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# Attachment security and narrative elaboration

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A key means of getting to know someone is through the sharing of personal experience narratives, an ability that shows considerable individual variation. Past research has documented a relationship between narration in conversations between children and their mothers and attachment security. However, children's narrative contributions are often embedded in an ongoing conversation which may be structured differently by mothers who also have assessed the extent to which their children use them as a secure base. In the present project, these two measurements were independent. Children's narration to an attentive, but non-scaffolding, stranger was investigated to see whether that, too, would correlate with security as assessed by mothers. Participants were 32 4-year-old children and their mothers. The security of children's attachment to their mother was assessed using the revised parent-reported 90-item Q-Sort and correlated with two measures of narration. One was simple length in words of the three longest narratives told to a friendly stranger, and the other was a composite formed from specific scored narrative variables. Both narrative measures were significantly correlated with attachment security, even after partialling out the effects of gender, age, and receptive vocabulary. These results suggest that securely-attached children have internalized the inclination to disclose themselves by means of relating narratives of some length and have begun to generalize this to adults outside their family.

Keywords: attachment; elaboration; emotional development; language development; narrative; preschool

## The relationship of attachment security to narrative structure

A key means of getting to know someone is by telling them about personal experiences. Even as children, some individuals engage others readily by such personal narration, while others seldom do so, remaining aloof in conversation. The present study investigates whether such differences may be traced to the security of children's attachment to their mothers, usually at one and the same time their primary attachment figures and the individuals who most frequently engage them in personal narrative. If a child's style of narration to a stranger about mundane, not necessarily familial, events were to relate to security of maternal attachment, this would suggest that personal narration is one vehicle in which one can observe the internal working model of relationships employed by a child in the process of negotiating a new relationship; children might well anticipate responses to narration from unfamiliar audiences that resemble those they have received in the past from their mothers.

Furthermore, if narration relates to attachment security, researchers interested in child narration may need to take children's attachment security into account in future assessments of child narration, assessments that have often been used for very different purposes, including child eyewitness testimony (see Ceci & Bruck, 1993, for review). As Ceci and Bruck (1993) note, children's ability to testify regarding abuse hinges on many things (e.g., children's age, length of time since abuse, history of being asked suggestive questions). In fact, recently, some researchers (e.g., Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997) have suggested that this ability may well reflect the children's security of attachment to their mother, a possibility with many complicated implications for children's eyewitness testimony. (For a recent review discussing the role of attachment on children's eyewitness memory, see Alexander, Quas, & Goodman, 2002.)

From the first, attachment theorists have drawn our attention to the link between attachment and communication. In the first year of life, infants' vocalizations often consist of crying episodes, and Bell and Ainsworth (1972) established that mothers who were quickly and frequently responsive to their infants had infants who cried less frequently and for less duration several months later. Bowlby (1969, p. 123) noted that "the language of feeling is an indispensable vehicle for talking about ways in which a situation is appraised and about behavioural systems in a state of activation." In this paper we will focus considerable attention on the "language of feeling" expressed in narrative, something narrative researchers term *evaluation*.

Main, Kaplan, and Cassidy (1985) published research

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linking security of attachment to discourse patterns during reunions. Parents of securely-attached children tended to be fluent and their conversations with children were balanced and wide-ranging in focus. Parents of insecure children were restricted in discourse, with frequent pauses, topics restricted to impersonal subjects and/or inanimate objects, limited topic elaboration, and frequent rhetorical questions. Other parents of insecure children displayed a dysfluent style of discourse, with disorganized topics, much stumbling and numerous false starts. Similar results have been found for adult discourse to unfamiliar interviewers. For example, in the Adult Attachment Interview procedure (see Hesse, 1999, for review), parents of children previously classified as securely attached produce coherent and collaborative narration, regardless of whether experiences discussed (i.e., relationships to parents during childhood) were favorable or unfavorable. Such speakers elaborate experiences, but not in an excessive manner, and are labeled *secure/autonomous*. Other adult interviews are classified as *dismissing* when adults minimize the discussion of attachment-related experiences and/or tersely praise parents they barely describe. Often dismissive adults go on to provide narration at odds with their vague, glowing reports. Dismissive adults have children usually classified as avoidant. A third type of adult is called *preoccupied* and displays unfocussed, digressive memories, often full of lengthy, angry, unresolved discussions of childhood interactions with parents. Infants of such adults tend to be judged resistant/ambivalent.

In general, attachment research has increasingly moved from behavioral to representational assessment (Oppenheim & Waters, 1995). Researchers have explored a variety of relationships between attachment security and discourse. In particular, Bretherton and her colleagues (Bretherton & Munholland, 1999) locate explorations of the relationship of attachment and communication within Bowlby's general conception of the internal working model of attachment, which reflects interaction patterns between an attached individual and his or her attachment figure(s). In reviewing and commenting upon much recent attachment theory research, Main (1999, pp. 869–870) calls attention to a form of therapy in which, at least for the first year, therapists establish a relationship with a patient but do not analyze or discuss past interactions and traumatic experiences; "without discussing their attachment history (i.e., utilizing explicit memories and accompanying narratives) across the course of therapy, *patients become able to discuss that history coherently and collaboratively as a simple result of learning new (implicit) procedures for interactions in a different context*" [emphasis hers]. This finding provides additional rationale for examining child discourse to relative strangers about nonfamilial events and relating that discourse to attachment security, as we undertake to do in the present project.

A well-studied type of discourse produced by children is narrative discourse, which develops between the ages of 27 months and six years, and continues in subtler ways to be refined thereafter (e.g., Peterson & McCabe, 1983). In fact, a number of researchers have developed ways of determining a child's security of attachment by means of getting the child to produce targeted narratives about attachment-relevant themes (for reviews, see Bretherton & Munholland, 1999; Crowell, Fraley, & Shaver, 1999; Gloger-Tippelt, Gomille, Koenig, & Vetter, 2002; Grossmann, Grossmann, & Zinnermann, 1999; Solomon & George, 1999). Bretherton and colleagues devised an Attachment Story Completion Task (Bretherton, Ridgeway, & Cassidy, 1990) to assess preschool-aged children. Other approaches use picture response procedures or doll play (see Solomon & George, 1999, for review). At six, children asked to complete a story in doll play revealed significant continuity of security/insecurity from infancy, and stories predicted relationships with mothers' attachment patterns, which were assessed using the Adult Attachment Interview (Gloger-Tippelt et al., 2002).

