

Chinese Language Narration

Culture, cognition, and emotion

*Edited by Allyssa McCabe
and Chien-ju Chang*

STUDIES IN NARRATIVE 19

John Benjamins Publishing Company

Chinese Language Narration

Studies in Narrative (SiN)

The subject of SiN is the study of narrative. Volumes published in the series draw upon a variety of approaches and methodologies in the study of narrative. Particular emphasis is placed on theoretical approaches to narrative and the analysis of narratives in human interaction.

For an overview of all books published in this series, please see <http://benjamins.com/catalog/sin>

Editor

Michael Bamberg
Clark University

Advisory Board

Susan E. Bell Bowdoin College	Rom Harré Linacre College, Oxford	Allyssa McCabe University of Massachusetts, Lowell
Jerome S. Bruner New York University	David Herman Nort Carolina State University	Eric E. Peterson University of Maine
Jennifer Coates Roehampton University	Janet Holmes Victoria University of Wellington	Catherine Kohler Riessman Boston University
Michele L. Crossley Edge-Hill University College	Charlotte Linde Institute for Research Learning	Deborah Schiffrin Georgetown University
Carol Gilligan New York University	Dan P. McAdams Northwestern University	Margaret Wetherell Open University

Volume 19

Chinese Language Narration. Culture, cognition, and emotion
Edited by Allyssa McCabe and Chien-ju Chang

Chinese Language Narration

Culture, cognition, and emotion

Edited by

Allyssa McCabe

University of Massachusetts Lowell

Chien-ju Chang

National Taiwan Normal University

John Benjamins Publishing Company

Amsterdam / Philadelphia



The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

CIP data is available from the Library of Congress.

Studies in Narrative, ISSN 1568-2706 ; v. 19

ISBN 978 90 272 2659 4 (Hb ; alk. paper)

ISBN 978 90 272 7109 9 (Eb)

© 2013 – John Benjamins B.V.

No part of this book may be reproduced in any form, by print, photoprint, microfilm, or any other means, without written permission from the publisher.

John Benjamins Publishing Co. · P.O. Box 36224 · 1020 ME Amsterdam · The Netherlands
John Benjamins North America · P.O. Box 27519 · Philadelphia PA 19118-0519 · USA

Table of contents

List of contributors	VII
Introduction <i>Allyssa McCabe and Chien-ju Chang</i>	1
Narrative self-making during dinnertime conversations in Chinese immigrant families <i>Jessie Bee Kim Koh and Qi Wang</i>	7
Evaluation in Mandarin Chinese children's personal narratives <i>Chien-ju Chang and Allyssa McCabe</i>	33
Chinese and English referential skill in Taiwanese children's spoken narratives <i>Ming-huei Sung and Chien-ju Chang</i>	57
Global and local connections in Mandarin-speaking children's narratives: A developmental study based on the frog story <i>Wen-huei Sah</i>	85
Socioeconomic differences in Taiwanese children's personal narratives: Conjunctions, internal state terms, and narrative structures <i>Wen-Feng Lai</i>	115
A study of narrative development of young Chinese children with specific language impairment aged four to six years <i>Fangfang Zhang</i>	143
Narratives of Mandarin-speaking patients with schizophrenia <i>Ning Hsu, Hintat Cheung, Enan Wang and Tai-Li Chou</i>	181
Author index	207
Subject index	211

List of contributors

Allyssa McCabe, Ph.D.

Professor

Department of Psychology
870 Broadway Street, Suite 1
University of Massachusetts Lowell
Lowell, Massachusetts 01854-3043
United States of America

Chien-ju Chang, Ed.D.

Professor

Department of Human Development
and Family Studies
National Taiwan Normal University
162 Ho-ping East Road, Section 1
Taipei 106
Taiwan
Republic of China

Tai-li Chou, Ph.D.

Associate Professor

Department of Psychology
National Taiwan University
1 Roosevelt Road, Section 4
Taipei 106
Taiwan
Republic of China

Cheung Hintat, Ph.D.

Professor

Department of Linguistics and
Modern Language Studies (HKIED)
Hong Kong Institute of Education
(HKIED)
10 Lo Ping Road, Tai Po, NT.
Hong Kong

Ning Hsu

Doctoral Student

Department of Speech and Hearing
Science (UIUC)
University of Illinois,
Urbana-Champaign (UIUC)
901 South Sixth Street
Champaign, IL 61820
United States of America

Jessie Bee Kim Koh

Ph.D. candidate

Department of Human Development
Cornell University
208 Martha Van Rensselaer Hall
Ithaca, NY 14853
United States of America

Wen-Feng Lai, Ed.D.

Associate Professor

Department of Human Development
and Family Studies
National Taiwan Normal University
162 Ho-ping East Road, Section 1
Taipei 106
Taiwan
Republic of China

Wen-hui Sah, Ph.D.

