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## RESEARCH ARTICLE

# The Language of Memory: Narrating Memories of Parents and Friends

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**Abstract:** The purpose of this study was to compare narrated memories of parents and friends, recounted by both males and females. A total of 177 Italian undergraduates were asked to recall and to write in detail one relevant memory regarding their relationship with either parents or friends during adolescence. Half of the participants wrote a narrative about parents and half about friends. Narratives were examined using both a content and a lexical linguistic method of analysis.

The results showed that the language of memories was substantially influenced by the identity of the social partners that were part of the remembered events. In particular the ratio of negative emotion words to all words and the use of 'I' personal pronouns were higher when participants recounted memory narratives about parents rather than friends, and 'We' was used more in narratives about friends. Gender differences were found as well. The authors interpret the results as suggesting that the language of memory is affected by the type of interpersonal relationship that exists between the narrator and the other participants in the remembered events as well as by the gender of the narrator. In other words, memory narratives both reflect and are influenced by the relationships within which an individual is embedded.

## INTRODUCTION: MEMORIES OF PARENTS AND FRIENDS

The focus of the present study is an exploration of memory narrative reports – narratives about the events of our lives that we remember and choose to tell others about. Telling narratives about personal life experiences is a common part of interpersonal interaction, and these narratives not only state the existence of a remembered event (for example, “when Mom took me out for my first driving lesson”) but they also communicate the meaning of that recalled event to the narrator [1]. In part, they do this through linguistic details about people, mental states, causality, temporal coherence, and specific emotions [2 - 4]. According to Labov and Waletzky [5], personal narratives optimally describe ‘tellable’ events; in other words, they involve experiences that elicit the listener’s attention through being interesting, emotional, unusual, or in other ways engaging. Although memory narratives to some degree are influenced by cultural prototypes of ‘typical’ stories within different cultures [6], they also both reflect and are influenced by the relationships within which an individual is embedded [7, 8]. Thus, a number of linguistic components of memory narratives may reflect qualitative properties of interpersonal relationships. The main purpose of the present study is to explore potential links between the language of memory, specifically, narratives about reportable personal experiences, and two of the most important interpersonal relationships for young adults, namely, those with parents and best friends.

### Interpersonal Relationships and Memory Reports

Although parents are of primary importance when children are younger, there is an important psychosocial change that takes place through childhood and especially adolescence: friends become increasingly important as children get

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older [9, 10]. This change in the relative importance of parents and friends is reflected by changes in the number of memories that individuals can readily access about parents *versus* friends across childhood and adolescence. Conway and his colleagues [11, 12] argue that the memories that are most meaningful both at the time of event occurrence as well as at the time of retrieval are those that are elicited by a time-limited task. When such a task, termed a memory fluency task [13, 14], was used with university-aged young Italian adults for independently eliciting memory reports about parents or friends across various periods of life (preschool years, elementary school, middle school, and high school and University years), it was found that memory reports about parents were comparatively more numerous in the preschool years and the frequency of parental memory reports remained constant across increasing child age [14]. However, the frequency of memory reports about friends increased linearly and exceeded those of parents in the later periods of life, thus reflecting changes in the importance of psychosocial relationships with parents and friends as children grow up. Reflecting a similar pattern with a different type of data, Larson and his colleagues [15, 16] time-sampled children and adolescents to investigate how much time they spent with various companions. They found a dramatic decrease in amount of time spent with parents as the age of the youth increased, as well as more time spent with friends.

The nature of parent-child and friendship relationships also changes over time. Parent-child relationships are inherently hierarchical and complementary. They become more characterized by conflict and negative affect as children get older, particularly as children approach adolescence [10], although affect during parent-child interaction has been shown to become more positive again in late adolescence [16]. The increase in negative affect is partly because adolescents are struggling with establishing personal identity and social autonomy [17]. Adolescents report more conflict as well as more intense anger in interactions with parents [18] than with friends [19], and display more positive affect when they are with their friends than with their parents [16]. This asymmetry is related to relationships with parents being less egalitarian as well as involuntary. Moreover, serious conflict does not terminate the relationship. In contrast, conflict with friends can threaten the existence of a relationship, and consequently, friendship relationships are more symmetrical. And as individuals get older, friends become increasingly important sources of emotional support and self-esteem [20, 21]. These changes in the affect of parent-child *versus* friendship relationships are reflected in young adults' affective ratings of their memory reports about parents and friends across age. Peterson *et al.* [14] found that the proportion of memories about parents that were rated as negative increased over age as individuals recalled memories from their preschool through adolescent years, whereas there was no change in the proportion of negative memory reports when recalling memories about friends.

### **Gender as a Moderator**

The relationships that adolescents and young adults have with their parents are often moderated by gender. A variety of research studies suggest that, in general, females have closer and warmer relationships with their parents in their adolescent years than do males [22]. They are more involved within family life [23], talk more about their plans and feelings with parents [24], and have more effective communication strategies with parents than do males [25]. They also seem to feel stronger obligations to support and respect their parents [26]. In contrast, parent-son relationships at this age seem to be more frequently affectively negative in tone than are parent-daughter relationships [27]. Males often use more confrontational tactics during conflict with parents [18] and in turn, parents are more likely to use coercive strategies with sons [27]. These differences in parent-daughter *versus* parent-son relationships are also reflected in the memory reports of young adults who are engaged in a memory fluency task. Peterson *et al.* [14] found that although memory reports that involved parents became increasingly likely to be rated as negative as young adults reported memories from older periods of their lives (preschool through late adolescence), this was particularly true for males. Fully half (51%) of the readily-accessible memories males reported about parents in a memory fluency task were negative when they recalled their high school and university years, *versus* only 37% of those by females.