Waters, Rodrigues, and Ridgeway (1998) reanalyzed data collected by Bretherton, Ridgeway, and Cassidy (1990) that consisted of a story completion task that can be used on children as young as 37 months. Waters and colleagues were interested in the extent to which children aged between 37 and 54 months produced story completions that included key components of what those authors called a "secure base script," wherein a child ventured away from a caregiver, maintained contact or returned if necessary, faced some difficulty or threat, approached the caregiver or vice versa, the difficulty was dealt with, and the caregiver enabled the child to return to exploration. As predicted, children with higher security scores also produced stories that conformed to such a script, and were longer and more detailed (Waters et al., 1998).

Although the aforementioned work dealt with fictional narratives, when parents and children exchange narrative discourse on a daily basis, that discourse is primarily factual (Preece, 1987). In the course of such conversations between parents and children, children develop the ability to tell a narrative between the ages of approximately 27 months and six years (Eisenberg, 1985; McCabe & Peterson, 1991; Peterson & McCabe, 1983). Parents differ considerably in their style of conversing with children about past events, adopting what has been variously termed "highly elaborative" or "topic extending" approaches or, conversely, "low elaborative" or "topic-switching approaches" (Fivush & Fromhoff, 1988; Hudson, 1993; McCabe & Peterson, 1991; Reese, & Fivush, 1993). Parents who are responsive to their children's early efforts to talk about the past – parents who elaborate or extend the topic of narration – have children who subsequently tell lengthier, better-formed narratives (McCabe & Peterson, 1991; Reese, Haden, & Fivush, 1993). Thus, parental style of talking with their children – their scaffolding of children's narration – predicts children's expertise.

In the present project, we will focus on evaluation and orientation – two components of narration that differentiate a narrative that emotionally engages a listener from a bare recounting of a factual sequence of events (see Newcombe & Reese, 2004, for similar rationale). Parental impact on child narration can be quite specific (Peterson & McCabe, 1992, 1994, 1996; see McCabe, 1997, and Peterson & McCabe, 2004, for reviews); that is, parents' talk about orientation, plot, causality, and reported speech predicts that type of talk from their children. In particular, much attention has been paid to parental (and sometimes older sibling) talk about past feelings and how that predicts child talk of feelings later on (Haden, Haine, & Fivush, 1997; Kuebli, Butler, & Fivush, 1995). Family members tend to talk more and differently about feelings to girls than they do to boys, and this predicts gender differences in production (Dunn, Bretherton, & Munn, 1987; Fivush, 1993a, 1993b; Fivush & Kuebli, 1997; Haden et al., 1997). The impact of parental talk about feelings on child talk about feelings extends beyond narrative conversations (Dunn, Bretherton, & Munn, 1987). Parental scaffolding of emotion communication, in turn, contributes to the coherence of children performing the Separation Anxiety Test (or SAT;

Leibowitz, Ramos-Marcuse, & Arsenio, 2002). The SAT is a set of six photographs depicting attachment-related scenes ranging from mild to stressful; children are asked to describe feelings and future actions of a depicted child – a task which bears a strong resemblance to narration.

Such research points to the complex interrelationships to be found in investigating the origins of personal narrative, interrelationships summarized by Reese (2002a, 2002b). Between the ages of 2 and 3½, maternal reminiscing style mediated the contribution of self-recognition to children's later shared verbal memory. Language skill of the child also moderated the contribution of self-recognition to shared verbal memory (Reese, 2002, a, 2002b), and attachment security and a child's interest in reminiscing also contributed to verbal memory in the child. Even the complexity described by Reese will probably be further complicated by future research and is likely to extend beyond personal narrative per se. For example, children with higher language scores upon entering kindergarten, relative to their peers, are more likely to be securely attached (Fish & Pinkerman, 2003), a finding that supports and extends that of Meins (1997), who found that children judged to be securely attached at twelve months had higher language scores seven months later.

In summary, others (Bretherton & Munholland, 1999; Crowell, Fraley, & Shaver, 1999; Gloger-Tippelt, Gomille, Koenig, & Vetter, 2002; Grossmann, Grossmann, & Zinnermann, 1999; Solomon & George, 1999) have looked at narrative as a means of discerning attachment issues, while in the present research we are looking at attachment as a means of enriching our understanding narration. A related contrast is that those past researchers have focused on *content* of narration while we focus on *form* of narration; we will examine several narratives of each child on different themes for that reason. Form of narration has often been neglected in research on attachment and narration, though some have begun to address this fruitfully (below).

## *Attachment and personal narrative*

Because communication in general and emotional affect in particular have always been seen as inextricably linked to attachment (Bowlby, 1969; Magai, 1999), findings regarding parental discussion of feeling and children's narrative ability led a number of researchers quite logically to explore the relationship of attachment security between mother and child and narrative exchange between the same. Farrar, Fasig, and Welch-Ross (1997) investigated the concurrent relationship between attachment security (as measured by the Attachment Q-Sort [Waters & Deane, 1985] completed by mothers) and emotion expressed in the context of talk about a family outing, a visit to the doctor, a special occasion, and a mother–child separation. Mothers and insecurely-attached daughters (aged 3;5–4;5 years) engaged in relatively more negative than positive emotion talk compared to mothers and securely-attached daughters, and this was true despite the fact that such insecure dyads elaborated only following initiations of positive emotions and never after initiations of negative emotions. Results for mother–son dyads were inconsistent in this study.

Etzion-Carasso and Oppenheim (2000) found that securely-attached children have more open and elaborative reunion conversations with parents. Laible and Thompson (2000) investigated four-year-olds' security and narrative communication. Mothers completed the Attachment Q-Sort. Mothers and their children were then asked to talk about the child's past behavior (once with misbehavior, once with good behavior). Attachment security was significantly correlated with both maternal and child references to feelings and evaluations in talk about the child's past behavior.

Fivush and Vasudeva (2002) also had mothers of 4½-year-olds complete the Attachment Q-Sort and a reminiscing task. Mothers who were more elaborative during reminiscing also reported more secure attachment in their child. Those variables were not related to verbal expression of emotion during those conversations, however.