Associate Professor

Department of English
National Chengchi University
64, Chih-nan Road, Section 2
Wen-shan, Taipei 106
Taiwan
Republic of China

Ming-huei Sung, Master's
Teacher
Chung Cheng Elementary School
36 San Min Road
Hsin Tien, New Taipei City 231
Taiwan
Republic of China

En-nan Wang, Ph.D.
Assistant Professor
Department of Psychiatry (SKW)
Shin Kong Wu Ho-Su Memorial
Hospital 95, Wen Chang Road
Shih Lin, Taipei
Taiwan
Republic of China

Qi Wang, Ph.D.
Professor
Department of Human Development
Cornell University
209 Martha Van Rensselaer Hall
Ithaca, NY 14853-4401
United States of America

Fangfang Zhang, Ph.D.
Associate Professor
School of Foreign Languages and
Culture
Nanjing Normal University
122 Ninghai Road
Nanjing, Jiangsu 210097
China

Introduction

Allyssa McCabe and Chien-ju Chang

Mandarin Chinese is the most frequently spoken language in the world; approximately 730 million people speak Mandarin Chinese. By way of comparison, English – the second most frequently spoken language in the world – has a little over 400 million speakers (Crystal, 1997, p. 289). The amount of information about English versus Mandarin Chinese narration, however, is tipped decidedly the other way, with our knowledge of the latter rather sparse to date. This volume is intended to address this imbalance.

Narrative is the linguistic crossroads of culture, cognition, and emotion (McCabe, 1991, 1997). Narrative is the way we make sense of our experience and the way we present ourselves to others. This volume contains information relevant to all those aspects of narration. Three issues predominate: cross-cultural comparisons, development of narration with age, and individual variation in narrative ability among speakers of Mandarin Chinese.

While there are many possible means of narrative elicitation, work in this volume used one of two sorts: personal narratives and narratives told in response to wordless picture groups. Personal narratives were the focus of Chapter 1 on dinner-table conversations, Chapter 2 on evaluative devices, Chapter 5 on socioeconomic differences in Taiwanese children's narration, and Chapter 6 on the narration of children with SLI. Wordless picture books were employed in Chapter 3 on referential strategies of Taiwanese EFL (English as a Foreign Language) students, Chapter 4 on the development of local versus global connections, and Chapter 7 on narration of individuals with schizophrenia.

In the first chapter, Koh and Wang (this volume) analyzed memory conversations at dinnertime in Chinese immigrant (in America) and European American families with preschool-aged children. They found that Chinese immigrant families made more frequent mention of locations of events and people involved and drew more attention to children's misbehavior and moral and social rules, which is congruent with cultivating an interdependent self, one more concerned with context than American families. Surprisingly, Chinese immigrant parents also made more frequent mention of the internal states of their children – their

children's own opinions, preferences, thoughts, and feelings – than did European American parents. In this respect, Chinese immigrant parents are encouraging an expression of the independent self. Thus, Chinese immigrant parents are encouraging development of a bicultural self in their children.

The second chapter is also comparative of cultures. Chang and McCabe (this volume) analyze and compare the frequency and proportion of evaluation, which is a key aspect of narration. Good narratives not only inform listeners of the context in which something occurred and the component events of that occurrence, they also tell listeners the meaning those events had for them; that is, they tell listeners how what happened compared to their expectations of that occurrence, how they felt about what, in fact, did happen, and their sense of what caused events to occur as they did. Those authors look at the frequency and proportion of evaluation in narratives produced by Chinese Mandarin-speaking children aged 3–9 years, and compare the results to the same measures in English-speaking American children aged 4–9 years. There were a number of key cultural differences. The Chinese-speaking children showed significant development over time, whereas the American children did not. The types of Chinese-speaking children's evaluation were intercorrelated, whereas the American children's evaluation types were for the most part not. But the most striking finding is that whereas Chinese-speaking children fully or partially evaluated between 13 and 25% of their narrative clauses, the American children evaluated 50% of their clauses in some way at all ages studied. The authors place this finding in the same context as Koh and Wang; evaluation may well be a key mnemonic device for autobiographical memory. Other work by Wang has in fact demonstrated that native and overseas Asian, compared to European and European-American adults, have later onset of autobiographical memory, remember fewer childhood memories, and report fewer specific details about those memories (see Wang, 2006, for review).

In Chapter 3 – the third comparison of Chinese and English narration – Sung and Chang examine the referential skill of Taiwanese sixth-grade children who are learning English as a Foreign Language (EFL) at an advanced level of skill. Children were asked to narrate a wordless picture book, *Frog, where are you* (Mayer, 1969) in Chinese and English. These advanced EFL children struggled especially in making appropriate referential choices, particularly in the context of referent introduction. In Mandarin Chinese, the form of bare nominal is an acceptable way to introduce referents since a determiner is optional with a noun, and nominals without determiners can be interpreted as indefinite or definite depending on the context, but this is not the case in English, in which a determiner *a* or *the* is obligatory with a noun, and the use of bare nominals (except for proper names) is judged incorrect. There were still some students who applied their L1 knowledge of bare nominals to introduce referents in their L2 narratives. This finding not only

locates a key linguistic difference between the two languages, it also suggests an important target for EFL instruction.

