

# Touched by the storyteller: the influence of remote touch in the context of storytelling

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**Abstract**—In this study we investigate the role of remote touch as an additional communication channel in the context of storytelling. We focus on studying the effect of remote touch and the timing of touch on perceived social presence and story recall. In our experiment people listened to an emotional story. Listeners were either remotely touched by the storyteller at emotional story moments, remotely touched at random moments during the story, or not touched at all. Our results indicate that remote touch does not enhance the perceived social presence of the storyteller. However, even when the link between remote touch and the story is not explicitly clear, touch at emotional story moments can contribute to the perception of the story. Furthermore, while touches at emotional story moments can distract from the story content, touch in general can implicitly enhance the attention paid to the story content.

**Keywords**—Haptic I/O, Evaluation/methodology

## I. INTRODUCTION

A phenomenon that most will be familiar with from their childhood is the bedtime story. Typically the parent reads a story from a book or tells a made-up story, and uses voice intonation and gestures to convey the expressiveness of the story. Another important element of the bedtime story ritual is the close proximity to one another, often in a situation where the child will snuggle up to the parent.

The notion that physical contact plays an important role in cognitive and socio-emotional development of the child, as well as in the bonding between parent and child, is supported by literature [3] [12]. Indeed, touch plays a vital role in the communication of affect between individuals [12]. Touch can be used to communicate discrete emotions [1] [10], intimacy, power and status [12]. Moreover, touch can affect liking and compliance to requests [12]. Finally, there is some evidence that touch mediated through haptic feedback technology can also be used to communicate emotions [1] [15], and affects perceptions of the communication partner [5].

In the current study we are interested in the potential role of remote touch as an additional communication channel in the context of storytelling. We focus on studying the effect of remote touch and the timing of remote touch on perceived social presence and story recall. Our research questions are: first, *can remote touch enhance the perceived social presence of the storyteller?* Second, *is the timing of remote touch*

*during particular story moments important?* Third, *what is the influence of remote touch on story recall?*

The remainder of the paper is organized as follows. The next section, section II, discusses related work on social psychological aspects of touch, mediated touch technology, and the influence of mediated touch on presence. Section III describes an experiment where a participant listens to a story and can be remotely touched by the storyteller. Results are presented and discussed in section IV. The paper concludes in section V.

## II. RELATED WORK

### A. Interpersonal touch

Touch between individuals plays an important role in different stages and aspects of human life. Interpersonal touch is essential in the development of cognitive and socio-emotional skills in infants [3]. In adulthood touch remains vital in social interaction, touch is important for maintenance of a romantic relationship [4] but also for expressing affiliative behavior as well as forming and maintaining other social bonds [17]. Moreover, being touched by a loved one can have stress-reducing effects [3]. Social touch can also increase the likelihood of compliance to requests, for example a brief touch from a waitress can increase a customer's tipping behavior [12].

Touch serves an important function in the communication of affect as well. It is one of the primary means by which intimacy between individuals is communicated [12], in this case touch serves as a way of communicating closeness to another person. Furthermore, interpersonal touch can serve as an intensifier of emotional displays from other modalities [9] [11]. Finally, studies have indicated that touches on the body [10] or even just on the arm [11] can be used to communicate specific emotions, such as sympathy, gratitude, and love.

### B. Mediated touch technology

Advances in remote communication and haptic feedback technology have allowed researchers to create systems that enable people to touch each other at a distance. The term mediated social touch is used to refer to those instances where people can touch each other through haptic feedback technology [6]. Different systems have been developed that allow two individuals to manipulate a shared object [2], use touch in telephone conversations [19], communicate hugs at a distance [18], or to communicate different types of touch through touches simulated by vibrotactile feedback [14].