The most thorough investigation of the relationship between attachment security and narration is the ongoing work of Reese (Farrant & Reese, in press; Newcombe & Reese, 2004). Mothers assessed attachment security of their children using the Q-Sort when the children were 19 months old, and discussed shared past events when the children were 19, 25, 32, 40, and 51 months old. Mothers were more elaborative in their reminiscing with securely-attached than with insecurely-attached children by the time children were 2½ and 3½ years old, after controlling for general expressive language ability. Securely-attached children reported more information than did insecurely-attached children. Secure dyads displayed greater interplay over time (Farrant & Reese, in press). Securely-attached children and their mothers use more evaluations (but not orientations) over time, have a more consistent narrative style, and more bidirectional influences compared to insecurely-attached dyads (Newcombe & Reese, 2004).

In sum, in all these prior studies of attachment and personal narratives, the narrative variables of interest were investigated in the context of conversations between children and their mothers (Etzion-Carasso & Oppenheim, 2000; Farrant & Reese, in press; Farrar, Fasig, & Welch-Ross, 1997; Fivush & Vasudeva, 2002; Laible & Thompson, 2000). Security of attachment was found to relate to various variables in mother–child reminiscing in every study. These prior studies primarily used some version of the parent-reported Attachment Q-Sort, although some treated results from that sort as a continuous variable (Fivush & Vasudeva, 2002; Laible & Thompson, 2000), while others converted them into a dichotomous one (Farrant & Reese, in press; Farrar et al., 1997; Newcombe & Reese, 2004). Some researchers found gender differences in effects (Farrar et al., 1997; Fivush & Vasudeva, 2002), while others did not (Farrant & Reese, in press; Laible & Thompson, 2000; Newcombe & Reese, 2004). The fact that mothers both elicited narratives from their children and completed the Q-Sort in all those studies leaves open the possibility that children's narrative performances were specific to the mother–child relationship and were shaped by the differing conversational cues of their mothers, rather than being relatively internalized and generalizable to narration to others.

No one has yet investigated the impact of attachment security and children's narration to relative strangers, despite the fact that substantial research documents one legacy of attachment security to be children's approach to others, with secure children being more likely to make friends and to make more friends later on in life, perhaps even into adulthood (see Berlin & Cassidy, 1999, for review). In her review of attachment research, Main (1999, p. 861) points out that "Attachment is a lifespan phenomenon. However, we have yet to understand the formation of new attachments in adulthood; in addition the prediction of adult from infant attachment is

readily misunderstood." We argue that habits of personal narration begun in early childhood persist over time (McCabe & Peterson, 1991) and may well play a role in the formation of attachments later on in life.

Thus the present study seeks to address the relationship between attachment security between a child and parent, assessed using the Q-Sort, and various aspects of children's narration with a researcher. This relationship between security and narration will be investigated after first partialling out the effects of certain extraneous variables that have been shown to occasionally correlate with aspects of narration. Specifically, narration has been found to correlate with gender (Farrar et al., 1997; Fivush & Vasudeva, 2002), receptive vocabulary (Tabors, Roach, & Snow, 2001), and age (e.g., Peterson & McCabe, 1983). In sum, based on past research we argue that the more secure the attachment between mother and child, the more coherent (Etzion-Carasso & Oppenheim, 2000; see Hesse, 1999, for review) and elaborate (Farrant & Reese, in press; Fivush & Vasudeva, 2002) their narratives will be. We will also investigate the finding (Farrar, Fasig, & Welch-Ross, 1997; Laible & Thompson, 2000; Newcombe & Reese, 2004) that security correlates with expression of emotions, as encoded in evaluative commentary. However, we anticipate that children may well be less likely to share such feelings with a stranger (the present project) than they were with their mother (prior research). In fact secure children may well proffer less personal elaboration to a stranger. In any case, we hypothesize that children's narrative elaboration to a relative stranger will positively correlate with the security of their attachment to their mother.

## Method

### *Participants*

Thirty-two 4-year-old children (12 girls, 20 boys) were recruited, as part of a larger study, from a local children's hospital in Canada when they came in for treatment for a minor injury. The mean age of these children was 55.44 months (SD = .49). The parents of these children agreed to participate and let their child participate in this project. The hospital is the only medical facility in the region that treats children, so all children within a radius of more than 100 miles go to this hospital. Furthermore, since health care is paid for by the government in Canada, the families of the children spanned socio-economic strata. Participants were almost all Caucasian, which accurately reflects the population – according to Statistics Canada, 97% of the region's population is Caucasian of European descent.

### *Materials*

The Peabody Picture Vocabulary Test (PPVT-Revised, form L, Dunn & Dunn, 1997) was administered using the published guidelines of the instrument. This test is commonly used to index children's overall language ability, in particular regarding receptive vocabulary. The PPVT has a median test–retest reliability of .92 and high validity, as exemplified by its correlation with other standardized measures such as the Wechsler Intelligence Scale for Children.

Mothers were asked to complete the revised 90-item Q-Sort Assessment of Attachment (Waters, 1987/1995, in Waters, Vaughn, Posada, & Kondo-Ikemura, 1995) to determine the attachment status of their child. The Q-sort is a widely-used means of assessing attachment, the one some most highly recommend for use with children aged four (Thompson, 1998). The reliability and validity of the Observer Attachment Q Sort (AQS) has been assessed in a series of meta-analyses on 139 studies with over 13,000 children. The observer AQSA security sort showed convergent validity with the Ainsworth Strange Situation Procedure and excellent predictive validity with sensitivity measures (Van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). Maternal-reported Q sorts have been found to be reliably correlated to observers' sorts of the same children when mothers were well trained and when observers felt confident that they had experienced a representative sample of the child's behavior (Teti & McGourty, 1996).

While some might be concerned that mothers would be biased in the sense that they would report their child as behaving in a manner typical of a securely-attached child, such was not the case; scores on this variable ranged from .68 to .00, with 1.00 representing the highest possible security and –1.00 the lowest.

Because recent research has indicated that even variation in infant attachment patterns is largely continuous, not categorical (Fraley & Spieker, 2003), we chose to treat these scores as a continuous variable, unlike other researchers (e.g., Newcombe & Reese, 2004). A computer program was used to compare the AQS for each child to a criterion sort of a hypothetical secure child. Children received a score reflecting how securely attached they were in comparison to the criterion sort (Newcombe & Reese, 2004).