Development of narration is the focus of several studies in this volume. As we have seen, Chapter 2 documents Mandarin Chinese speaking children's development of narration. In Chapter 4, Sah addresses developmental progression in the use of global and local connections in narration of a wordless picture book, *Frog, where are you* (Mayer, 1969). On the global level, many 5-year-olds included no plot components at all, though others were capable of doing so. Nine-year-olds included at least one component, while 19-year-olds included all possible components over 90% of the time. Preschoolers' narratives were full of object naming and description, and they are likely to treat each scene as a discrete event. In this respect Mandarin Chinese-speaking children resemble children of typologically very different languages (Berman & Slobin, 1994), which the authors interpret to mean that the global narrative structure may be a matter of general perception and cognition rather than linguistic form. While 5-year-olds struggled to maintain coherence at both global and local levels, 9-year-olds are more advanced in making global connections, but still struggle at the local level. Almost all adults are adept at both. At the local level (describing one of the pictures, e.g.), the adults mention a change of state (the boy wakes up), a temporal anchor (the next morning), the boy's cognizance (the boy notices something), the state of affairs (the frog is missing), and the boy's reaction (he is surprised or worried).

Chapters 5, 6, and 7 address variation among individual speakers of Mandarin Chinese. In Chapter 5, Lai looks at socioeconomic differences in Taiwanese 5-year-old children's personal narratives. Middle-class children were compared to two working class groups: typical working-class Taiwanese and working class children whose mothers were foreign brides from Southeast Asian countries (cross-border marriage group). Middle-class children had significantly greater vocabularies than both of the working class groups. Middle-class children used significantly more temporal conjunctions than children of cross-border marriage group. Middle-class 5-year-olds told narratives that were significantly better than the typical working class children, whose narratives were significantly better than those of cross-border marriages. Specifically, middle-class Taiwanese children told narratives that were chronological (no high point), that ended at the high point, or that were classics including resolution, much like American English-speaking children (Peterson & McCabe, 1983). The typical working class children predominately told chronological narratives. The working class children of cross-border marriages, however, told narratives that were not clearly structured, or that were not sequenced logically or were chronological, lacking a high point. In view of the fact that a longitudinal study (Snow, Porche, Tabors, & Harris, 2007) of working class American English-speaking children found that the ability to tell a narrative at age

5 predicts 4th, 7th, and 10th grade reading comprehension, the findings of this study are concerning.

Chapter 6 investigates the narrative development of Chinese children with specific language impairment (SLI) compared to their typically developing (TD) peers. The children with SLI were followed longitudinally and compared to a cross-sectional study of children with TD. The narration of children with SLI (a nonverbal IQ of 80 or more) was significantly lower than that of their peers with TD in terms of length, components, and appropriate use of codas, but they developed these rapidly between 4 and 6 years. Children with SLI also produced significantly fewer evaluations than did their peers, but this ability developed very slowly by comparison to length, components other than evaluation, and codas. Children with SLI thus show asynchronous development of structure, evaluation, and temporality. Evaluation, Zhang concludes, presents the primary area of difficulty for children with SLI. In view of the findings presented in the second chapter about the comparative reluctance of Mandarin Chinese-speaking children to evaluate their narratives (compared to American English-speaking children), and a review of substantial research linking children's narration to parental input, we can speculate that clinicians would need to encourage Mandarin Chinese-speaking parents to do that which goes against their cultural values: ask their children repeatedly about what they feel and think about past experiences.

The final chapter analyzes the narratives of Mandarin Chinese-speaking adult patients with schizophrenia and compares them to those of peers without schizophrenia. Individuals were asked to narrate several picture books. Individuals with schizophrenia produced significantly shorter narratives but demonstrated an intact ability to produce basic elements of narration, performing relatively well in terms of sequencing events and referential skill. However, individuals with schizophrenia were significantly poorer in six other dimensions; they displayed lower reasonableness, gave less background information, less evaluation, less conjunctive cohesion, and a poorer overall narrative pattern. Individuals with schizophrenia seem to have difficulty assessing the needs of their listeners (reasonableness, background information, evaluation). Lexical analyses showed that individuals with schizophrenia also used fewer contrastive connectives and mental verbs in telling stories. Such impairments in their narration mean that individuals with schizophrenia have a compromised ability to make sense of their experiences, as well as to communicate with others.

In short, this volume gives us a complex view of Mandarin Chinese-speaking narration, development of this narration with age, and individual variation in this ability due to socioeconomic class, specific language impairment, and schizophrenia. Directly and indirectly the contributors to this volume also give us a sense of Chinese-language narration compared to English-language narration, allowing

us to note similarities in narration across these two very different languages (e.g., family talk about the past, use of evaluation in narrative, developmental progression in preschool years) as well as differences (e.g., what is emphasized in family talk about the past, amount and types of evaluation in narratives, referential strategies, especially ways of introducing referents).