Initial studies on the effects of mediated social touch have found similarities between real touch and mediated touch. The

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influence of mediated touch on compliance to requests was found to be of the same effect size as for real touch [7]. Even simple vibrotactile stimulation can have effects similar to real touch, for instance in the case of mediated touch applied to different body locations [5]. Furthermore, people have similar ideas about the expression of emotions through mediated touch as they do about real touch [15] and are able to communicate discrete emotions through mediated touch [1] [15].

### C. The influence of mediated touch on presence

Mediated touch is able to increase the feeling of presence of a remote communication partner in a collaborative task in a virtual reality setting [13] [16] [20]. In relation to more task-oriented presence research in virtual environments, Wang et al. [22] investigated whether touch by a storyteller in a remote storytelling setting would change the listeners emotional responses to the story, as well as their feeling of closeness to the storyteller. In their study, participants were made to believe a storyteller could add expressiveness to emotional high points in the story using a haptic feedback squeeze armband. Wang et al. found that these expressive touches enhanced the perceived closeness to the storyteller.

In the current study we build on the previous studies of Wang et al. [21] [22]. Our main interest is to find out if their finding of the enhanced feeling of closeness can be replicated using a more robust measure in the form of a social presence questionnaire [8]. Social presence can be defined as “the feeling of being socially present with another person in a remote location” ([20], p2). In other words, we want to know to what extent touch can enhance the feeling of being close to the storyteller. We opt for Harms and Biocca’s social presence questionnaire because it includes measures of feelings of co-presence as well as affective understanding and affective interdependence [8]. The questionnaire therefore covers both closeness in the sense of proximity, as well as closeness in terms of empathy. In addition, we want to investigate whether the timing of the touches (i.e. whether they are applied at emotional high points or at random points during the story) can influence participants’ feelings of social presence toward the storyteller. Furthermore, we look at the role of touch on story recall because there is evidence that touch as an additional channel can both be a distraction and a way to make the listener more attentive [22].

## III. EXPERIMENT SETUP

In our experiment people listened to an emotional story. Listeners were either remotely touched by the storyteller at emotional story moments, remotely touched at random moments during the story or not touched at all. The experiment consisted of a between-subjects design with three conditions: the *emotional touch condition* (similar to the communicative touch condition of [22]), the *random touch condition* and the *no-touch condition* (similar to the base condition of [22]).

In the emotional touch condition the same 14 touch points were used as in the experiment of Wang et al. [22]. The touch points used were of different lengths ranging from .71 to 5.90 seconds ( $M = 2.84$ ). Some touch points covered a

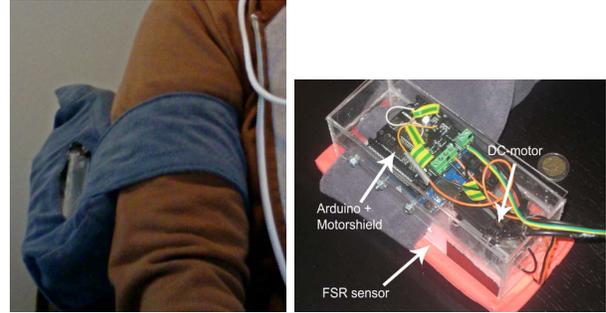


Fig. 1. Squeeze armband worn on the upper arm (left). The armband with the hardware exposed (right).

whole sentence or multiple sentences while others covered just a part of a sentence. Every participant in one of the two touch conditions received the same sequence of touches. In the random touch condition the participant received touches of the same duration as in the emotional touch condition however, these touch points were randomly divided over the story. A randomizer was used to create touch points on parts where the voice was active. None of the random touch points coincided with the touch points of the emotional touch condition.

### A. Participants

A total of 30 people volunteered to participate in this study, one participant was excluded from analysis because of difficulties with understanding the story. Of the remaining 29 participants, 24 male and 5 female, most (21) studied or worked at a higher education institute in the Netherlands. The age of the subjects ranged from 20 to 32 years ( $M = 25$ ) and 26 participants had the Dutch nationality. The division of participants among the three conditions were: emotional touch (10), random touch (10) and no-touch (9).