### *Procedure*

One of three female researchers interviewed children in their home to elicit narratives using the procedure developed by Peterson and McCabe (1983). In this procedure, the interviewer first made sure children were comfortable, then introduced a short narrative about her own experience, concluding with, "Did anything like that ever happen to you?". If the child responded with a narrative, the interviewer confined further remarks to echoing the child or saying relatively neutral things like "Umm hmm," "Yeah," or "anything more?". When a child indicated that there was nothing else to say about a topic or introduced a different event that they wanted to talk about, the interviewer moved on. She had a "conversational map" that suggested a number of possible topics to introduce; as well, she asked about other topics that arose from the current play situation or child comments. The conversational map asked about birthday parties, trips, camping, injuries, bee-stings, visiting the doctor, sibling interactions such as arguments, pet adventures, car accidents, being left behind by parents, getting lost, and being scared. For thirty years the authors have trained interviewers to use standard responses such as echoing the child or asking relatively neutral follow-up questions (e.g., "Anything else?") to minimize the possibility of interviewer effects.

Prior to the narrative elicitation task, the experimenter administered the PPVT. In a visit a week earlier, mothers had been given the Q-Sort attachment cards, with instructions to look at them daily and sort them into three preliminary categories (most like their child, least like their child, or intermediate). In the visit in which children were interviewed,

mothers were asked to complete the rest of the Q-Sort sorting. To this end, a second researcher worked with mothers in a different room while the child was being interviewed. That is, the mothers did not hear their children's narration.

## *Scoring: Narrative Structural Coding*

Each interview was audio-recorded and later transcribed. Narratives were broken down into clauses (both independent and dependent). Children produced a total of 343 narratives consisting of at least two sequenced event clauses (Labov & Waletsky, 1967). The mean number of narratives produced was 10.71 (s.d. = 4.32, range = 4–22). The three longest narratives produced by each child were analyzed. We chose to combine narratives because we were focused on form rather than content per se; several samples gives a better sense of a child's typical form of narrating. We also chose to examine narration uncorrected for length because sometimes "more is more" (see Hoff-Ginsberg, 1992, for arguments related to consideration of raw frequencies versus proportions in linguistic productions; Waters et al., 1998 also found that attachment security correlated with length, for example); that is, longer narration from four-year-old children is an excellent measure of narrative complexity (Peterson & McCabe, 1983).[1] Such children are too young to provide the kind of resolution in narrative seen in six-year-olds' productions, for example (Peterson & McCabe, 1983).

The scoring of the narratives was done from the transcripts. The complexity of narratives has been measured in a number of ways, and here we adapted the extensive coding system of narrative properties described in Peterson and Roberts (2003). These narrative properties focus around narrative length, informativeness, and elaboration. Each of these measures has been used frequently in prior research (e.g., Buckner & Fivush, 2000; Fivush, 1991; Fivush, Hamond, Harsch, Singer, & Wolf, 1991; Flannagan, Baker-Ward, & Graham, 1995; Leichtman, Pillemer, Wang, Koreishi, & Han, 2000; Peterson, Jesso, & McCabe, 1999; Peterson & McCabe, 1983, 2004; Peterson & Roberts, 2003). Improvements in these measures have been shown to be associated with increasing age and with greater narrative complexity within age. In addition, elaboration and provision of orientative and evaluative information, as we noted earlier, distinguishes a narrative that engages listeners' sympathies from one that merely recounts a factual sequence of events. This method of scoring narratives is based on one that was introduced by Labov and Waletsky in 1967, and has been used by numerous researchers ever since (see the special edition of *Journal of Narrative and Life History*, *7*, which is devoted to reviews of research using this method of analysis). Specifically, *orientation* is assessed by variables 3, 4, 5, 7, and 10 below, while *evaluation* is assessed by variables 6, 8, 9, 15, and 16. Variables 12, 13, and 14 consist of unique orientation information plus repetitions of that information, which are therefore evaluative (Peterson & McCabe, 1983).

Fifteen percent of the transcripts were independently coded by two coders. Cohen's kappa was used to estimate inter-coder reliability. For Unique Units of Information, kappa was .90; for elaboration, kappa was .96. Both represent almost perfect agreement (Landis & Koch, 1977).

[1] The two measures of length are omitted because they correlated with all the other variables.

*Length.* As we have noted, an important property of narratives is how long they are, i.e., whether they are lengthy or terse and minimal. Length was measured by:

1 Word count: Total number of words in the narrative;
2 Clause count: A clause was considered to be a subject-predicate proposition.

*New (unique) units of information.* This measures how informative the narrative is, that is, what information the child provides that is new and different. There are a number of subcategories of unique units of information:

3 Person ("*Mom* took me to the hospital");
4 Object ("I threw the *ball*");
5 Activity ("We were *playing*");
6 Attributes ("The box was *heavy*");
7 Location ("She went to the *mall*");
8 Emotion ("I was *happy* to see her");
9 Cognition ("I *forgot* to turn it off");
10 Time ("His party was *yesterday*");
11 Total units of unique information: The total number of units scored from all of the above elements in this category.

*Elaboration.* Children often do more than provide the bare bones of what happened through new information; they often elaborate, repeat information for emphasis, and so on. The above scoring of "new information" was amplified by counting *each* occurrence of some of the information categories scored above (descriptors, location, time, emotion and cognition), as well as adding additional categories for linking terms and connectives. For example, compare "it was a big spider" versus "it was a big, big, big spider." For scoring of new information, the child's description of the size of the spider would be scored once; in contrast, when scoring elaboration, all three instances of "big" would be counted. By means of repetition, the child is effectively emphasizing size; such repetition provides evaluative elaboration. Note that repetitions of the same word in reference to different objects (e.g., "a black dog and a black cat") are not considered to be evaluative; each is a unique unit of information.

## *Unique information plus repetitions*

12 Descriptors: adjectives and adverbs plus repetitions of those (e.g., "She likes *little* girls a lot. She likes everyone that is *little*, even babies" = 2 descriptor elaborations);
13 Location: mention of place plus repetitions of that (e.g., "I got a new blue dress. Nan brought it home from *Ottawa*. She was in *Ottawa* last week" = 2 location elaborations);
14 Time: specific times such as *yesterday*, *once*, *last week* plus repetitions of those ("Last *summer* we visited my cousin. She has a horse and we went down to the house where her horse was. Somebody borrowed it for the winter but she gets it back when it is *summer*. It was *summer* then" = 3 time elaborations);
15 Emotion: evaluative references to emotional states plus repetitions of those (e.g., "We saw a peacock with long feathers. We were supposed to get a feather but we didn't. She didn't have the key. *We were so angry* . . . so she couldn't open the cage so we couldn't get a feather. *We were so angry*." = 2 emotion elaborations);
16 Cognition: evaluative references to mental states plus repetitions of those (e.g., "I was so scared of the fox *I*

*thought* was red but it was white. I *thought* it would be red but it was white." = 2 cognition elaborations).