As a Chinese proverb says, “A single flower does not make a spring; spring is in the garden where hundreds of flowers blossom” (*yi1 hua1 du2 fang4 bu2shi4 chun1, ba3 hua1 qi2 fang4 chun1 man3 yuan2*). This book opens the window to narration of a population that has not received enough attention in the past. In the field of narrative research, Spring will come only when we understand and appreciate not only the narratives of English-speaking children but also the narratives of speakers from other languages and cultures.

Acknowledgements

This book was supported by National Science Council [grant number NSC96-2413-H-003-001] and “Aim for the Top University Project” of National Taiwan Normal University and Ministry of Education, Taiwan, R.O.C.

References

- Berman, R., & Slobin, D. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Crystal, D. (1997). *The Cambridge encyclopedia of language* (2nd edition). Cambridge: CUP.
- Mayer, M. (1969). *Frog, where are you?* New York, NY: Dial Press.
- McCabe, A. (1991). Editorial. *Journal of Narrative and Life History*, 1(1), 1–2.
- McCabe, A. (1997). Developmental and cross-cultural aspects of children’s narration. In M. Bamberg (Ed.), *Narrative development: Six approaches* (pp. 137–174). Mahwah, NJ: Erlbaum.
- Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child’s narrative*. New York, NY: Plenum Press.
- Snow, C. E., Porche, M. V., Tabors, P. O., & Harris, S. R. (2007). *Is literacy enough? Pathways to academic success for adolescents*. Baltimore, MD: Paul H. Brookes.
- Wang, Q. (2006). Relations of maternal style and child self-concept to autobiographical memories in Chinese, Chinese immigrant, and European American 3-year-olds. *Child Development*, 77, 1794–1809.

Narrative self-making during dinnertime conversations in Chinese immigrant families

Jessie Bee Kim Koh and Qi Wang
Cornell University

Narrative self-making at dinnertime was examined in Chinese immigrant families, with European American families serving as a comparison group. Based on Bruner's (1986, 1990) "dual landscapes" theoretical framework, we analyzed memory conversations at dinnertime in five Chinese immigrant and seven European American families with preschool-aged children. Chinese immigrant families engaged in lengthier dinner conversations than did European American families. Chinese immigrant and European American parents further differed in the way they narrated information pertaining to the landscape of actions (e.g., people involved, child's actions, others' actions) and landscape of consciousness (e.g., child's internal states, others' internal states). As Chinese immigrant parents continue to uphold values from the culture-of-origin while adopting the values of the host culture, they narrated information that would socialize their children towards the development of a bicultural self. On the other hand, in accordance with their cultural values, European American parents narrated information that would socialize their children towards the development of an independent self. Dinnertime thus functions as an important socialization context for narrative self-making to construct a cultured self.

Keywords: narrative, Chinese, self, conversation, culture

Introduction

Narrative encompasses the act of storytelling to organize experience and construct reality (Bruner, 1986, 1990). In the developmental context, narrating personal stories is one important medium for parents to help children organize their experience and construct reality in ways that are in tune with the prevailing values and norms of the cultural world in which they reside. It is a particularly powerful medium for parents to socialize their children to develop a self-concept that aligns with the expected cultural model of selfhood. Extant literature has examined

narrative self-making through mother-child memory conversations (Nelson & Fivush, 2004). In day-to-day life, there is one context that may be particularly common for parents to scaffold children's developing sense of self through narratives, namely, family dinnertime. Dinnertime has been regarded as an opportunity space where parents and children can come together to discuss and generate knowledge about everyday events (Ochs, Smith, & Taylor, 1989; Ochs, Taylor, Rudolph, & Smith, 1992). Yet, little is known about narrative self-making through dinnertime conversations.

Immigrant families are faced with the unique challenge of socializing their children to develop a self-concept that is in relation to both the host and origin cultures, where the respective cultural values, norms and expectations may not necessarily be congruent with each other. Dinnertime may serve as an important socialization context for immigrant parents to discuss everyday events. Through such discussions, they can come to socialize their children towards developing a bicultural self that is adaptive in the immigrant context.

In this chapter, we analyze dinnertime conversations in Chinese immigrant families with preschool-aged children, with European American families serving as a comparison group to illustrate the role of family narrative practices in the construction of a cultured self. We first review theoretical accounts of the features of narrative that make it a powerful tool to understand human actions, intentions, thoughts and feelings as situated within one's cultural framework. We then review theoretical perspectives and empirical findings on narrative self-making, particularly in the developmental and cultural contexts. We then highlight theoretical accounts of the importance of narrative self-making at dinnertime, especially in the immigrant context. Finally, we detail a research project that analyzed narrative self-making during dinnertime conversation in Chinese immigrant and European American families.

Why narratives?