Likewise, gender can play a moderating role in relationships between friends. Females typically have friendships that are more likely to emphasize intimacy, affection and self-disclosure [28, 29]. Their friendships are more likely to involve intense dyadic relationships with a small number of friends, *i.e.*, they are more exclusive [30]. They spend more time in discussion, particularly in sharing their feelings [31, 32]. In contrast, males are more likely to focus on activities and doing things together in their interactions with friends, and are less likely to talk about feelings and their private lives. Their friend interactions are more likely to involve groups as well as competition [33]. In terms of memory reports in a memory fluency task, Peterson *et al.* [14] found no differences in affect for memories of friends between males and females. However, males' memory reports about friends were more likely to be episodic, unique events rather than repeated events, which was interpreted as reflecting males' greater orientation toward doing activities with

friends rather than engaging more in interaction focused on talking and sharing feelings.

### **Narratives – The Language of Memories**

Interactions between interpersonal relationships and memory reports have been highlighted above, but the measures of memory that were used in much of this research typically took a broad-brush approach. For example, some described the sheer number of memories about different relationship partners that young adults could readily retrieve in a memory fluency task, or the overall affective tone of those memories [14, 34]. However, memory narratives are more complex than this.

One linguistic property that has been studied in relation to qualitative aspects of interpersonal relationships is pronoun use, and in particular, first person singular and plural pronouns ('I' and 'We'). Proportionately greater use of 'I' has been found to be associated with poorer relationship quality within couples in some research, such as lower marital satisfaction [35] and low involvement in dyadic communicative interaction [36]. These researchers, along with Williams-Baucom, Atkins, Sevier, Eldridge, and Christesen [37], concluded that proportionately greater use of 'We' and lesser use of 'I' seem to be linguistic indicators of higher quality and stability of a couple's relationship. Differential use of 'I' and 'We' has also been found to be associated with quality of friendship relationships [8]. When young women were asked to write a detailed narrative about a memory that involved their best friend, those with more qualitatively positive friendship relationships used proportionately fewer first person singular ('I') and more first person plural ('We') pronouns. In fact, the higher the degree of rated social support women experienced in their friendship relationships, the fewer 'I' pronouns they used, and conversely, the greater the degree of negative interaction they identified in their friendship relationships, the more the pronoun 'I' was used. The findings for young men were quite different, however: men who rated their friendships as more qualitatively positive had a proportionately greater use of 'I,' which the authors interpreted as consistent with males' friendship relationships being less characterized by intimacy than females' and more likely to have dominance hierarchy overtones [33, 38 - 40].

Prior research has also assessed emotion in personal narratives, by either rating the overall emotional tone or by individually counting and categorizing the specific emotion words that are used. These emotion words describe the emotions experienced by the narrator as well as others during the narrated event. They have been shown to reflect the overall emotional tone of experiences that are explicitly positive or negative [41], as well as are effective indicators of emotional tone in parent-child interactions [42] and romantic relationships [43].

In terms of young adults' memory reports about parents at various earlier points in their lives, as we stressed above, memory reports of experiences that involve parents become more negative as the rememberer increases in age from preschool-aged through adolescence [14]. Furthermore, those individuals that have parents who are more supportive and involved with their children have relatively more positive memory reports about parents than do those individuals with more conflictual and less positive parent-child relationships [7, 34, 44]. However, these researchers assessed the overall emotional tone of short memory reports that had been gathered during a memory fluency task rather than assessing the number and emotional valence of specific emotion words in individuals' memory narratives about parents – which are considerably longer than the short reports elicited by a memory fluency task. This is a more differentiated look at affect because a particular memory narrative could contain multiple emotion labels as well as a mixture of different types of emotions. Tani *et al.* [8] have done such a detailed analysis of specific emotion words in young adults' memory narratives about their best friends. Using the Language Inquiry and Word Count procedure (LIWC) developed by Pennebaker, Booth, and Francis [45] which provides a lexical analysis of text, Tani *et al.* [8] found that both males and females used more negative emotion words in their memory narratives about their best friends when their friendship relationships were characterized by an unequal power balance in the friendship. However, to our knowledge no one has applied such a lexical analysis of emotion words to memory narratives of parents, nor compared narratives of parents *versus* friends.

To sum up, because language, as Chung and Pannebaker [46] observed, is the currency of most human social processes and we use words to convey our emotions and thoughts as well as to tell stories and to understand the world, it is important to study how language is used to communicate memories. This is the purpose of the current research. Furthermore, Pannebaker's studies demonstrated that not only content words can be indicators of mental states and social relations, but function words such as pronouns can as well.

### **The Current Research**

The purpose of the present study was to compare the narratives young adults provide about memories that involve

their parents to those involving their best friends for events that occurred during their late adolescence or early adulthood (high school and university years). Since there are substantial differences in the number of readily accessible memories about parents *versus* friends as well as the overall affective valence of these two types of memories when short reports are elicited by a memory fluency task [14], we anticipated differences when a more fine-grained analysis of the language of longer memory narratives was conducted. To avoid interference effects between the two types of memory narratives, participants were asked to provide only one memory narrative, and half of the participants were asked to do so about their parents and the remainder about friends. The memory narratives were analyzed using the LIWC procedure [45] for a number of types of words. In addition, the memories were rated in terms of their overall affective valence.

**Hypotheses.** The LIWC provides information on the ratio of emotion words to all words, and its listing of the specific words used in the narratives allows one to assess the affective valence of these words. We expected there to be differences in the ratios of emotion words to all words between parent and friend narratives, and that the valence of these emotion words would differ. We predicted that narratives about parents would have more negative emotion words because Tani *et al.* [8] found that the number and emotional valence of emotion words are related to relationship quality, at least for friendships. Although they did not assess narratives about parents, it makes sense that emotion words in narratives about parents *versus* friends would differ since short memory reports (elicited by a memory fluency task) about parents are more negative than those about friends from this period of an individual's life [14]. Furthermore, relationships with parents are more likely to be conflictual and affectively negative at this age [10, 17] and include more intense anger [18]. We expected that the proportion of negative emotion words would be especially high in males' narratives about parents, in keeping with the gender differences in parent-child relationships discussed above. In addition, when the overall affective valence of narratives is rated, it is predicted that narratives about parents would be more negative than those of friends, especially for males.