### *Markers of coherence*

17 Temporal linking terms: terms that temporally link things together (e.g., *then*, *first*, *next*, *later*, *before*, *after*);
18 Causal/conditional connectives: words that link two causally connected events (e.g., *because*, *so*, *if*, *while*, *until*; see Fivush, 1991);
19 Other connectives: any word that joins two clauses together (e.g., *and*, *but*, *or*) but does not imply cause or condition. This excludes temporal linking terms and causal connectives.

### *Scoring: Narrative content coding*

*Coding for attachment themes.* Because some of the probes (i.e., being left behind by parents, getting lost) seemed to pull for content directly related to attachment and because attachment theorists have disproportionately focused on the content of narration, we coded for themes in the children's narratives that related to attachment. Specifically, we examined the narratives to see whether their content matched any of the attachment situations to be found in prior work. For example, Slough and Greenberg used pictures to elicit responses from children that depicted the following: 1) parents going out for the evening, leaving child at home; 2) parents going away for the weekend, leaving child with aunt and uncle; 3) child's first day at school; moment of parting from mother; 4) parents going away for two weeks; prior to their departure they give child a present; 5) park scene in which parents tell a child to run off and play alone for awhile because they want some time alone together to talk, 6) mother tucking child in bed and leaving room.

*Coding for content.* Again, because so much prior research in attachment theory and narration has focused on content of narratives, we coded for the types of incidents children typically relate: injury, property damage, bike wreck, car wreck, gifts, play events, pet antics, parties, vacations/trips, fighting, miscellaneous.

*Coding for emotional content.* Narratives were scored according to whether the overall affect of the story was neutral, positive, negative, or bittersweet, with the latter referring to stories that contained a mixture of positive and negative affect (McCabe, Capron, & Peterson, 1991). Two raters independently scored 15% of the data in common and the kappa estimating their reliability was .83, quite high.

## Results

For each participant, the three longest narratives were selected because we were interested in looking at the upper bounds of a child's narrative performance and length is a good indicator of complexity (Peterson & McCabe, 1983). Measures of these three narratives were summed, and the mean of each summary measure is presented in Table 1, along with the mode and range of each measure.

Content of the narratives was assessed three ways. First of all, the scoring of attachment themes in children's productions to a friendly stranger revealed virtually no mention of attachment-related issues. Only one child produced a narrative that mentioned a missing parent, and that child talked about all the fun things the children did with their mother while their father was away for four weeks. Note that this lack of variation precluded estimating kappa for that scoring. The second assessment of content referred to what subjects were relating, and the following are the results: play events (25), vacations/trips (12), injury (11), pet antics (11), gifts (7), fighting (4), parties (3), bike wrecks (2), car wreck (1) property damage (1), miscellaneous (19; included moving to a new house, watching father move a bee's nest, buying a new pool, getting ready for bed). Assessment of the overall emotional content of the narratives revealed the following emotional valence: Negative = 25.0%, Positive = 19.7%, Neutral = 41.6%, Pos/Neg = 13.5%.

Children scored about average on the PPVT-R (Mean = 106.39, SD = 17.73). The mean score on the Q-Sort was .32 (SD = .18), which is somewhat lower than the mean AQS score of .38–.40 found in other studies (see Newcombe & Reese, 2004, for review) and suggests that these mothers were not particularly trying to present their children's attachment in a favorable rather than truthful light. Gender was not significantly related to the attachment security score, as was also the case in Newcombe and Reese (2004), or to PPVT-R. Attachment security scores were not related to PPVT-R standard scores ($r(32) = .17$, n.s.), although they were in Newcombe and Reese (2004).

Of most importance was the fact that although neither

**Table 1**
*Mean number of occurrences (and standard deviations), mode and range of each narrative variable measured for the three longest narratives combined*

| *Variable* | *Mean (SD) Three Longest (n = 33)* | *Mode* | *Range* |
|---|---|---|---|
| Length: | | | |
| Narrative length (words) | 232.25 (133.58) | 179 | 86–749 |
| Clauses | 42.88 (21.52) | 30 | 16–119 |
| Units of unique information: | | | |
| Person[a] | 5.53 (3.23) | 6 | 0–14 |
| Object[a] | 12.25 (6.58) | 7 | 3–21 |
| Activity[a] | 18.13 (8.74) | 12 | 4–43 |
| Attributes[a] | 16.50 (9.69) | 17 | 4–50 |
| Location[a] | 2.97 (2.38) | 2 | 0–10 |
| Emotion[a] | .59 (.84) | 0 | 0–3 |
| Cognition[a] | .84 (.88) | 0 | 0–2 |
| Time[a] | 1.69 (1.55) | 2 | 0–6 |
| Totals units of unique information | 58.78 (26.21) | | |
| Elaboration: | | | |
| Descriptors | 21.09 (13.15) | 20 | 5–67 |
| Time | 2.00 (1.97) | 0 | 0–7 |
| Location | 3.50 (3.28) | 2 | 0–14 |
| Emotion | .72 (1.11) | 0 | 0–4 |
| Cognition | .91 (1.06) | 0 | 0–4 |
| Temporal linking terms | 6.56 (5.73) | 1 | 1–21 |
| Causal connectives | 1.38 (1.48) | 0 | 0–6 |
| Other connectives | 16.84 (13.75) | 12 | 4–73 |

[a] For this category, instance of a word was counted only once.

gender nor standard scores on the PPVT-R were related to any narrative measure, 6 out of 172 of the specific narrative variables proved to be significantly correlated with attachment security (see Table 2): connectives, descriptors, mentions of objects, activities, attributes, and total units of unique information. Although these variables were scored independently of each other, Table 3 reveals that all six specific narrative variables were highly and significantly intercorrelated.