The word narrative derives from the Latin verb *narrare*, meaning "to recount" and is related to the adjective *gnarus*, meaning "knowing." It entails the act of storytelling from which individuals discern meaning from experiences. The value of narrative has been highlighted in psychological research in recent years. Bruner (1986, 1990) distinguished between two modes of thinking for organizing experience and constructing reality. The paradigmatic mode refers to logical-scientific thinking that seeks to establish truth about the world through logical thinking, systematic observations, and empirical proof. In contrast, the narrative mode refers to story-form thinking that seeks to establish lifelikeness through recounting experiences and meaning making. While the paradigmatic mode has been

a familiar way of thinking about human conditions to social scientists, the introduction to the narrative mode sets forth a way in which the experiential specificity of human action and intentionality as situated in cultural contexts can be best understood. Research using narrative methods has investigated a variety of topics such as family socialization (e.g., Miller, Fung, & Koven, 2007; Miller, Fung, Lin, Chen, & Boldt, 2012), self and identity development (e.g., McLean, 2005; McLean, Pasupathi, & Pals, 2007), autobiographical memory (e.g., Fivush & Nelson, 2004; Nelson & Fivush, 2004), and emotion knowledge and emotion regulation (e.g., Wang, 2001; Wang & Fivush, 2005). More recently, narrative methods have been used to study more varied human conditions, one of which concerns parenting and child development in the immigrant context (e.g., Koh, Shao, & Wang, 2009; Wang, 2012).

Several distinct features of narrative are particularly noteworthy from the current perspective (Bruner, 1986, 1990). Narrative often deals with the canonical and the exceptional. Typically, a story begins with what is considered canonical, then proceeds to some form of departure from it, and then moves on to restore the canonical and finally, arrives at a resolution and a coda, which is often some form of moral insight. By portraying both the ordinary and the deviations, narrative reveals cultural meaning. Every culture has its own set of ideologies, beliefs, values, and practices that constitute what is considered normal about human functioning. Personal stories, through illustrating the canonical, reveal the common thoughts and behaviors within a particular cultural milieu. And through explaining and making sense of the exceptional, stories negotiate meanings of the norm-deviated thoughts and behaviors to render them understandable within the canonical as prescribed by a specific culture.

Furthermore, narrative comprises what Bruner (1986, 1990) termed “dual landscapes”. The landscape of action refers to the actions, events, and plot of the story, and the landscape of consciousness refers to the mental states of the characters involved in the landscape of action. With such dual landscapes, narrative depicts both actions and psychological states of the characters and thus reveals personal meaning. In other words, narrative deals with one’s actions, intentions, beliefs, desires, emotions, needs, and goals. Through telling about one’s internal states and evaluations of the events and happenings, personal stories reveal how one interprets the events and happenings as they unfold and their significance to oneself.

Perhaps the most important property of narrative is its sequentiality (Bruner, 1986, 1990). Narrative is made up of a unique sequence of changing events and happenings that involve some characters and their mental states. These constituents of narrative, when configured together, form the plot of the story. The meaning of each constituent is derived from its relation to the plot, and the meaning of

the plot is, in turn, derived from the sequential positioning of each constituent. Through the particular sequencing of the constituents, the overall plot comes into being and the narrative makes meaning. Thus, embodied in the body of words in narrative (in oral or written forms) is a set of powerful features to discern meaning of personal experiences within the framework prescribed by the cultural context in which one operates.

Narrative self-making

The narrative approach views personal storytelling as a critical means of meaning-making in defining the self, where “we achieve our personal identities and self-concept through the use of the narrative configuration, and make our existence into a whole by understanding it as an expression of a single unfolding and developing story” (Polkinghorne, 1988, p. 150). Bruner (1990) argued that the self is constructed and reconstructed with changing situations as one experiences them. This self-construction process is guided by one’s memories of the past and one’s anticipation of the future. It is through telling about oneself that one makes up the story of the self – who one is, what one is, what has happened, and why one is doing what one is doing. Along a similar line, Nelson (2000, 2001) suggested that during the narrativizing process about the self, the self is able to take an external viewpoint on one’s own experience. And with the provision of a verbal account of the experience, the Experiencing I becomes the Objective Me. The narration about the self in the past and the future further facilitates the construction of a Continuing Me. Thus, by examining “how *individuals* define their own Selves” in their life stories (Bruner, 1990, p. 116), we can start to understand how the self is negotiated and constructed through narrative reflections on one’s personal and cultural experiences.

Furthermore, narrative approaches to self-construction utilize unstructured, open-ended methods that allow individuals to “generate their own self-descriptions, using their own vocabularies and guided by their unique perspectives on themselves” (Hart & Edelstein, 1992, p. 304). Personal storytelling thus enables us to analyze and understand the processes of the development and socialization of the self from the individuals’ own point of view.