A number of other types of words were also assessed because they reflect important components of narratives [1, 2]: number of words, first person singular and plural personal pronouns and third person singular and plural personal pronouns, mental states such as cognitions, as well as causal, temporal and adversative connection words. In keeping with the research on use of pronouns described above, we hypothesize a greater use of 'I' in narratives about parents and greater use of 'We' in narratives about friends, as well as longer narratives by females. In terms of words denoting cognitions and connectives, given the fact that to our knowledge, no prior research has explored how these types of words differ between narratives about friends and parents, we have no *a priori* hypotheses about how the use of them would be related to the two types of narratives.

## METHOD

### Participants

A total of 177 university students from the University of a city in the centre of Italy (89 males and 88 females) were recruited. Students were 18 to 24 years old ( $M = 21.5$  years;  $SD = 1.8$ ); males' mean age was 21.7 years ( $SD = 2.1$ ), and females' mean age was 21.3 years ( $SD = 1.5$ ). The majority of these participants came from the centre of Italy (82.7%), with the remainder from Southern (9.2%) or Northern (8.1%) Italy. All participants came from families of middle or high socioeconomic level with more than 65% of their fathers and 63% of their mothers having a high school diploma or university degree. As well, 61.5% of the participants had at least one sibling and 72.1% currently lived at home with their parents. The students were divided randomly into two groups: the first consisted of 94 participants (42 females and 52 males), the second consisted of 83 participants (46 females and 37 males). The two groups were also similar in age (mean = 21.7,  $SD = 1.8$  vs. mean = 21.5,  $SD = 1.8$ ), geographical provenance (80.6% vs. 83.4% came from the centre of Italy), family education (first group's father's and mother's high school diploma were respectively 60% and 58%; second group's ones were 67% and 63%), and family structure (in the first group 60% had at least one sibling and 70% lived at home, in the second the percentages were 62% and 73% respectively).

### Procedure

Participants were recruited in class during courses at the University. They were informed of the project's aims and were told that the experimental procedure required them to write about their past experiences and that it would last not more than 30 minutes. Participation in the research was voluntary and involved about 95% the students enrolled in the courses. All participants filled out a demographic form requesting information about their gender, age, place of birth, parents' educational level, if they had siblings, and if they lived with their parents. No incentives for participation were

given. Data were collected in class collectively by two researchers trained in narrative studies. The research was conducted in accordance with the guidelines for the ethical treatment of human participants of the American Psychological Association. Prior permission was obtained from the University Dean and President as well as each course professor. Participants provided their individual consent and could withdraw at any time.

### **Instruments**

A memory narrative task was given that consisted of two parts. In the first part a memory fluency task was used. Participants were given a sheet of paper with separate lines labeled for memory 1, memory 2, memory 3 and so on. They were then instructed: "Recall as many memories as you can that include your best friends (Group 1) or your parents (Group 2) from Middle School onward. You have three minutes to write these memories on this sheet of paper." In the case of the first group, it was clarified in the instructions that they were not to choose as friends either those individuals with whom they had been, or were, romantically involved, or family members. This procedure is recommended by Becker, Johnson, Craig, Gilchrist, Haigh, and Lane [47]. However, we did not restrict participants' choice to same-sex best friends. The time-limited recall task (timed by the researcher) was used because prior research has argued that the memories that are more readily accessible are those that are meaningful not only at the time of retrieval but also at the time the events occurred [11, 12]. Moreover, as Conway and his colleagues have further argued, the most accessible memories from a particular period of one's life are best measured by providing subjects with a limited amount of retrieval time. For more information about the Memory Fluency Task see Peterson *et al.* [14].

In the second part of the task a sheet of paper was given to the participants and they were told: "Please select the most significant memory from those previously recalled regarding your relationship with your 'best friends' (first group) or 'your parents' (second group), and describe it in writing in detail." The two sides of this sheet of paper had a maximum of 40 lines. This detailed memory task allows one to assess the narrative properties of a significant memory report. Participants were given 15 minutes to do this narrative task (timed by the researcher).

### **Content Coding**

All narratives about friends and parents were first transcribed in txt format. In order to describe the main features of their content, all narratives were analyzed according to the content categories described below.

#### ***Number of Characters (Besides the Narrator)***

These distinguished between one *vs.* more than one other person (*i.e.*, multiple friends or both parents).

#### ***Theme of the Narrative***

Considering the importance of the issues of identity, autonomy, separateness and intimacy, and communion in individuals who are similar in age to our participants, we analyzed texts according to the themes of agency and communion described by McAdams [48] and Bakan [49]. Agency is connected to agentic themes of self-mastery, status and victory, achievement and responsibility, and empowerment. In contrast, communion is connected to intimacy, motivation that emphasizes the communal themes of friendship and love, dialogue, caring for others, and sense of community in the significant scenes in the life stories. Given that a particular event may contain both issues we also included a mixed category where both agency and communion were present.

#### ***Age of Participants when the Narrated Event Occurred***

The event was categorized as occurring during early adolescence (11 to 15 years, corresponding to middle school) or middle-late adolescence (16 years to the present, corresponding to the high school – university period). This distinction was also used in previous research [50].

#### ***Episodic Versus Repeated Events***

Narratives describing a single event that took place at a specific place and time were classified as episodic narratives (*e.g.*, 'On my 16<sup>th</sup> birthday my parents gave me a motorcycle ....'), whereas narratives describing repeated events or events that extended over days or weeks were classified as repeated event narratives (*e.g.*, 'I remember the endless discussions between my parents during my high school years.....' or 'Those wonderful evenings with my friends watching the stars during the summer before I began University.....'). We followed the same scoring system as used in other research (*e.g.*, Peterson *et al.*, 2008; 2009).

### **Reportability**

Narratives were dichotomized as having either high or medium/low reportability. In keeping with Labov's theory [5, 51], we relied on an evaluation of the degree of novelty or violation of expectation of the event. Events like 'the first time I went to a Disco' or 'the death of my father' or 'When I failed the 10<sup>th</sup> grade and I was obliged to repeat it' were considered to be high reportability event narratives. In contrast a narrative about daily life with friends during high school ('one of those long soccer games after school'), in a context where this event did not represent a particularly novel aspect of ordinary life, was considered to be of medium-low reportability.