Although our modest sample size precludes strong argument that non-significant results should be accepted, small sample size is never an argument to be used to dismiss significant results. In fact, such an outcome is indicative of a strong effect since it was detected in a modest sample. Moreover, we include nonsignificant results as well as significant ones in order to guide others about where to concentrate their focus in future similar studies and because they illuminate an interesting aspect of the fact that we used strangers rather than parents as interviewers.

We assessed the relationship between attachment security score and general narrative variables in two ways. As was to be expected, narrative length (in words and in clauses) was correlated with virtually all other specific narrative attributes, so this variable was considered separately from the others. Thus, the first analysis was to determine the correlation between security and the length of narratives in words. We chose this measure over the measure of length in clauses because we were interested in registering the difference between a straightforward clause (e.g., "We fished.") and an elaborated one (e.g., "Dad and I fished all day long for sharks."), which word count would accomplish.[2] In addition, both research on child language (e.g., Hoff-Ginsberg, 1992) and research on the relationship between narrative and attachment (e.g., Waters, et al., 1998) argue that raw frequencies of child language variables are most relevant. We computed the correlation between length and security by first partialling out the effects of age, gender, and receptive vocabulary (PPVT) because those variables were not our focus and because we had a relatively modest number of cases, precluding use of numerous independent variables.

We then formed a composite dependent variable comprised of those six specific narrative variables that significantly correlated with attachment security: connectives, descriptors, mentions of objects, activities, and attributes, and total units of unique information. Because this was an exploratory study, we only included those variables that seemed promising. The compositing step was necessary to reduce the overall number of statistical tests we would run. The composite was conceptually sound in that preliminary analysis pointed to these variables as the ones most likely to reflect attachment security even after nuisance variables were partialled out. Conceptually, we would argue that these six variables are the ones least necessary to providing a bare-bones narrative. Like a newspaper reporter, any child telling a personal narrative must provide information about who (persons), what (specific event sequence – not scored because it is basic narration), where (location, basic and elaborated), when (time, basic and elaborated), and why (causal and some temporal connectives). As was reviewed in the introduction, avoidant/resistant individuals' discourse is riddled with negative emotion, so undifferentiated emotion codes would not distinguish secure from insecure individuals. However, description of objects, ongoing activities, attributes, total units of unique information, adjectival and adverbial descriptors, and noncausal connectives go well beyond basic narration-they are options only a child who was accustomed to having a responsive, receptive audience would be in the habit of providing.

**Table 2**
*Correlations between narrative elements, attachment and PPVT score for the three longest narratives (n = 31)*

| *Factor* | *Attachment* | *ST(PPVT)* | |
|---|---|---|---|
| 1. Narrative Length | | .48** | .08 |
| 2. Clauses | .47** | .07 | |
| 3. Person[a] | .20 | –.03 | |
| 4. Object[a] | .38* | .16 | |
| 5. Activity[a] | .49** | –.05 | |
| 6. Attributes[a] | .41* | .24 | |
| 7. Location[a] | .19 | .01 | |
| 8. Emotion[a] | –.17 | .22 | |
| 9. Cognition[a] | .27 | –.05 | |
| 10. Time[a] | –.04 | –.04 | |
| 11. Total Units Unique | | .45* | –.11 |
| 12. Descriptors | .37* | –.23 | |
| 13. Time .09 | .13 | | |
| 14. Location | .27 | .02 | |
| 15. Emotion | –.18 | .34 | |
| 16. Cognition | .33 | –.04 | |
| 17. Temporal Terms | | .28 | –.12 |
| 18. Causal Connectives | | .14 | –.16 |
| 19. Other Connectives | | .49** | .12 |

**$p < .01$; *$p < .05$. [a] For this category, instance of a word was counted only once.

The next step involved standardizing all the variables involved in the composite so that they would all be on the same scale, which we accomplished by converting all scores to z-scores. Standardizing the variables allows them to be considered together without one variable dominating the rest simply because it is measured on a different scale. Finally, all variables were summed, and those scores were correlated with attachment security, after partialling out effects due to age, gender, and receptive vocabulary score.

Both analyses proved to be significant. The correlation between attachment security and the overall length of narrative in words, partialling out the effects of gender, age in months, and PPVT, was significant ($r(32) = .56$, $p = .012$). The correlation between attachment security and the composite variable, also partialling out gender, age, and PPVT, was also significant ($r(32) = .57$, $p < .01$).

## Discussion

As predicted, the attachment security of a child is significantly related both to the overall length in words of narratives told to a relative stranger and to the composite narrative variable derived from those narratives, even after we partialled out the effects of age, gender, and receptive vocabulary. Narratives to

[2] In response to one reviewer's request, however, we did do exploratory analyses correcting variables for length. Obviously the correlation of length with attachment cannot be corrected for length. However, we ran preliminary correlations of attachment with the 6 composited variables corrected for length in words, with no significant results due to highly-curtailed variation in corrected variables (e.g., range of raw frequencies of activities mentioned was 4–43, while the range for activities divided by length in words = .04 –.12).

**Table 3**
*Correlations between narrative variables*

| *Factor* | *Clauses* | *Connectives* | *Descriptors* | *Object* | *Activity* | *Attributes* | *Total Units Unique* |
|---|---|---|---|---|---|---|---|
| Length in Words | .98** | .93** | .83** | .85** | .89** | .83** | .97** |
| Clauses | | .90** | .80** | .83** | .84** | .80** | .94** |
| Connectives | | | .76** | .76** | .83** | .75** | .88** |
| Descriptors | | | | .75** | .66** | .98** | .89** |
| Object[a] | | | | | .74** | .74** | .87** |
| Activity[a] | | | | | | .65** | .89** |
| Attributes[a] | | | | | | | .89** |

**$p < .01$.
[a] For this category, instance of a word was counted only once.

a friendly researcher reflected children's attachment security, as assessed by their mothers. Because telling an informative, elaborate narrative is an important means of getting to know others, securely attached children's propensity for doing so will serve them well in a variety of other relationships. Securely-attached children go well beyond providing the basic who, what, where, when, and why of narrative to give the kind of specific descriptive detail that engages a listener's interest. Based on past research (e.g., McCabe & Peterson, 1991), such children's parents have listened to their narratives appreciatively for several years and asked them many questions. What this study demonstrates is that the children expect strangers to do the same.