### B. Materials

1) *Touch device*: For this experiment a squeeze armband was created based on the prototype by Wang et al. [22]. The armband consists of an acrylic casing that includes an Arduino UNO, an Arduino Motorshield and a DC-motor that is attached to an axle that tightens and loosens the fabric strap around the arm (Figure 1). The Arduino Motorshield is powered by a standard 300 watt ATX power supply. On the outside of the casing there are two pieces of foam with a force-sensing resistor (FSR) in-between to measure the force that is exerted on the upper arm. The FSR and the DC-motor are connected to the input and output of the Arduino Motorshield. Using the data from the FSR we adjusted the amount of force applied by the armband so that each participant, despite differences in arm circumference and clothing, received squeezes with the same amount of force.

2) *Story*: We used Wang et al’s [22] audio recordings of “the story of Stevie” which was read by a professional actress. The story is about a boy with Down’s syndrome who found purpose bussing tables in a truck stop cafe. Later in the story

TABLE I. COVER STORIES FOR THE TOUCH AND NO-TOUCH CONDITIONS

Cover story for emotional touch and random touch conditions: "In this experiment a female storyteller is going to tell you a story. In addition to audio, she used a soft object in her hand to express her mental state. Every time she squeezes the soft object, the armband will squeeze your arm. Your task is to listen to the story and answer questions afterwards."
Cover story for no-touch condition: "In this experiment a female storyteller is going to tell you a story. Your task is to listen to the story and answer questions afterwards."

Stevie is diagnosed with a heart problem which forces him to stop working. The story ends happily with the truck drivers raising enough money for Stevie's surgery which turns their truck stop mascot back to health. The story is characterized by it's emotionality and happy ending.

### C. Procedure

The participant was welcomed and was asked to read and sign a consent form. After this the participant was provided with a written explanation of the experimental procedure in accordance with the experimental condition the participant was in (see cover stories Table I). In the two touch conditions the armband was attached to the right upper arm. Next, the participant put on headphones and listened to an example story during which three touches were given to participants in the touch conditions. This test provided the opportunity to both make sure the armband was working correctly and for the participant to get accustomed to the touches. Thereafter the participant listened to the main story (i.e. the story of Stevie). After listening to the main story, the participant completed a social presence questionnaire, as well as answered several questions about the content of the story, followed by questions about their demographics. Finally, a short interview was conducted in which the participant was asked about their experience of the story and the touches. The entire experiment took about half an hour.

## IV. DATA COLLECTION AND ANALYSIS

### A. Social presence scale

A social presence scale [8] was used to measure the participants' perceived presence of the storyteller, see Table IV in Appendix. All six subscales were halved to suit the asynchronous unidirectional interaction in the experiment (i.e. the storyteller was unable to adapt her behavior in reaction to the listener). Furthermore, the remaining questions were adjusted to the situation by substituting the mentioning of the interactant from 'my partner' to 'the storyteller'. The answers to the remaining 18 items were measured on a 5-point Likert scale ranging from strongly disagree to strongly agree.

Cronbach's alphas of the subscales were: attention allocation ( $\alpha = .83$ ), co-presence ( $\alpha = .59$ ), perceived message understanding ( $\alpha = -.86$ ), perceived affective understanding ( $\alpha = .78$ , after deleting item 21 (otherwise:  $\alpha = -.13$ )), perceived affective interdependence ( $\alpha = .76$ ), perceived

TABLE II. MEAN QUIZ SCORES ON STORY CONTENT FOR EACH CONDITION (SD IN PARENTHESES)

Condition	Touch	No-touch	Total
Emotional touch	2.40(.70)	3.10(1.10)	5.50(1.35)
Random touch	3.10(1.10)	3.60(.70)	6.70(1.16)
No-touch	2.67(.87)	3.67(.50)	6.33(1.12)
Total	2.72(.92)	3.45(.83)	6.17(1.28)

behavioral interdependence ( $\alpha = .76$ ). The items of the co-presence and perceived message understanding subscales were analyzed as individual items because of low internal consistency.