Narrative self-making in children

Developmentally, children are predisposed naturally to the act of narration to make sense of human action and intentionality (Bruner, 1986, 1990). Language development and socialization practices further allow children to perfect narrative skills. In line with Bruner’s proposal, researchers of the Vygotskian (Vygotsky,

1978) social interactionist tradition maintain that narrative is both a linguistic and a socially-mediated practice (e.g., Nelson & Fivush, 2004; Miller et al., 2012). Adults (usually mothers) may provide multiple participant structures for children to take part in narrating stories, including telling stories *around* the child, telling stories *about* the child, and telling stories *with* the child (Miller & Moore, 1989). Through narrating stories in these manners, adults scaffold children to organize their experience and construct reality, as well as model to children the culturally canonical ways of narration. Importantly, such organization and modeling are in tune with the prevailing cultural beliefs, knowledge and language structures, and ways of thinking and feeling. Children, in turn, make sense of themselves and their social worlds within the framework prescribed by their culture.

Among the different participant structures, mothers telling stories of personally significant past experiences with children (i.e., mother-child memory conversations) is an especially powerful medium for mothers to socialize their children to construct a self that aligns with cultural expectations. According to the social cultural developmental theory on the emergence of autobiographical memory (Fivush & Nelson, 2004, 2006; Nelson & Fivush, 2004), emerging language abilities allow young children to represent, evaluate, and share past experiences with adult scaffolding. In line with Bruner's (1986, 1990) discussion of the "dual landscapes", through participation in memory conversations with adults, children learn to provide orienting and referential information (which corresponds to the landscape of actions), as well as provide evaluative information (which corresponds to the landscape of consciousness). Through learning these canonical ways of narration, children come to construct coherent and meaningful accounts of the past. Importantly, adults' reflection on children's actions and provision of internal states and causal language place the past in emotionally and personally meaningful contexts for the children. Such conversational elements bring about awareness of the former self, which shapes children's development of a sense of self in the past. Furthermore, during the course of sharing the past with adults, children come to the awareness that what they remember may or may not be the same as what someone else remembers about the same event. Through negotiating the differences and disagreements, children come to realize that they have a unique perspective on what occurred. In effect, children come to understand the self in the past as differentiated from others, and as different from but continuous with the self in the present.

Elaborative memory conversations are particularly instrumental to children's autobiographical memory and self-development (for a review, see Fivush, Haden, & Reese, 2006). Extensive research has shown that there are two markedly different styles of narration that mothers use when sharing memories with their children. Mothers who use an elaborative or topic-extending style engage in lengthy conversation with their children. They provide rich and embellished information

about the past events under discussion and encourage children to provide similarly lengthy, rich, and embellished narratives. In contrast, mothers who use a low-elaborative, topic-switching or repetitive style engage in shorter conversation with their children. They provide fewer details about the past events under discussion and tend to ask pointed questions which have correct or incorrect answers. Depending on the parental narrative style, the amount of information narrated varies, which can affect children's developing sense of self. For example, elaborate discussions of internal states during memory conversations have been found to facilitate the development of a subjective autobiographical self (Fivush & Haden, 2005). Furthermore, mothers who mention more about emotion (Welch-Ross, Fasig, & Farrar, 1999), especially those who explain more about negative emotions (Bird & Reese, 2006), have children with more organized and consistent self-knowledge. In addition, mothers who mention more about positive emotions and explain more about both positive and negative emotions have children with higher self-esteem (Reese, Bird, & Tripp, 2007).

Narrative self-making in children across cultures

Bruner (1986, 1990) contended that narratives are culturally bounded. In line with this view, mothers of different cultures engage in memory conversations with their children in different manners, and children, in turn, come to develop a sense of who they are that is in tune with the respective cultural milieus they reside in (Wang, 2006). Much of the cross-cultural research on autobiographical memory development has focused on comparisons between cultures that value independence or interdependence. Cultures valuing independence include North America, Western Europe and Australia, where the individual self is emphasized and personal distinctiveness and self-expression are highly cherished. Cultures valuing interdependence include East Asia, Latin America, Southern Europe and Africa, where the self-in-relation is highlighted and interpersonal harmony, social hierarchy and social conformity are highly prized (Markus & Kitayama, 1991).

Studies have found that the amount of information and the types of information elaborated by mothers during memory conversations differ significantly across cultures (Miller et al., 2007, 2012; Wang, 2007; Wang, Doan, & Song, 2010; Wang & Fivush, 2005; Wang, Leichtman, & Davies, 2000). Mothers in cultures that embrace independence, such as European Americans, use a high-elaborative, independently-oriented conversational style. These mothers tend to elaborate upon the child's personal predilections, opinions and internal states, and often downplay their children's transgressions with the goal of protecting children's self-esteem. Such memory conversations are geared towards the development of autonomy and self-expression, consistent with the Western cultural emphasis on

independence. In contrast, mothers in cultures that embrace interdependence, such as the Chinese and Chinese immigrants, employ a low-elaborative, interdependently-oriented conversational style. These mothers frequently pose and repeat factual questions, and tend to show great concerns about children's social interactions and proper behaviors. They often utilize discussions of children's transgressions to convey behavioral expectations as well as moral and social rules. The nature of such memory conversations is thus directed towards attention to social hierarchy, conformity and relationships, in line with the cultural emphasis on interdependence.