Two raters who were blind to the purposes of the study independently read all narratives and, using the systems described above, classified them in terms of each of the qualitative features described above. Disagreements were resolved through discussion. Cohen's K coefficients for agreement were respectively: Number of characters:  $K = .91$ , Theme:  $K = .92$ , Age at the time:  $K = .81$ , Episodic vs. repeated event:  $K = .95$ , Reportability:  $K = .87$ .

### **Language Coding**

Narratives were analyzed using the Language Inquiry and Word Count procedure (LIWC) [45] for a lexical analysis of the text in order to quantify linguistic dimensions of these narratives. The LIWC program electronically processes text files one word at a time, matching the base form of words to an extensive dictionary of over 2290 word stems, and provides the percentage of words in several linguistic, emotional, and cognitive categories, regardless of the content of the events that are reported. A frequency count of the total instances of target words from each category is provided, and this count is then divided by the total number of words in the text to control for individual differences in verbosity. Thus, scores reflect a percentage of word matches in each category. The LIWC dictionary has been demonstrated to be reliable and exhaustive in its counts, categorizing approximately 85% of specific words used in a wide corpus of narratives and has been utilized by several narrative researchers [45, 52, 53]. In the present study, we used an Italian version of this dictionary that was elaborated and used on an Italian sample by Smorti, Pananti and Rizzo [54]. Given the hypotheses of this study the following categories included in the LIWC dictionary were examined:

#### **Overall Word Count**

This is a frequency count of the number of words.

#### **Personal Pronouns (that is, the Characters of the Story)**

These distinguished between singular first person ('I'), plural first person ('We'), and third person singular or plural (overall forming "Other/s" category according to LIWC's dictionary).

#### **Cohesion/syntactical Connections**

These included causal (because, therefore, so) temporal (when, after, later) and adversative (but, in contrast, whereas) connections.

#### **Mental States**

These included positive emotion (e.g. 'happy, "love," 'pride'), negative emotion (e.g. 'hate,' 'afraid,' 'sad'), and cognition ('think,' 'believe,' etc.).

Data analyzed from language categories 2 - 4 above were percentages of the target words in proportion to the overall number of words calculated by LIWC software.

#### **Affective Tone**

The overall affective tone of the narrative was evaluated by two independent raters. They rated the narratives on a scale ranging from 0 to 3 for two dimensions, separately: the uncomfotableness/discomfort dimension (also labeled negative affective tone) and wellbeing/agreeableness dimension (also labeled positive affective tone). Interrater reliability was adequate (Cohen's  $K = .91$ ).

## RESULTS

### Content Analyses

The memory narratives produced by the two groups of participants were compared on the qualitative characteristics described above to see if there were differences between the two types of narratives. Likewise, potential gender differences were assessed.

#### *Number Of Characters*

Both groups of participants wrote narratives that primarily had more than one character (in addition to themselves). In the case of narratives about friends, there were primarily two or more same-sex friends. In the case of narratives about parents, they primarily included both parents. No differences between the two groups emerged (68% and 69% respectively, chi square = .007, *ns*). As well, there were no differences between genders (70% and 65% for females and males, respectively, chi square = .01, *ns*).

#### *Theme*

In both groups the most common theme was agency (53% and 59% respectively for narratives about friends and parents), followed by the theme of communion (25% and 33%) and mixed themes (21.3% and 8%). The chi-square analysis approached significance, (chi square = 5.12,  $p = .06$ ), due to the mixed category. Again, there were no differences between genders (Agency 60% and 55%, Communion 27% and 35%, mixed 12% and 16% for females and males, respectively, chi square = 1.51, *ns*).

#### *Age at the Time of the Narrated Event*

In both groups the narrated events mainly occurred during the middle-late adolescence or high school years (79% and 71% for narratives about friends and parents, chi square = 1.81, *ns*). No differences between genders were found (77% and 73% for females and males, respectively, chi square = .66, *ns*.)

*Episodic vs. repeated events* Narratives were mostly episodic in both groups (86% and 84%, chi square = .118,  $p = ns$ ). The two genders were quite similar (90% and 85% for females and males, respectively, chi square = .99, *ns*]

#### *Reportability*

Both groups of participants wrote about events with high reportability (84% and 88% respectively for friends and parents, chi square = .555, *ns* and 80% and 90% for females and males respectively, chi square = .84, *ns*). In the case of narratives about friends, highly reportable events included both positive and negative events such as turning points, friends' support during milestone experiences, deaths, losses, challenging school issues, and quarrels with friends. In the case of narratives about parents, highly reportable events included parents' support to the narrator during difficult situations (school, sport, illness), and fighting with parents about various issues and choices such as how to spend summer holidays or sleeping at the boyfriend's house.

### Language Analyses

#### *Univariate and Multivariate Analyses*

Given the focus of our research, based on our prediction that autobiographical narratives would differ depending on the type of relationship (friends or parents) and gender, we first present univariate and multivariate analyses of variance using gender and type of relationship as independent and interacting variables. Dependent variables are the different groups of homogeneous text indicators. Word count was analyzed by means of an ANOVA and the other variables by multivariate analyses. Table 1 shows descriptives of the dependent variables differentiated by gender and type of narrative or relationship. A 2 x 2 (gender x type of narrative) multivariate analysis of variance was run separately for each of the four categories of variables other than word count, namely, for pronouns (' I ', ' We ', and third singular/plural personal pronouns), connectives (causal, temporal, and adversative), mental states (cognitions, positive emotions and negative emotions), and affective evaluation of the story (uncomfortableness and wellbeing, *i.e.*, negative and positive affective tone).