A one-way ANOVA was conducted to compare the scores on the social presence scale across conditions. There were no significant differences found between subscale means across conditions (all  $p$ 's  $> .16$ ). Also the individual items of the subscales co-presence and perceived message understanding as well as the excluded item from the perceived affective understanding yielded no significant differences (all  $p$ 's  $> .13$ ).

### B. Quiz about the story content

To evaluate the influence of touch on attention a quiz about the story content was conducted consisting of eight multiple-choice questions, see Table V in Appendix. In order to address the influence of the timing of touch more specifically, half of the questions were about information told during a touch point in the emotional touch condition (i.e. touch questions). The other half of the questions were about story content told at other moments when none of the participants were touched (i.e. no-touch questions).

All participants reported to be unfamiliar with the story of Stevie. A one-way ANOVA was conducted to compare the quiz scores across conditions. For the total quiz scores a marginally significant difference was found ( $F(2, 26) = 2.54, p = .10$ ), see Table II. No significant differences were found between the scores on touch questions and the scores at no-touch questions (all  $p$ 's  $> .24$ ). Further analysis showed significantly higher total quiz scores in the random touch condition compared to the emotional touch condition ( $t(18) = -2.13, p = .05$ ). A paired samples t-test on the quiz scores showed that scores on the no-touch questions were significantly higher than scores on the touch questions independent of condition ( $t(28) = 3.27, p = .003$ ).

### C. Interview

At the end of the experiment a short interview was conducted to gather more information about the experience of the story and the touch device (the latter only in the touch conditions), see Table VI in Appendix. The expressiveness of the story was generally rated high (on a scale from 1 to 10:  $M = 7.52, SD = 1.06$ ). A one-way ANOVA between rated expressiveness and condition yielded no significant differences ( $F(2, 26) = 1.88, p = .17$ ).

The quality of the timing was rated slightly lower in the random touch condition ( $M = 4.60, SD = 1.17$ ) compared to the emotional touch condition ( $M = 5.30, SD = 2.21$ )

TABLE III. ANSWERS TO THE QUESTION “DO YOU THINK THAT THE SQUEEZES HAVE CONTRIBUTED TO YOUR PERCEPTION OF THE STORY?”

Condition	Yes	No	Total
Emotional touch	6	4	10
Random touch	2	8	10
Total	8	12	20

however an independent samples t-test showed no significant difference ( $t(18) = .88, p = .39$ ). As expected, the participants in the random touch condition indicated that the timing of the touches was bad (9 participants) or that the timing was sometimes off (1). Surprisingly, in the emotional touch condition most of the participants (7) also indicated that the timing was off. The others commented that the timing was sometimes off (1), that the squeezes were natural but distracting (1), or about the lack of difference in the touches (1).

The feeling of the squeezes was described by some participants as grabbing (6), by some as emotional/ okay (3). Some participants (6) clearly stated to be unsatisfied with the squeezes because they either felt unnatural (2), the armband made too much noise (2), the squeezes were too long (1), or the squeezes were too hard (1). Others indicated that the touches felt: mechanical (1), hard (1), unsubtle (1), random (1), or constant (1).

The perceived contribution of squeezes to the story was higher in the emotional touch condition compared to the random touch condition see Table III. A one-sided Fisher exact test showed a marginally significant difference ( $p = .09$ ). In the random touch conditions most participants (8) indicated that the squeezes did not contribute because the touches were badly timed (mentioned 4x, one participant mentioned both bad timing and distracting), were distracting (mentioned 4x) or because the voice was more important (1). For some others the squeezes contributed by projecting feelings (1) or as a way of keeping attention to the story (1). In the emotional touch conditions some participants did not think that the squeezes contributed because the squeezes were random (2) or distracting (1), another did not state any specific reason (1). However, most were positive and commented that the squeezes contributed by keeping attention (2), emotion conveyance (2) or because of the novelty (1), another confirmed without stating a specific reason (1).

