasonable to think that lone mothers maybe associate feelings, such as relaxation and companionship, with their mobile phones more often than single women and women living in a relationship. On the other hand, women who live together with children may feel obliged to use their mobile phones more often to keep an eye on their children. Consequently, they can be expected to relate feelings such as anxiety, worry, or even annoyance to the mobile phone.

However, culture also plays an important role in the studies on family and mobile phones. There is evidence, for example, that in Korea the adoption of mobile phones may reproduce some traditional power relations in families. Kyongwon Yoon (2003) shows that mothers have become the “domestic mediators” of the fathers’ authority, as, typically, fathers do not contact children directly through the mobile phone. Instead, men contact their wives to ask what their children are doing.

Based on the reviewed literature and argumentation, the following research questions and hypotheses are set for the study, based on the emotional associations of women with the mobile phone:

RQ1. What are the main emotions women attach to the mobile phone? In the literature review reported above and in a previous study carried out in 1996, the emotion that women attached to the mobile phone was ambivalence, although it was more positive than negative. However, in the studies cited we were at the beginning of the diffusion of the mobile phone. Does the emotion of women towards this device continue to be so ambivalent in a completely different situation in which mobile phone users are considered mature users?

H1. Our hypothesis is that, today, positive emotions might prevail over negative ones. Several negative emotions attached to the mobile phone were, in fact, related to the irruption of this device in public spaces and the breaking of the social rules that governed them. But, in the meantime, people have found ways to adjust their attitudes and behaviours in order to overcome the related problems. So, we now expect a mainly positive emotional reaction towards the mobile phone, maybe limited by saturation effects derived from the massive use of this device.

Our second research question concerns instead the role of family.

RQ2 Does family typology play a significant role in the emotion that women attach to the mobile phone?

H2. Our second hypothesis, based on the literature illustrated above, is that family typology should play an influential role in the fabric of emotion that women express towards the mobile phone, especially taking into account that the mobile phone is most used by women to be in touch with and communicate with family members and others close to them. So, it is reasonable to assume that the emotional loadings of women towards the mobile phone are related to family typology.

Data and methods

Data

The article is based on a broad survey that was carried out in Italy, France, the UK, Germany and Spain in 2009 (N=7,255). The sample is representative of the populations of these countries. In this study, we use the female sub sample (N=3,704) of the data, which is structured as follows: Italy (N=810), France (N=676), Germany (N=959), the UK (N=691) and Spain (N=568). This research almost replicated research carried out in 1996 (Fortunati, 1998) in the same countries, with representative samples of these five countries' populations (N=6,609) and using the same questionnaire (which was updated in the 2009 survey in order to adapt it to the new situation). Although these two surveys might not be considered longitudinal in classical terms, some comparisons between their data are surely interesting and relevant.

The data were collected in both surveys by means of a fixed telephone survey. In the 2009 study we used weighted data in order to correct distortions (related to age, education, ownership of a computer and access to the Internet), which affected the

correct representation of the various quotas of the sample. This survey was an adjusted replication of the first survey carried out in 1996 in the same European countries and with representative samples of the related populations, and, when appropriate, we used those data for comparison with the new data collected.

Measurement

Dependent variable

To measure the emotion women associate with the mobile phone we used the same battery of emotions as was used in the 1996 survey. In 1996, a pretest with an open question was applied and respondents were asked to answer spontaneously the question: “What emotions or feelings do you have about each of the following means of communication? Please just give one word off the top of your head for each one”. Answers were then classified by the researchers, who closed down the question into twenty predetermined categories: interest, enthusiasm, curiosity, anxiety, irritation/annoyance, joy/pleasure, satisfaction, frustration, anger, embarrassment, surprise, relaxation, companionship, fun/happiness, indifference, boredom, other, nothing in particular, do not know, no response. For this study, these twenty categories have been reduced into four main emotional dimensions that correspond to Russell’s circumplex model of affect: excitement, distress, depression and contentment (see Table 1).