**Table 1. Means and standard deviations for dependent variables in parents' and friends' narratives separated by gender.**

	Parents						Friends					
	Females		Males		Total		Females		Males		Total	
<i>Measures</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>	<i>M</i>	<i>S.D.</i>
No. of words	202.04	85.32	160.77	72.93	183.64	82.2	284.07	97.94	143.86	88.23	206.51	115.8
<b>Pronouns</b>												
I	6.48	2.3	6.16	2.38	6.34	2.31	4.36	2.44	4.00	2.50	4.18	2.49
We	.51	.72	.30	.47	.42	.64	1.16	1.12	1.04	1.24	1.08	1.18
Others	.41	.81	.57	.75	.48	.78	.52	.73	.30	.63	.40	.70
<b>Connectives</b>												
Causal	.83	.76	.28	.62	.59	.75	.30	.37	.48	.89	.40	0.72
Temporal	1.61	1.04	1.42	1.03	1.53	1.03	1.50	.86	1.88	1.38	1.73	1.18
Adversative	.96	.76	.57	.51	.78	.68	.75	.52	.73	.91	.74	.75
<b>Mental States</b>												
Cognitions	6.50	2.8	5.3	2.8	5.90	2.60	5.02	1.82	4.71	2.15	4.85	2.02
Positive Emotions	.85	.80	.65	.89	.76	.84	.79	.85	.85	1.06	.82	.97
Negative Emotions	2.40	1.60	2.20	1.30	2.33	1.53	1.71	1.36	1.70	1.34	1.71	1.34
<b>Affective Tone</b>												
Positive	1.00	1.2	1.00	1.20	1.00	1.27	1.60	1.40	2.29	1.20	1.94	1.35
Negative	1.45	1.30	1.78	1.18	1.60	1.28	1.21	1.44	.48	.98	.80	1.23

**Overall Word Count**

There were no differences in total word count between narratives about friends *versus* parents ( $F(1,176)=2.24, ns$ ). However, females wrote longer narratives ( $F(1, 176) = 43.15, p = .001, \eta^2 = .22$ ) than did males ( $M_s = 241.20; SD = 99.92$  vs.  $M_s = 150.89; SD = 82.21$  for females and males respectively).

**Personal Pronouns**

Type of narrative significantly influenced pronoun use (Pillai trace = .19,  $F(3, 171) = 13.41, p = .001, \eta^2 = .19$ ), specifically for first person singular ('I') ( $F(1,176) = 33.70, p = .001, \eta^2 = .16$ ) and plural ('We') ( $F(1,176) = 21.52, p = .001, \eta^2 = .11$ ) pronouns. In parent narratives, 'I' was used more ( $M = 6.34; SD = 2.31$ ) and 'We' ( $M = .42; SD = .64$ ) was used less in comparison to friend narratives ( $M_s = 4.18; SD = 2.49$  vs.  $1.08; SD = 1.18$ ) for 'I' and 'We' respectively). No differences emerged for third person pronouns. No differences between gender (Pillai trace = .021,  $F(3,171) = 1,269, ns$ ) or gender x groups interaction (Pillai trace = .017,  $F(3,171) = 1,042, ns$ ) emerged.

**Connectives**

Main effects for type of narrative and gender were not found; rather, there was a type of narrative x gender interaction (Pillai trace = .083,  $F(3,171) = 5.16, p = .01, \eta^2 = .08$ ). Specifically, causal connectives were used more in parent ( $M = .84$ ) than friend ( $M = .29$ ) narratives by females while males ( $M = .48$ ) used more causal connections in narratives about friends than did females ( $M = .30$ ) ( $F(1,176) = 11.07, p = .001, \eta^2 = .06$ ). No significant differences emerged both for temporal ( $F(1,176) = 2.77, ns$ ), and for adversative connectives ( $F(1,176) = 2.95, ns$ ).