#### D. Discussion

1) *The role of touch on social presence:* We could not replicate the finding of Wang et al. who reported an enhanced feeling of closeness when touched at emotional high points [22]. Touch, both at emotional story moments and at random moments, did not enhance the perceived social presence of the storyteller in our study. This difference could be due to a difference in constructs (social presence vs. closeness) and/ or measurements (one question or a scale containing several sub-scales). Another point that has to be raised is that while both the story and the social presence questionnaire were presented in the English language, none of our participants was a native English speaker. Cultural differences could have influenced our

results however, this is unlikely because most young Dutch people are used to American television. Furthermore, most of our participants were well-educated and quiz scores were generally high, therefore it is also unlikely that a potential language barrier has confounded our results.

The feeling of the touches varied between people from emotional/ okay to unnatural/ uncomfortable. In this experiment all squeezes were of equal force for all individuals. The applied force could be adjusted to the preferred level for each individual. Also, changes in the hardware can reduce the noise level. Furthermore, in this study the touches only differed in duration. By also varying applied force, a broader spectrum of touches could be generated. Improving the quality of remote touch to feel more natural could enhance the perceived social presence.

2) *The importance of timing of touch:* In our study the touches at emotional story moments were perceived to be mostly unrelated to the story. Even though these touch points were marked as emotional high points in a previous study of Wang et al. [21] and people were able to link these touches at emotional story moments to their own feelings in their second study [22]. However, despite that the timing of the squeezes was perceived to be unrelated to the story, the touches at emotional story moments were reported to contribute to the perception of the story.

3) *The influence of touch on story recall:* Touch distracted people from the story content at the moment of the touch but in general, touch had a positive effect on people’s recall of the story content. A difference in difficulty of the story questions between the questions about emotional story moments compared to questions about other story moments could have enhanced this effect. These findings are in contrast to the self reports on distraction, touches at random moments were reported to be more distracting than touches at emotional moments.

#### V. CONCLUSION

In this study we investigated the role of remote touch as an additional communication channel in the context of storytelling. We focused on the effect of touch on perceived social presence of the storyteller and the recall of the story content. Furthermore, touch during emotional story moments was compared to touch at random moments to investigate the influence of timing of touch.

Touch, whether at emotional story moments or at other moments, did not enhance the perceived social presence of the storyteller. Although the link between remote touch and the story was not explicitly clear, touch at emotional story moments contributed to the perception of the story. Touches at emotional story moments were found to be distracting attention from the story content while touch in general enhanced the attention paid to the story content despite self-reports of distraction. Further research is needed to understand the influence of touch on story recall as has emerged from this study.

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REFERENCES

[1] J. N. Bailenson, N. Yee, S. Brave, D. Merget, and D. Koslow, "Virtual interpersonal touch: expressing and recognizing emotions through haptic devices," *Human-Computer Interaction*, vol. 22, no. 3, pp. 325-353, 2007.

[2] S. Brave and A. Dahley, "intouch: a medium for haptic interpersonal communication," in *CHI'97 extended abstracts on Human factors in computing systems: looking to the future*. ACM, 1997, pp. 363-364.

[3] T. Field, "Touch for socioemotional and physical well-being: A review," *Developmental Review*, vol. 30, no. 4, pp. 367-383, 2010.

[4] A. Gallace and C. Spence, "The science of interpersonal touch: an overview," *Neuroscience & Biobehavioral Reviews*, vol. 34, no. 2, pp. 246-259, 2010.

[5] A. Haans, C. de Nood, and W. A. IJsselsteijn, "Investigating response similarities between real and mediated social touch: a first test," in *CHI'07 extended abstracts on Human factors in computing systems*. ACM, 2007, pp. 2405-2410.

[6] A. Haans and W. A. IJsselsteijn, "Mediated social touch: a review of current research and future directions," *Virtual Reality*, vol. 9, no. 2, pp. 149-159, 2006.