Independent variables

The typology of families works as the main independent variable of this study. It consists of single persons, couples without children, and couples with children, single-parent families and blended families (all other types of families). In addition, we used five other variables to control their possible effects on the relationship between emotion and family type. First, in the questionnaire the respondents were asked their ages in full years and the results were recoded into five categories: 14 to 17, 18 to 24, 25 to 44, 45 to 64, and 65 and older. Second, we used the country of residence (Italy, France, the UK, Germany and Spain) to control possible cultural differences. Third, the effects of the level of education (low, medium and high) were controlled in multivariate analyses, as well as, fourth, the respondent's main activity, which included the following answer categories: employed, unemployed, student, house person and retired. Fifth, the level of urbanization was measured based on the estimated size of the respondent's place of abode. This indicator is recoded in three categories as outlined by the OECD: essentially rural (less than 5,000 inhabitants), relatively rural (5,000-100,000 inhabitants), and essentially urban (more than 100,000 inhabitants).

Statistical procedure

We analysed the data by using both bivariate and multivariate statistical tools. First, we used contingency tables with Pearson's chi-squared test to show women's

emotional fabric towards the mobile phone and how Russell's circumplex model of affect works (see Table 1) and how emotions are distributed within different types of families (see Table 2). We also referred to standardized residuals to identify the cells of the contingency tables, which are responsible for a significant overall chi-square (e.g. Brian S. Everett 1992, pp. 46--48; Andy Field 2009, pp. 698--700). Then, we performed logistic regression analyses (LRA) with socio-demographic control variables in order to understand how women associate emotions in one type of family compared to the others. We began with models including all the above-mentioned controlling variables, and we then removed predictors one by one, when necessary, starting from the worst one, which failed the Hosmer and Lemeshow test for a goodness-of-fit. Nagelkerke statistics were also used to ascertain the overall proportion of the variance explained by the models (Barbara G. Tabachnick & Linda S. Fidell, 2007, pp. 459--461).

Results

Distribution of emotions among women

The data, at first glance, shows us, that women mainly take a positive emotional view of the mobile phone. Emotions such as interest, companionship, joy/pleasure and satisfaction, fun/happiness, curiosity, and enthusiasm, are most reported by women respondents (see Table 1). On the contrary, negative emotions, such as anxiety, irritation, frustration, anger, indifference, and boredom, are much more uncommon among women comprising slightly more than 10% of the entire spectrum of emotions.

Table 1. Distributions of women's emotions towards the mobile phone according to Russell's (1980) circumplex model of affect

	Excitement		Distress		Depression		Contentment		Total	
	N	%	N	%	N	%	N	%	N	%
Enthusiasm	119	7.0							119	3.9
Interest	653	38.5							653	21.4
Curiosity	163	9.6							162	5.3
Joy/Pleasure	317	18.7							317	10.4
Surprise	30	1.8							30	1.0
Fun/Happiness	191	11.3							191	6.3
Satisfaction	224	13.2							224	7.3
Anxiety			32	23.2					32	1.0
Irritation/ Annoyance			85	61.6					85	2.8
Frustration			9	6.5					9	0.3
Anger			12	8.7					12	0.4
Embarrassment					12	4.5			12	0.4
Indifference					168	63.6			168	5.5
Boredom					84	31.8			84	2.8
Relaxation							600	63.0	600	19.7
Companionship							352	37.0	352	11.5
	1,697	100.0	138	100.0	264	100.0	952	100.0	3,051	100.0

After looking at the emotions felt by women towards the mobile phone at the general level, we proceeded to analyse this emotional association in a more structured way. To this end we applied Russell's (1980) circumplex model of affect, as described above. Table 1 shows that, in the relationship with the mobile phone, the main emotional dimension of women is excitement, which corresponds to 55.6% of the entire female sample (N=1,697). This dimension was followed by contentment, representing 31.2% of women (N=952). Feelings of depression were felt by 9.3% (N=284), while only 4.5% of women associated feelings of distress with the mobile phone (N=138). Based on this, we can conclude that the relationship between women and the mobile phone is extremely positive and is negative in only a very minor part (86.8% vs. 13.2%).

Let us now move on to illustrate the relationship between the emotions of women towards the mobile phone and family typology. Table 2 reports the distribution of the main dimensions of emotion within the various family types in the sample.