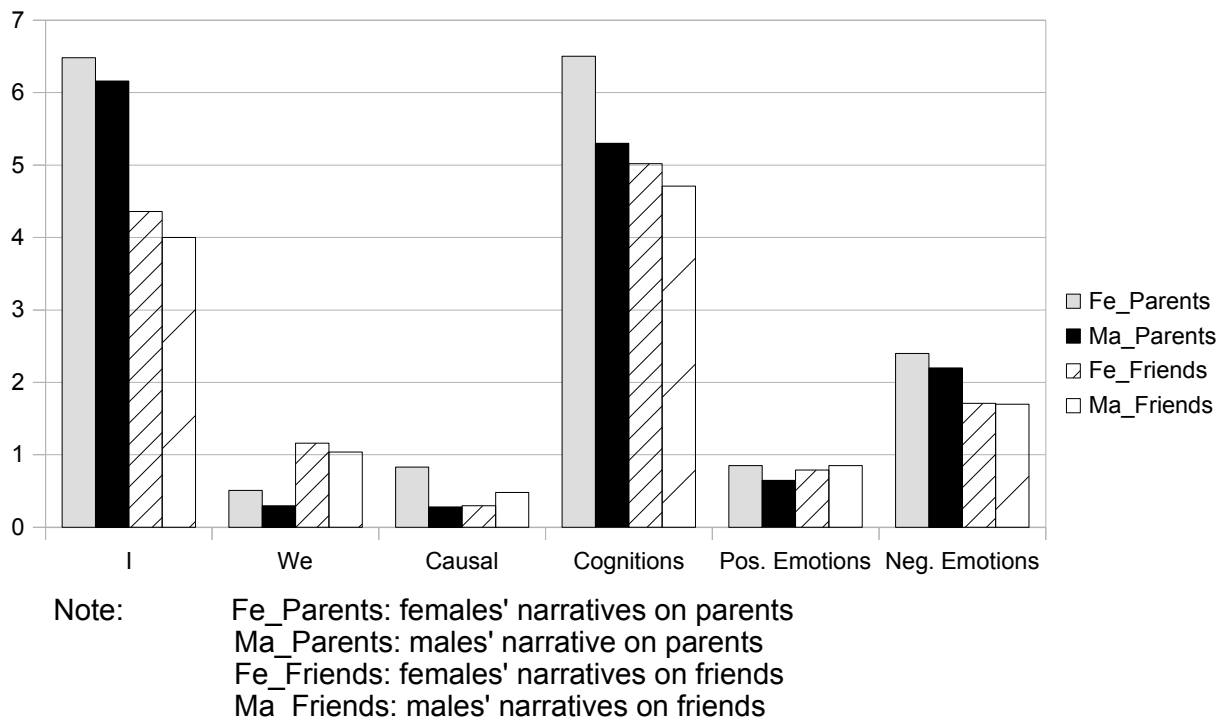
**Mental States**

These were influenced by type of narrative as well (Pillai trace = .087,  $F(3,171) = 5.408, p = .001, \eta^2 = .08$ ), in particular as far as negative emotions ( $F(1,176) = 7.02, p = .01, \eta^2 = .05$ ) and cognitions ( $F(1,176) = 9.47, p = .01, \eta^2 = .05$ ) were concerned. In narratives about parents, both negative emotion words ( $M = 2.33$ ) and cognitions ( $M = 5.90$ ) were used more than in narratives about friends ( $M_s = 1.71$  and  $4.85$ , respectively, for negative emotions and cognitions). No difference emerged between gender (Pillai trace = .034,  $F(3,177) = 2,107, ns$ ) or gender x group (Pillai trace = .024,  $F(3,177) = 1,442, ns$ ).

Graph 1 gives a synthetical representation of these results concerning the differences among gender and tasks as to I, We pronouns, positive and negative emotion, cognition and causal connectives.



### Females' and males' narratives on parents and friends



Graph (1). LIWC's measures.

#### Overall Affective Tone

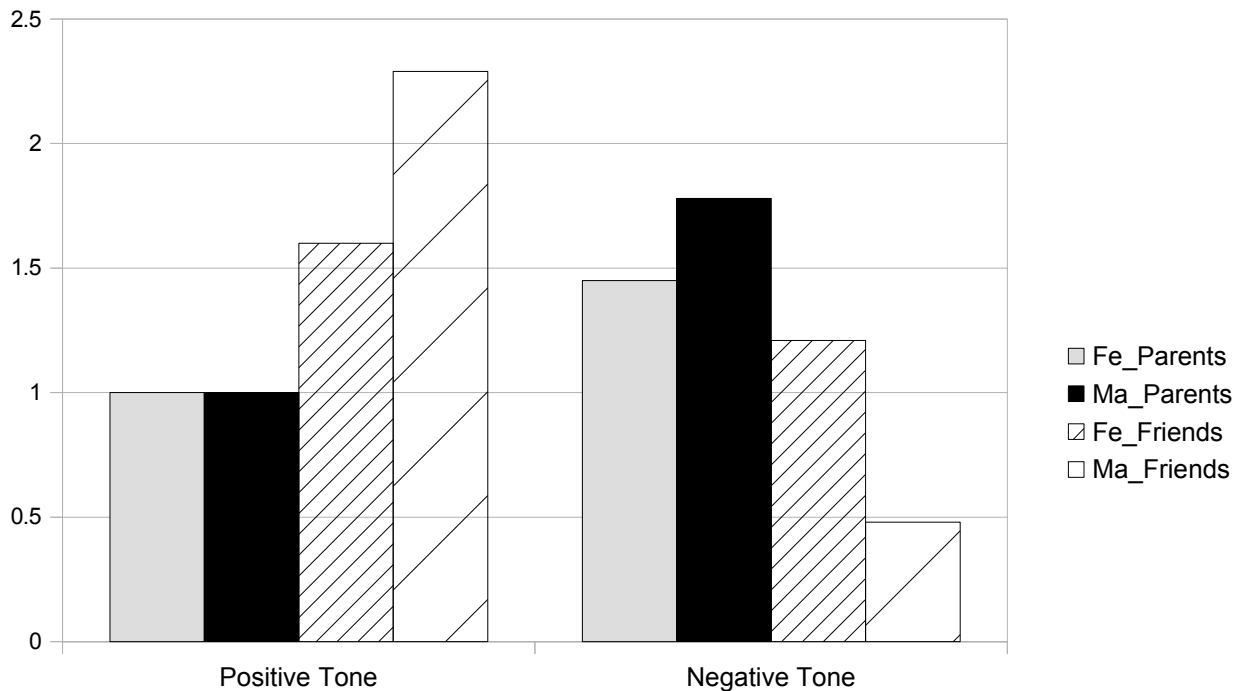
The affective evaluation of the narrative was significantly influenced by type of narrative (Pillai trace = .11,  $F(2,172) = 11.08, p = .001, \eta^2 = .11$ ). Specifically, positive affective tone ( $F(1,176) = 20.7, p = .001, \eta^2 = .10$ ) was found to be greater in narratives about friends ( $M = 1.94$ ) than in those about parents ( $M = 1.00$ ), while negative affective tone ( $F(1,176) = 16.93, p = .001, \eta^2 = .09$ ) was found to be greater in narratives about parents ( $M = 1.60$ ) than in those about friends ( $M = .80$ ). Moreover, a gender x type of narrative interaction emerged (Pillai = .04,  $F(2,172) = 4.08, p = .05, \eta^2 = .05$ ). Specifically, a gender x type of narrative effect occurred only for negative affective tone ( $F(1,176) = 7.97, p = .005, \eta^2 = .05$ ) but not for positive tone ( $F(1,176) = 2.40, ns$ ): males expressed more negativity in narratives about parents ( $M = 1.78$ ) than did females ( $M = 1.45$ ), while in narratives about friends, females expressed more negativity ( $M = 1.21$ ) than did males ( $M = .48$ ).

Graph 2 gives the representation of these results concerning gender and task differences as to overall positive and negative affective tone.

#### Hierarchical Regression Analyses

Separate hierarchical regressions were calculated for each of the variables except word count. In all regressions, narrative type (parent *versus* friend) and gender were entered in the first step, and the interaction of narrative X gender was entered in the second step. The models are summarized in Table 2.

Females' and males narratives on parents and friends



Note: Fe\_Parents: females' narratives on parents  
 Ma\_Parents: males' narrative on parents  
 Fe\_Friends: females' narratives on friends  
 Ma\_Friends: males' narratives on friends

Graph (2). Overall affective tone of the narrative.