Our results complement those of others who also found that the security of a child's attachment was significantly related to their narration to their mothers (Farrant & Reese, in press; Farrar, Fasig, & Welch-Ross, 1997; Fivush & Vasudeva, 2002; Laible & Thompson, 2000, Newcombe & Reese, 2004), but reveal an early internalization of that process and generalization of it to conversation with other adults.

However, telling narratives to strangers versus mothers did have an effect on the aspect of narration that correlated with attachment security. Like the other researchers who correlated security with narrative (Etzion-Carasso & Oppenheim, 2000; Farrant & Reese, in press; Farrar, Fasig, & Welch-Ross, 1997; Fivush & Vasudeva, 2002; Laible & Thompson, 2000; Waters, Rodrigues, & Ridgeway, 1998), Newcombe and Reese (2004) found that evaluations (e.g., "I was *sad*", "*very* silly", "*special* friend", "*nearly* crawled") correlated with maternal-reported security, while we found only one such link (i.e., descriptors is a category of orientation plus evaluative repetitions of that information when they occurred). We, on the other hand, found that descriptions (of objects, activities, attributes, adjectives and adverbs) correlated with maternal-reported security, while Newcombe and Reese (2004) found no such link with orientative information. Evidently children are somewhat selective about sharing feelings; they are more likely to share these with attachment figures, especially mothers to whom they are securely attached (Newcombe & Reese, 2004). To strangers they proffer less subjective, more descriptive information in initial conversations.

The fact that narrative length correlated with security is probably attributable to the fact that our sample consisted of four-year-olds. In adolescents (Salzman, 1996) and adults (Hesse, 1999), excessively lengthy narration is a hallmark of insecure/resistant or preoccupied attachment. Four-year-olds are just starting to tell narratives that comprise more than two events, even though at that age key events are often omitted and/or told in a haphazard sequence (Peterson & McCabe, 1983). Only when children are six years old do they begin to tell classically formed narratives that involve chronological sequencing and resolve events. At that time, coherence and form of narrative would undoubtedly be more reflective of attachment security than length per se.

Examples of narration are helpful in understanding our findings. Consider a narrative from one of our most securely attached four-year-olds:

Mattie: I went camp. I had to vacation, and I camp far, far away and, and it was in the woods.

Interviewer: Yeah.

Mattie: I camped with my aunt Jo and my cousin Mike.

I: Yeah.

M: And Susie and Jake.

I: Yeah.

M: And we had a tent and a camper, and I get in the camper with my cousin Susie.

I: Wow.

M: And my mom came, and she watched us, and we went in the tent for a while.

I: You went in the tent for a little while.

M: Yeah. I didn't know which color it was. There was a little pond down the hill, and there was a mountain down there. We had to climb down the mountain.

I: Yeah.

M: And in the woods we saw down there. [some talk about present]

I: Yeah. Tell me about when you walked up the mountain.

M: The mountain was full of trees. The mountain was full of, full of trees. Full of trees that's cracked.

I: Oh, yeah.

M: And we saw a squirrel.

I: A squirrel.

M: When it went in our path. He climbed in our tree next to us. And our camper place. And we were trying to climb up a tree.

I: Yeah.

M: But I wasn't only my cousins . . . Me and my cousins.

The interviewer has merely to repeat what Mattie says and say "yeah" responsively and Mattie responds by telling her a lengthy tale filled with connectives between sentences, descriptives ("trees that's cracked", "little pond"), information about objects (camper, tent), activities (climbing of cousins, squirrel), attributes, and specific people there. This was an impressive performance for a 4-year-old, one that clearly engaged her listener.

In contrast, narratives from insecurely-attached children seemed to be given only after extensive prompting and, even then, tended to be short, lacked deep reflection on and elaboration about memories, and were filled with negative emotion in many cases, a tendency found in the discourse of parents of infants classified as ambivalent (see Bretherton & Munholland, 1999, for review). For example, consider the following two narratives given after a prompting narrative about a pleasant birthday party:

Helen: Guess what?

Interviewer: What?

Helen: In Christmas I thought my nanny would give me a doll house but she never.

Int: Oh, she never . . .

Helen: No one give me a doll house.

Brett: I never had a birthday before.

Int.: Yeah?

Brett: Never had one.

Other insecurely-attached children tended to resist narrating by saying repeatedly that "I don't know, it was a long time ago" or "I can't remember," a kind of dismissal that has been noted in the discourse of adult parents of infants classified as avoidant (e.g., see Bretherton & Munholland, 1999, for review). Still other insecurely-attached children evaded narration by lapsing into fantasy, often aggressive fantasy, as in the following conversation with a boy:

Interviewer: When I was really young, maybe even around your age, I wanted a bike so bad for my birthday. And I kept asking and asking and asking and asking. And finally my birthday came, and when I got there, I got all these gifts but I didn't get a bike. But then my grandparents came over, and they had my bike. And I was so surprised. Have you ever been surprised like that before?

Carl: No.

Int.: No? You've never been surprised by a nice birthday gift or anything? Did something ever happen that really surprised you? It didn't have to be like a gift, but

Carl: It was you! And you and you and you and you.

Int: You're silly. What about Christmas?

Carl: Christmas?

Int: Yeah did you get anything that surprised you for Christmas? [child tries to change subject for 8 turns]

Carl: I gotta show you something.

Int.: Oh my goodness. Tell us about the time you got that monkey.

Carl: From Christmas.

Int.: For Christmas? Tell us about that.

Carl: I don't know. It was a long time.

Int.: Not that long ago!

Carl: That was a long, long ago.

Int.: You gotta remember something. Oh. You know something? It was your birthday not too long ago. Maybe we could ask about that. Did you get any surprises for your birthday, any surprise gifts!

Carl: I got you from Christmas!

Int.: No, you never . . .

Carl: And I ate you up!

Int.: You can't eat people.

Carl: And I eat you up.

Int: I was in Prince Edward Island over the summer. Have you ever been there before?

Carl: I followed you in the game.

Int: Yeah? Can I tell you something that I did? I went on vacation with my mom and my dad.

Carl: I goes in the water.

Int: Have you ever been on vacation with your mom and your dad?

Carl: I'll throw my dad in the water and my mom in the water and throw my sister in the water, and throw you in the water and throw you in the water!