Table 2. The emotions of women associated with the mobile phone according to family typology

Russell's circumplex model of affect	Family type					Total
	Single person	Couple, no children	Couple, with children	One-parent with children	Blended	
Excitement	471 (57.0%)	386 (54.4%)	566 (54.9%)	100 (49.3%)	166 (63.6%)	1,689 (55.7%)
Distress	23* (2.8%)	30 (4.2%)	54 (5.2%)	11 (5.4%)	16 (6.1%)	134 (4.4%)
Depression	73 (8.8%)	39* (5.5%)	115* (11.2%)	21 (10.3%)	15 (5.7%)	263 (8.7%)
Contentment	259 (31.4%)	255* (35.0%)	296 (28.7%)	71 (35.0%)	64 (24.5%)	945 (31.2%)
Total	826 (100.0%)	710 (100.0%)	1,031 (100.0%)	203 (100.0%)	261 (100.0%)	3,031 (100.0%)

*Standardized residual is greater than | 2.0 |

Chi²=44,468; df=12, p<=.0001

The table shows that women living in a couple with no children are able to draw more contentment and less depressive emotions from the mobile phone than women

living in other types of family. Women living in a couple with children more often feel the depressive emotions in relation to the mobile phone. Single women are less distressed by the mobile phone compared with other women. Apart from these findings, standardized residuals do not reveal other significant differences between family types with regard to the emotional relationship between women and the mobile phone.

Profiles of women living in different types of families

In this section we describe the profiles of women living in different types of families, and we begin with women living in a single person family. Actually, today, women living in this type of family are rather mixed in terms of age: 39.2% are aged 65 years or older and 12.5% are aged less than 25 years. Furthermore, 32.2% have a low level of education and 44.1% are retired. More than half of these women live in essentially urban areas, and they are more present in France and Germany than in the other studied countries.

Women living in a couple without children are typically older people: those aged 65 years and over make up 33.0% of this category. Furthermore, of all these women 54.6% have a low education and 37.4% are retired. Nevertheless, housewives (17.6%) are also well represented in this family category. A high proportion of these women (28.3%) live in the UK.

As regards women living in a couple with children, most of them are aged 25–44 years (47.1%). Also, those aged 18–24 years are relatively well represented in this family

category (14.3%). In addition, these women have, most typically (45.3%), a medium level of education and show a high presence of housewives (21.0%) in comparison with the other women. They are most often employees (55.9%), but also students (12.2%) make up a significant part of this family type in comparison with the other types. Typically, these women live in essentially rural areas (45.1%) and more often in Italy (30.8%) than in the other countries.

In respect of one-parent families, women aged 25–44 years are the most represented age group (47.1%). A quarter of these women have a high level of education, the highest percentage of highly educated when compared to women living in the other family types. In contrast, women living in this type of family are also most commonly unemployed (8.4%). Furthermore, they are more likely to live in Germany (35.1%) than in other countries. Lastly, women living in blended families are more often aged 14–24 years (9.4%) in comparison with other family types. Owing to this, the number of students (13.0%) is a consistent. Furthermore, women living in blended families are more often from Spain (32.7%) than from the other countries.

Predicting women's emotions by socio-demographic factors: is family type the main predictor?

The results of multivariate analyses predicting women's emotions by family typology are presented in Table 3. In these analyses, the family comprising a couple with

children was chosen as the reference category. The controlled variables are not presented in the table as our main focus is in the connection between family type and emotions.

Table 3. Logistic regression models for women (one emotional dimension vs. others)

Family type	Excitement ¹	Distress ²	Depression ³	Contentment ⁴
(Ref. Couple with children)				
– Single person	1.084	.996	.920	.865
– Couple, no children	1.002	1.524	.744	.927
– One-parent with children	.774	1.279	1.019	1.257
– Blended	1.146	1.912*	.724	.617*
Nagelkerke R ²	.061	.170	.070	.208
Hosmer-Lemeshow	.211	.746	.076	.127
N	2,939	2,892	2,903	2,892

Cell entries are odd ratios from logistic regression analysis controlled for:

¹ activity, age, degree of urbanization, country

² activity, education, age, degree of urbanization, country

³ education, age, degree of urbanization, country

⁴ activity, education, age, degree of urbanization, country

* p < .05

The LRA models show that family is not a factor which strongly influences the emotional fabric of women. There is only an effect regarding the dimensions of distress and contentment. Women who are involved in both these emotional dimensions are those living in blended families: their relationships with the mobile phone are twice as likely to be distressing than those of women living in a couple with children and they are also likely to be less content than the reference group. Probably an explanation can be found in the fact that women living in blended families are more often than others young students (with this category more prevalent in Spain). These outcomes may also reflect the dissatisfaction of young women with their positions in society and, for instance, with the labour market, which is known to be especially difficult for the young in countries like Spain.