**Personal Pronouns**

For 'I', model 1 was significant,  $p < .001$ . Narrative type was the only significant predictor, with narratives about parents using more 'I' pronouns than those about friends. For 'We,' model 1 was also significant,  $p < .001$ . Again, narrative type was the only significant predictor, with narratives about friends using more 'We' pronouns than those about parents. There were no significant predictors for use of third person 'Other' pronouns.

**Connectives**

For causal connectives, the interaction between narrative type and gender was the only significant predictor,  $p < .001$ . Follow-up regressions were done with each gender separately, and for females, narrative type was significantly associated with the use of causal connectives,  $F(1, 87) = 19.11, R^2 = .17, \text{stand. } \beta = -.42, p < .001$ . Females used more causal connectives in their narratives about parents than about friends. There was no difference in males' use of causal connectives between narrative types. For both temporal and adversative connectives, there were no significant predictors.

**Mental States**

For words about cognitions, model 1 was significant,  $p = .01$ . Both narrative type and gender were significant predictors. Words for cognitions were proportionately higher in narratives about parents as compared to those about friends, and women provided proportionately more cognition words than did men. For positive emotion words, there were no significant predictors. However, for negative emotion words, narrative type was a significant predictor (model 1,  $p < .01$ ). Negative emotion words were proportionately more frequent in narratives about parents than about friends. There were no other predictors.

**Table 2. Summary of hierarchical regression analyses for number of words, the proportion of pronouns, connectives, and mental states, as well as ratings of overall affective tone by story type and gender <sup>1</sup>.**

Dependent Variable	Story $\beta$	Gender $\beta$	$R^2$	Model 1 $F(2, 177)$	Story $\times$ Gender $\beta$	$R^2$	Model 2 $F(3, 177)$	$\Delta R^2$
<b>Pronouns</b>								
I	-.40***	.06	.17	18.78***	-.001	.17	12.01***	.01
We	.33***	.08	.11	11.04***	-.07	.11	7.33***	.01
Other	-.05	.03	.004	.35	.53	.02	1.15	.02
<b>Connectives</b>								
Causal	-.11	.11	.03	2.59	-1.02***	.09	5.45***	.06**
Temporal	.08	-.04	.01	.84	-.49	.02	1.4	.01
Adversative	-.02	.13	.02	1.6	-.54	.02	2.06	.02
<b>Mental States</b>								
Cognitions	-.22**	.15*	.08	7.6**	-.38	.09	5.64*	.01
Positive Emotions	.07	.06	.002	0.2	-.29	.01	.41	.01
Negative Emotions	-.20***	.05	.04	4.1**	-.23	.05	2.8*	.01
<b>Affective Tone</b>								
Positive	.32***	-.11	.13	12.48***	-.49	.14	9.32***	.01
Negative	-.29***	.09	.1	9.45***	.83**	.14	9.21***	.04**

<sup>1</sup> Note: Step 1 included the variables of Story Type and Gender (Model 1), and Step 2 included the Story x Gender interaction (Model 2)

\*  $p < .05$  ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Overall Affective Tone**

For ratings of overall positive tone, the type of narrative was the only significant predictor (model 1,  $p < .001$ ). Ratings of wellbeing were higher in narratives about friends. In terms of ratings of overall negative tone, model 1 showed that type of narrative predicted negative tone, with those about parents being higher in negativity than those about friends. However, model 2 was also significant, showing an interaction between type of narrative and gender,  $p = .006$ . Additional regressions that were done separately for each gender showed that negativity was higher in males’ narratives about their parents than friends,  $F(1, 89) = 36.32, R^2 = .29, \text{stand. } \beta = -.54, p < .001$ . In contrast, for females there was no difference in ratings of negativity in stories about parents *versus* friends

**DISCUSSION**

The main aim of this study was investigating contrasts between the narratives of memories involving parents *versus* friends. The expectations were that there would be differences in the language of memories (*i.e.*, memory narratives) depending upon the social partners that were included in the memories. We focused on memory narratives involving two of the most important types of social partners that young adults have, namely parents and best friends [10]. Overall our results showed minimal differences in qualitative properties of the two types of narratives. Both in narratives about parents and friends, participants typically wrote stories with multiple characters in addition to themselves, the remembered events occurred during high school or university years, events were episodic and had high reportability. Furthermore, the narrated events primarily had an agency theme. However, there were considerably more memory narratives with mixed themes (*i.e.*, both agency and communion) when participants were narrating about friends. As an example of a narrative in which the theme of agency was interconnected with communion, some participants talked about how friends' support or joint participation in a group had helped the narrator overcome difficulties which in turn had strengthened his/her agency. Another example is where the loss of a friend or a group fostered more independent aspects of the Self in the narrator. Such co-occurrence of agency and communion seldom occurred in narratives about parents. As to results derived by LIWC analysis, one should recall that LIWC creates variables that control for length. That is, a ratio is created by dividing the number of word tokens of a particular category by the total number of words. Thus, the difference in number of words between groups was not a factor. In terms of the linguistic characteristics of the narratives, as we hypothesized and has been found by others [8, 55], women’s narratives were longer than men’s. However, in Tani *et al.*, only narratives about friends were investigated. Gender differences could not be compared in narratives about parents *versus* friends, as was done here. We also anticipated that memory narratives would include proportionately more negative emotion words and fewer positive emotion words when the narrative focused on events with parents rather than friends, and that this would be especially true for memory narratives by males.

Both these expectations were confirmed. The language of memories was substantially influenced by the identity of the social partners that were part of the remembered events. In particular, both the multivariate and regression analyses found that the ratio of negative emotion words to all words was higher when participants recounted memories about parents rather than friends, although the proportion of positive emotion words did not differ between narrative types.

When one assesses the overall affective tone of memory narratives rather than focusing on the use of specific categories of words, the results paint a similar picture. Affective tone was rated as more positive in the narratives about friends in the multivariate analysis. However both the multivariate and regression analyses showed a more complex relationship for narratives about parents: the affective tone was negative in males' narratives about their parents, but this was not true for females' parent-narratives. For females, ratings of negative affective tone were similar for both parent and friend narratives.