Correspondingly, children come to develop a sense of self that is congruent with their respective cultures, as reflected in two kinds of self-knowledge – autobiographical memory and self-concept (Han, Leichtman & Wang, 1998; Wang, 2004, 2006; Wang et al., 2010). Specifically, European American children often provide elaborate and detailed autobiographical memories focusing on their own roles, preferences, thoughts and feelings. In their self-descriptions, European American children frequently highlight their personal and inner attributes, dispositions and traits in a positive light. In contrast, Chinese and Chinese immigrant children provide relatively skeletal accounts of past experiences that center on social interactions and daily routines in their autobiographical memories. In their self-descriptions, Chinese and Chinese immigrant children often highlight their social roles, context-specific characters and overt behaviors in a neutral or modest tone.

Narrative self-making at dinnertime

The literature on narrative self-making to date has largely focused on examining dyadic memory conversations between mothers and children. However, there is increased recognition that telling stories and sharing memories with the family as a whole is pertinent to child development. Ochs and colleagues (Ochs et al., 1989, 1992) have argued that dinnertime is an opportunity space for families to come together to recount the day's event or to make plans for future events. In particular, through participating in the family's reminiscing about the day's events, members of the family not only learn to become storytellers but also theory-builders of their daily experiences. This is because each story that is told must be first explained. The explanations are then challenged by members of the family, who may add different perspectives to the story. The story is then reevaluated to reach a theory of what happened. This opportunity space allows for not only generation of social order, but also knowledge of everyday events.

Importantly, knowledge of everyday events generated through family reminiscing is instrumental to defining who one is. Although not directly examining

family conversations at dinner tables, the few studies to date about family reminiscing have shown that sharing memories with the family influences children's self-development. In particular, a coordinated family reminiscing style that incorporates perspectives from not just mothers, but also fathers and other family members, is associated with higher self-esteem, especially in girls (Bohanek, Marin, Fivush, & Duke, 2006). Nonetheless, not unlike in dyadic mother-child memory conversations, maternal (but not paternal) mentions and explanations about emotions during family reminiscing are associated with children's positive self-esteem longitudinally (Bohanek, Marin, & Fivush, 2008).

The emerging attention on family reminiscing suggests that it is another important socialization context in which parents can scaffold children's developing sense of self, in addition to mother-child memory-sharing. Such reminiscing often takes place at family dinnertime and may be shaped by the specific cultural context.

Narrative self-making at dinnertime in the Chinese immigrant context

The Chinese immigrant families in the United States are one important cultural context to understand self-socialization and development. Chinese immigrant families are operating within a bicultural environment that includes influences from the host culture and the culture-of-origin. The two sets of cultural beliefs, knowledge and language structures, and ways of thinking and feeling are not necessarily congruent with each other. On the one hand, the host culture emphasizes the value of independence and its corresponding repertoire of psychological characteristics. On the other hand, the culture-of-origin emphasizes the value of interdependence and its corresponding set of behavioral characteristics. Kagitcibasi (2007, 2012) has contended that the development of an autonomous-relational self is the most adaptive in the immigrant context. This is because it is with such a bicultural self that immigrant children can navigate and function within the mainstream host cultural environment, while continuing to be relational and garner support from their families that are representative of the culture-of-origin. In effect, Chinese immigrant families are faced with the unique challenge of socializing their children to develop a self-concept that is in relation to both the host and home cultures. Understanding the socialization mechanisms that may bring about the development of a bicultural self in Chinese immigrant children thus warrants attention.

Various studies have examined parental values upheld by Chinese immigrant parents, which influence the ways parents socialize their children, including self-concept development. In a qualitative study, Chao (1995) found that Chinese immigrant mothers continued to value relational characteristics, such as respecting

and getting along with others, being obedient, and adhering to moral rules. However, they also endorsed the importance of individualist characteristics, such as being independent. In another study, Jose, Huntsinger, Huntsinger, and Liaw (2000) found that Chinese immigrant parents rated collectivist traits such as politeness and neatness as more important to encourage in their children than did European American parents. Nonetheless, they rated individualistic traits such as independence and assertiveness as important to encourage in their children equivalent to such endorsements by European American parents. In fact, Lin and Fu (1990) found that Chinese immigrant parents scored higher on parental control, emphasis on achievement, and encouragement of independence, when compared to European American parents. Collectively, the findings suggest that Chinese immigrant parents continue to uphold the values of culture-of-origin. They are also adopting the host culture values to at least a similar, if not higher, level as European American parents do. Correspondingly, both sets of values and their repertoire of psychological characteristics should be reflected and transmitted during the family reminiscing process, through which Chinese immigrant children can develop a bicultural self.

An important avenue for Chinese immigrant families to engage in family reminiscing is at the dinner table. In line with the cultural emphasis on interdependence, familial connectedness and interactions are highly valued in Chinese families, including Chinese immigrant families (Chao & Tseng, 2002). Dinner is a time where all family members come to spend quality time together. Long conversations often take place at the dinner table so as to find out what happened or will happen to the family and each of the family members in detail. Dinnertime conversations about children's past and future events may thus be an important socialization context for the development of a bicultural self in Chinese immigrant children.