If not family, which are the other main predictors? To answer to this question we took a closer look at the other controlled variables. It turned out that country matters more. Women in France, Germany and Spain are more excited by the mobile phone than their Italian counterparts. As Italian women are more equipped with the mobile phone than women belonging to the other studied nationalities and also use it more, this result seems to confirm the validity of the emotional model of consumption (Jon Elster 1989). According to this model, the more a product is used the higher the risk that the satisfaction felt turns into its opposite: dissatisfaction. In fact, our analysis confirms that the higher the use of a mobile phone, the higher the distress and the lower the contentment among women.

Compared with Italian women, women in the other countries are less distressed in their relationships with the mobile phone; the least distressed being typically 18–24 year old women. In addition, the analysis of controlled variables reveals that women in France, the UK and Spain are less depressed and also more content with the mobile phone than Italians, who historically have been more equipped and more active mobile users.¹

Conclusions

The aim of this article was to explore the emotional meaning that women in five European countries today attach to the mobile phone and also to investigate which are the most influential socio-demographic variables in the development of their emotional fabric. The emotional meaning that women attach to the mobile phone today is very much positive. While in 1996 the positive emotions of women towards the mobile phone barely overcame the negative ones (51.3% vs. 48.7%), in 2009 the positive emotions of women towards the mobile phone represent 86.8% of the total emotions cited. The more women appropriate this device, the more their emotional impact becomes highly positive. The general trend of the emotions of women surrounding the mobile phone seems to contradict the emotional model of consumption, mentioned above. In fact, according to Jon Elster's model (1989), the satisfaction people feel when they consume something diminishes over time. The more intensively people use a device the more quickly they

¹ Moreover, the controlled variables show that women with a medium level of education are less depressed and more content than women with a low level of education as far as the mobile phone is concerned. Lastly, it also turns out that housewives are more content than women with a paid job. This probably stems from the fact that, through this device, they can overcome their social isolation. However, they are less excited than women with a paid job in their relationships with the mobile phone.

might become dissatisfied with it. Thus, satisfaction and dissatisfaction depend on the breaks between the acts of consumption. This model does not work in this case. It seems to work well in explaining the case of the Italian women, but it is not applicable to the whole female sample. It seems that, when the product examined is not a simple object but is a technological artefact and, instead of consumption, we are faced with use, the exact opposite happens. Instead of producing saturation and dissatisfaction, the reiteration of use might result in the multiplication of positive emotions, at least for a long period of time. Also, in the case of Italian women, if instead of choosing a cross-cultural perspective, we choose a diachronic perspective comparing the surveys of 1996 and 2009, this model does not work. In fact, it transpires that Italian women also reveal a decrease in negative emotions (from 50.3% in 1996 to 34.3% in 2009) and an increase in positive emotions (from 49.7% in 1996 to 65.7% in 2009) towards the mobile phone. Here, the problem is that the decrease in negative emotions and the increase in positive emotions are more moderate if compared to those enjoyed by women in the other countries investigated. But this can be explained by the fact that Italian women are perhaps subject to accumulation effects because of their more intense and extended use of the mobile phone (they were also the most equipped and the strongest users of the mobile phone in 1996).

Thus, our first hypothesis (H1), that today the positive emotions of women towards the mobile phone might prevail over the negative ones, is confirmed since saturation effects and dissatisfaction concern only a minor part of the emotions of women (13.2%).

In response to our second research question, which hypothesized family typology as very influential among the main socio-demographic variables in the development of the emotional fabric of women towards the mobile phone, it turned out that the family is a weak factor (while the country is much stronger). So, our second hypothesis (H2), that probably the emotions of women associate differently with the mobile phone depending on the type of family in which they live, has to be rejected. In fact, only minor effects emerged. The study provides evidence only that it would be women living in blended families who most often draw feelings of excitement from the mobile phone, although these differences are statistically insignificant. The fact that women living in blended families are more typically adolescents and students than others might partially explain this finding.

The modest influence of the family typology was an unexpected result, especially taking into account the evidence from the previous literature on this proposal. Maybe this result, along with the strong role played by the country, are interpretable in the sense that the mobile phone is a personal tool and is more influenced by individual moods, reactions and attitudes than by macro dimensions like the culture to which the user belongs or by contextual factors situated in a meso level, such as the type of family surrounding the user. Thus, our final conclusion is that further research on the mobile phone should situate it at the micro and macro level, not at the meso.

A last word on the limits of this study: in addition to all the well known limits of quantitative research, this study shows that a better and systematic integration of the

results of qualitative studies could offer precious tools to interpret some of the findings, such as those related to blended families.

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