Why might memory narratives about parents have more negative emotion words for both genders and a more negative affective tone for males in particular? The research participants are recalling events that date from early adolescence on, and parent-child relationships have been shown to become more characterized by conflict and negativity as children progress from childhood into adolescence [10, 17], and intense anger is more frequent in parent-child than friend interactions [18]. Late adolescents and young adults, which is the age of our participants, are establishing independence and identity [56], and, for some, this results in contentious interaction with parents [57]. However, note that there is an interaction with gender in terms of negative affective tone in narratives about parents and that negativity is true only for males. Other research has shown that females have closer and more involved relationships with their parents than do males [23], and importantly, communicate with them more about their feelings [24, 58]. Such affective communication probably helps in the management of conflict [25], and one outcome may be that females overall are less likely to narrate parental stories that reflect a negative affective tone.

The relative use of pronouns differed in the narratives, depending upon whether parental or friend memories were being recounted as well as gender of the narrator. 'I' is a first-person pronoun that separates the speaker from others and stresses the speaker's own perspective; in contrast, 'We' is a communal first-person pronoun that is inclusive in perspective. As we predicted, both males and females used 'I' relatively more in their narratives about parents and 'We' proportionately more in their narratives about friends. Thus, parent narratives stressed the speaker's separation from parents and their contrasting perspectives. When talking about friends, even though they still often use 'I,' narrators more frequently indicated communion by using 'We'. In the qualitative analyses, both parent and friend narratives were most likely to express the theme of agency. Thus, it is possible that in narratives about friends, agency does not have the meaning of an 'I' separated or opposed to others (as it often seems to in parent narratives), but rather that of being in a group, an experience of 'group agency'. Adolescents may have an agency experience when – as a group – they have new experiences of independence or autonomy, separated from the adult world. The use of third person pronouns like 'he,' 'she,' or 'they' (the category of 'Other') did not differ between narrative type (parent *vs.* friend) or gender.

The pattern of pronoun use found here supports previous results of Pennebaker's seminal works on the psychological function of function words such as pronouns [40]. Without creating too rigid an association between 'I' and conflict as well as 'We' and cooperation, Pennebaker cites many cases, drawn from the language used by media, written biographies, and experimental studies that support a psychologically different meaning of the two pronouns. Specifically, 'I' has a meaning that suggests 'being in front of,' 'exercising own power', or 'being different from,' while 'We' is more suggestive of 'being together,' or 'being part of'.

The use of cognitions (*i.e.*, words like 'think,' 'believe,' *etc.*) also differed depending upon whether parents or friends were included in the story, and ratios of these words were greater in parent narratives by both males and females, with females using them relatively more than did males. These words explicitly put forward one's cognitive processes and are often part of trying to make others understand or convince others of one's point of view, or else justify one's own actions. Their greater use in parent narratives may reflect the increased likelihood of divergence of opinion in parent narratives in comparison to friend narratives, and the greater use by females may reflect their likelihood of having better communication with their parents [24, 58], which would include explanations and justifications of actions and beliefs.

In terms of connectives, females used causal connectives more in parent narratives while males used them more in friend narratives. Connectives are important because they serve to make narratives more cohesive [59]. In the present study, females appeared to be knitting together more cohesive narratives when talking about parent-child interactive events than were males. This finding also seems to be consistent with prior research suggesting that females have more

effective communication strategies with parents than do males [25], and so perhaps females were describing more reflective and causally explanatory parent-child joint events and conversations. In contrast, males were more likely to use causal connectives in friend narratives. Their decreased use of causal connectives to explain events in parent narratives and greater use of them in friend narratives may be a reflection of less effective communicative strategies with parents in comparison to friends.

Overall, the language of narratives, specifically the use of pronouns, connectives, and emotion words, differed depending upon the social partners that were included in the events being related. As well, there were differences depending upon the gender of the narrator. Such differences were consistent with our hypotheses and represents a novel result because it confirms in terms of memory narratives (that is, retrospective accounts) what developmental research has found directly in experimental investigations.

## LIMITATIONS

There are a number of limitations with the current study. First, the sample was not even in terms of gender for the different groups. The group that responded in the friend condition was composed of 52 males and 42 females, 94 participants in all, while the group that responded in the parent condition was composed of 37 males and 46 females, 83 participants at all. The reason for this was that the participants came from classes at the university, and we have no control over the size of the classes or of how many students choose to participate. The classes were assigned randomly to the different conditions, but everyone within a class necessarily had the same condition. Each sample passed the 'magical "30" size that is stressed by the Central Limit Theorem. If we had done individual recruiting in order to equalize sample size in each condition, the recruitment and testing conditions would have been different, which could potentially have had an effect. Secondly, this study included only one cultural sample, namely young adults from Italy, and findings may be different if other cultural groups are studied. In particular, some linguistic features of the narratives about parents may be related to the cultural tradition of young Italian adults continuing to live with their parents until marriage. Given that the two groups were similar in the percent of participants living at home we thought it unnecessary to consider living at home as a predictor variable. Moreover, 'living at home' during university only means that a student is officially considered as living at home even if they spend months abroad. Finally, the memories are about events that happened when students were much younger and everyone lived at home. These reasons convinced us that it was appropriate to use the variable "living at home" simply as a control variable (similar to others such as number of siblings or profession of parents), ensuring that the two groups were comparable.

An additional limitation is that this investigation does not consider the specific character of the respondents' relationships with their parents or their friends. Memory narratives of parents are affected by the quality of the relationship between individual parent-child dyads [34]. Likewise, memory narratives about friends are affected by the quality of friendship relationships [8]. The complexity added through consideration of the nature of each individual's relationships with parents and friends is missing from this investigation. This would be an excellent direction for future research – to provide a more nuanced view of how memory narratives of different key social partners are affected by the quality of one's relationships with them, in addition to whether those partners are parents or friends, or even romantic partners.

## CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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