The interviewer, a seasoned researcher, persevered for approximately ten times as much talk as that transcribed above and continued to meet with similar frustration, with Carl engaging in often violent fantasy (e.g., "shooting the bad guys", "I saw aliens!", "I can fly just like Buzz Lightyear, and I got lasers", "I shoot you!"). Instead of connecting with this adult the way Mattie did, Carl exasperated her. When Carl's narrative was shown to an individual who has developed the Adolescent Attachment Interview (Salzman, 1996), she said that he was likely to have had a disorganized attachment to a hostile, threatening parent (J. Salzman, personal communication, June 9, 2005).

Carl was not the only child to engage in dodging plausible personal narrative in favor of violent fantasy. Another insecurely-attached boy told us that "It never even hurt when I had to get a needle in my foot," and that he "Can't remember" what he did after that. That child told us an unevaluated story about a camp tent burning up from which he abruptly shifted to talking about how "I fighted a grizzly bear . . . That's how I kill, that's how kill a grizzly bear."

What does it mean to have such a pronounced tendency to escape into often violent fantasies in conversations at the young age of four years? Unlike a tendency to elaborate primarily the negative aspects of past experience or the tendency to escape such discussion by "not remembering" – two tendencies noted both in children here and in past research with adults – this tendency to steer clear of discussion of plausible personal

memories by veering off into violent fantasy has not been noted to occur in adults. However, a number of past studies have linked high rates of aggression to a history of avoidance in children (see Greenberg, 1999, for review). Our use of the Q-Sort in our project prevented us from discerning avoidance from other types of insecurity, but this would be a particularly fruitful direction to pursue, especially given the well-established tendency of aggressive children to seek out violent movies, television, and video games – penchants for violent fantasy that have received considerable past attention. Such parent–child pairs might well profit from early intervention.

Therapists argue that improving clients' abilities to narrate intelligibly can lead to an integration of dissociated thoughts and affect (e.g., Renn, 2002), an approach derived from Main et al.'s (1985) finding that it was the *organization* of parents' narratives about their early attachment experiences that predicted their infants' security rather than the content of those reminiscences. Therapy involves both "story-making and story breaking" (Holmes, 1998). Family stories and narrative styles have been classified, just as have individuals', on the Adult Attachment Interview, namely as "coherent" (secure), "incoherent/dismissive" (avoidant), "contradictory" (ambivalent), and "unresolved mourning" (disorganized) (Byng-Hall, 1999), and the therapeutic goal is to achieve greater family narrative coherence.

Intervention with parents designed to improve their ability to elicit narratives from their children has much promise as a means of therapeutic intervention. As was reviewed in the introduction, numerous studies have documented the fact that parental input to narrative conversation with children predicts narrative production (Fivush & Fromhoff, 1988; Hudson, 1993; McCabe & Peterson, 1991; Reese & Fivush, 1993). Although prediction does not imply causality, a recent study does in fact establish that lengthy reminiscing can be said to *cause* narrative development (Peterson, Jesso, & McCabe, 1999). Randomly assigning children to an experimental group in which mothers of at-risk children were instructed to encourage their children's elaboration of personal memories resulted in immediately significant increases in receptive vocabulary and eventually improved narration. This finding has potential implications for improving attachment security along with cognitive abilities.

The studies of the relationship of personal narrative and attachment security reviewed here (Farrant & Reese, in press; Farrar, Fasig, & Welch-Ross, 1997; Fivush & Vasudeva, 2002; Laible & Thompson, 2000, Newcombe & Reese, 2004) have all focused on preschool-aged children primarily from middle-class European American homes narrating with their mothers. This study has examined preschoolers from European Canadian homes – a sample with considerable similarity – but has extended such study by looking at children narrating to a relatively unknown adult. When mothers and children are co-narrating together, the mother has considerable impact on both the content and structure of the child's narrative, and the relationships between the children's contributions and their attachment status that have been found in previous research may at least partly reflect the type of scaffolding and structural help they are getting from their mothers during the time of the conversation itself. In contrast, when talking to a relative stranger who is careful to *not* scaffold or direct the child toward inclusion of particular sorts of structure or content, one may get more of an understanding of children's stand-alone skill, i.e., of their mastery of the skills involved in constructing a good narrative. It seems that children's acquisition of narrative skill is influenced by their attachment relationship with their mother, in that children with a more secure attachment construct longer, more informative, and more elaborate narratives. Such an effect may well be a factor to be reckoned with in child eyewitness testimony, among other arenas. Future research should extend the examination of this issue with older children and children from different economic and ethnic backgrounds, particularly because there are numerous well-documented cultural differences in narration (McCabe, 1996).

Personal narration reflects many different aspects of a person's life, including age (e.g., Peterson & McCabe, 1983), gender (e.g., Ely & McCabe, 1993; Mainness, Champion, & McCabe, 2002), socioeconomic status (e.g., Mainness, Champion, & McCabe, 2002; Peterson, 1994), parental conversational habits (Peterson, Jesso, & McCabe, 1999), and culture (see McCabe, 1996, for review). Personal narration is also affected by such cognitive/linguistic disorders as specific language impairment (Miranda, McCabe, & Bliss, 1998) and Traumatic Brain Injury (Biddle, McCabe, & Bliss, 1996). Although the issue of temperament has been largely unexplored, a child's narration to even a friendly stranger might well be affected by that. In short, when a four-year-old child tells a relatively brief narrative, a listener cannot surmise without further information exactly what aspects of that child's make-up are responsible for that brevity. The fact that the length of personal narration to a stranger relates to attachment security in this project should not be interpreted to mean that someone encountering a four-year-old who tells a short narrative should jump to the conclusion that that child is insecurely attached to his parents. Moreover, the relationship between attachment security and narrative length is bound to change with older children and adults who are far more loquacious than four-year-olds. And while the mean rating on our attachment measure (.32) does not suggest a strong inclination for mothers to represent themselves as secure bases to which their children retreat when frightened, we must keep in mind that the mothers' measurements might still overestimate their children's security; that is, the children in this study were not observed in the Ainsworth Strange Situation – the gold standard of measuring attachment security. However, within this sample and irrespective of issues we did explore (i.e., gender, age, and receptive vocabulary) and of issues we did not ( e.g., temperament), it seems that security of attachment goes hand-in-hand with the acquisition of narrative skill as well as the likelihood that children will engage in self-disclosure to friendly strangers through autobiographical storytelling.

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