[7] A. Haans and W. A. IJsselsteijn, "The Virtual Midas Touch: Helping Behavior After a Mediated Social Touch," *IEEE Transactions on Haptics*, vol. 2, no. 3, pp. 136-140, 2009.

[8] C. Harms and F. Biocca, "Internal consistency and reliability of the networked minds measure of social presence," 2004.

[9] M. J. Hertenstein and J. J. Campos, "Emotion regulation via maternal touch," *Infancy*, vol. 2, no. 4, pp. 549-566, 2001.

[10] M. J. Hertenstein, R. Holmes, M. McCullough, and D. Keltner, "The communication of emotion via touch," *Emotion*, vol. 9, no. 4, p. 566, 2009.

[11] M. J. Hertenstein, D. Keltner, B. App, B. A. Bulleit, A. R. Jaskolka et al., "Touch communicates distinct emotions," *Emotion*, vol. 6, no. 3, pp. 528-533, 2006.

[12] M. J. Hertenstein, J. M. Verkamp, A. M. Kerestes, and R. M. Holmes, "The communicative functions of touch in humans, nonhuman primates, and rats: a review and synthesis of the empirical research." *Genetic, social, and general psychology monographs*, vol. 132, no. 1, pp. 5-94, Feb. 2006.

[13] C. Ho, C. Basdogan, M. Slater, N. Durlach, and M. Srinivasan, "An experiment on the influence of haptic communication on the sense of being together," in *BT Presence Workshop*. Citeseer, 1998.

[14] G. Huisman, A. Darriba Frederiks, E. M. A. G. Van Dijk, D. K. J. Heylen, and B. J. A. Kröse, "The TaSST - Tactile Sleeve for Social Touch," 2013, pp. 211-216.

[15] G. Huisman and A. Darriba Frederiks, "Towards tactile expressions of emotion through mediated touch," in *CHI'13 Extended Abstracts on Human Factors in Computing Systems*. ACM, 2013, pp. 1575-1580.

[16] M. McLaughlin, G. Sukhatme, W. Peng, W. Zhu, and J. Parks, "Performance and co-presence in heterogeneous haptic collaboration," in *Haptic Interfaces for Virtual Environment and Teleoperator Systems, 2003. HAPTICS 2003. Proceedings. 11th Symposium on*. IEEE, 2003, pp. 285-291.

[17] I. Morrison, L. S. Löken, and H. Olausson, "The skin as a social organ," *Experimental brain research*, vol. 204, no. 3, pp. 305-314, 2010.

[18] F. Mueller, F. Vetere, M. R. Gibbs, J. Kjeldskov, S. Pedell, and S. Howard, "Hug over a distance," in *CHI'05 extended abstracts on Human factors in computing systems*. ACM, 2005, pp. 1673-1676.

[19] Y.-W. Park, K.-M. Baek, and T.-J. Nam, "The roles of touch during phone conversations: long-distance couples' use of poke in their homes," in *Proceedings of the 2013 ACM annual conference on Human factors in computing systems*. ACM, 2013, pp. 1679-1688.

[20] E.-L. Sallnäs, "Haptic feedback increases perceived social presence," in *Haptics: Generating and Perceiving Tangible Sensations*. Springer, 2010, pp. 178-185.

[21] R. Wang and F. Quek, "Touch & talk: contextualizing remote touch for affective interaction," in *Proceedings of the fourth international conference on Tangible, embedded, and embodied interaction*. ACM, 2010, pp. 13-20.

[22] R. Wang, F. Quek, D. Tatar, K. S. Teh, and A. Cheok, "Keep in touch: channel, expectation and experience," in *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems*. ACM, 2012, pp. 139-148.

APPENDIX

The used items of the social presence questionnaire (Table IV), the multiple-choice story questions (Table V) and the questions of the short interview (Table VI).

TABLE IV. ITEMS OF THE NETWORKED MINDS SOCIAL PRESENCE MEASURE WITH ORIGINAL ITEM NUMBERS ADAPTED FROM HARMS AND BIOCCA (2004)

Reversed	Item	Subscale
		Co-presence
	1	I noticed the storyteller.
	3	The storyteller's presence was obvious to me.
	5	The storyteller caught my attention.
		Attentional Allocation
X	7	I was easily distracted from the storyteller when other things were going on.
	9	I remained focused on the storyteller throughout our interaction.
X	11	The storyteller did not receive my full attention.
		Perceived Message Understanding
	14	The storyteller's thoughts were clear to me.
	15	It was easy to understand the storyteller.
X	17	Understanding the storyteller was difficult.
		Perceived Affective Understanding.
	19	I could tell how the storyteller felt.
X	21	The storyteller's emotions were not clear to me.
	23	I could describe the storyteller's feelings accurately.
		Perceived Emotional Interdependence
	25	I was sometimes influenced by the storyteller's moods.
	27	My feelings influenced the mood of our interaction.
	29	The storyteller's attitudes influenced how I felt.
		Perceived Behavioral Interdependence
	31	My behavior was often in direct response to the storyteller's behavior.
	33	I reciprocated the storyteller's actions.
	36	My behavior was closely tied to the storyteller's behavior.

TABLE V. MULTIPLE-CHOICE QUESTIONS ABOUT THE "STORY OF STEVIE" ((T) = QUESTION ABOUT STORY CONTENT TOLD AT A TOUCH MOMENT IN EMOTIONAL TOUCH CONDITION)

Why was Stevie at the Mayo Clinic in Rochester?
<ul style="list-style-type: none"> <li>● to visit his mother</li> <li>● getting a new valve put in his heart</li> <li>● for an examination of his condition</li> <li>● I don't know</li> </ul>
Stevie's mother became disabled after.. (T)
<ul style="list-style-type: none"> <li>● a car accident</li> <li>● repeated surgeries for cancer</li> <li>● an accident at work</li> <li>● I don't know</li> </ul>
What was Stevie afraid of?
<ul style="list-style-type: none"> <li>● his surgery</li> <li>● that his job was in jeopardy</li> <li>● for his mothers health</li> <li>● I don't know</li> </ul>
What did Frannie do when she heard the news? (T)
<ul style="list-style-type: none"> <li>● a little dance in the aisle</li> <li>● walked outside</li> <li>● hugged Belle Ringer</li> <li>● I don't know</li> </ul>
What was the storyteller most worried about?
<ul style="list-style-type: none"> <li>● the truckers</li> <li>● the homeless</li> <li>● the four-wheeled drivers</li> <li>● I don't know</li> </ul>
The storyteller paying Stevie was probably.. (T)
<ul style="list-style-type: none"> <li>● the only way for Stevie and his mother to get by.</li> <li>● the only reason Stevie worked there.</li> <li>● the difference between them being able to live together and Stevie being sent to a group home.</li> <li>● I don't know</li> </ul>
What disability does Stevie have?
<ul style="list-style-type: none"> <li>● visually impairment</li> <li>● Down Syndrome</li> <li>● a cognitive disorder</li> <li>● I don't know</li> </ul>
What did Frannie say while looking to the storyteller with shiny eyes? (T)
<ul style="list-style-type: none"> <li>● "Pony Pete"</li> <li>● "Stevie"</li> <li>● "Truckers"</li> <li>● I don't know</li> </ul>

TABLE VI. QUESTIONS ASKED IN THE SHORT INTERVIEW

1	What do you think of the expressiveness of the story on a scale from 1 to 10?
2	What did you think about the timing of the squeezes on a scale from 1 to 10? Why? (touch conditions only)
3	How would you describe the squeezes? (touch conditions only)
4	Do you think that the squeezes have contributed to your perception of the story? (touch conditions only)
5	Do you have any comments about this experiment or research?