A study of dinnertime conversations

We conducted a study to examine narrative self-making through dinnertime conversations in Chinese immigrant families. To better illustrate the role of family dinnertime conversations in the construction of a cultured self, European American families were used as a comparison group. In line with the literature on narrative self-making through memory conversations, we focused on examining dinner conversations about past events. We utilized Bruner's (1986, 1990) framework of "dual landscapes" to examine narrative self-making. Through the manners in which parents highlighted different pieces of information during memory conversations, we expected that Chinese immigrant parents would socialize their children to develop both an interdependent self and an independent self. Conversely,

we predicted that European American parents would socialize their children to develop an independent self.

Method

Participants

Five Chinese immigrant families from Ithaca, New York, participated in the study. All focus children had lived in the United States since birth, except for one child who lived in the United States since two and half years of age. There were three boys and two girls, with a mean age of 40.6 months. All parents had at least a college education. The comparison group included seven European American families from Ithaca, New York. The focus children included four boys and three girls, with a mean age of 39.4 months. Except for one mother who had a trade school education and two fathers who were high school graduates, all parents had at least a college education. Across all 12 families, the key members involved in dinner-time conversations with the focus child were the parents. Some families had other family members, including grandparents, siblings, and other adults, present at the dinner and took part in conversations. Participation was voluntary. Families were given \$50 for their participation. Children each received a small gift.

Procedure

The study was part of a larger longitudinal project on social-cognitive development across cultures. Families were recruited when the focus child was between the ages of two and half to three and half years, and were followed for a one-year period. Mother-child pairs were first invited to the lab to take part in a series of assessments, including mother-child play, storytelling, book reading, and memory-sharing. After the lab assessment, mothers were provided with audiotapes and were requested to record normal, everyday dinner conversations. Mothers were asked to record one dinner conversation approximately every two months, with a total of six conversations spanning twelve months. Mothers were instructed that these dinner conversations would need to include at least the mother herself and the focus child, and could include any other regular members of the family's dinners. In addition, mothers were told that the dinner conversations were to be conducted in the language that was normally spoken at home, with no time restrictions placed on the length of the conversations. Finally, mothers were asked to mail the audiotapes to the laboratory in the return envelopes provided.

The returned audiotapes were transcribed verbatim. All Chinese immigrant families spoke in Chinese, with one family speaking a mixture of Chinese and English. All European American families spoke in English. Correspondingly, bilingual Chinese-English research assistants transcribed the audiotapes for the Chinese families and English-speaking research assistants transcribed the audiotapes for the European American families. Only the data for the first audiotaped dinner conversations were available for all 12 families. Thus, only the first audiotaped dinner conversations were coded and analyzed.

Coding

Coding focused on parents' contributions to the dinnertime conversations. Bruner's (1986, 1990) "dual landscapes" theoretical framework was used as the basis for developing the coding scheme. All the variables were coded for frequency. This allowed us to examine not only the presence of the narrative codes but also how frequent and thus how important they were in the self-construction process. Information elements, which refer to any nouns, verb phrases, or unique modifiers (Fivush, Hazzard, Sales, Sarfati, & Brown, 2003), were coded into one of the following exclusive and exhaustive categories. For example, "Did you play at the playground today?" was coded for action (play) by child (you), location (playground), and time (today).

Landscape of actions. This category of codes captured new pieces of information parents provided with regards to who, when, where, objects and actions of child and others.

- (1) *People:* The number of people present in each event, not including the child himself/herself.
- (2) *Time:* References to when an event took place, including which day (e.g., yesterday; today) and what time (e.g., this morning; this afternoon).
- (3) *Location:* References to the location that an event took place (e.g., school; church), including specific locations within the general location (e.g., classroom in school; inside the church).
- (4) *Objects:* References to the objects present in an event (e.g., computer; tacos), including the mentioning of animals (e.g., birds; swans).
- (5) *Actions:* References to any actions carried out in an event (e.g., playing; talking). Actions were further categorized into (i) child's actions (e.g., did you sleep at school?) and (ii) others-involved actions, which included actions by child and others (e.g., did we take the pet to the pet store?) and actions by others only (e.g., was Edward jumping around?).

- (6) *Positive behaviors*: References to positive behaviors carried out in an event (e.g., polite; nice). Positive behaviors were further categorized into (i) child's behaviors (e.g., were you polite?) and (ii) others-involved behaviors, which included behaviors by child and others (e.g., were we nice?) and behaviors by others only (e.g., was she nice?).
- (7) *Negative behaviors*: References to negative behaviors carried out in an event (e.g., rude), including getting hurt (e.g., fell from swing). Negative behaviors were further categorized into (i) child's behaviors (e.g., you did not say "good-bye") and (ii) others-involved behaviors, which included behaviors by child and others (e.g., did you and Wendy fight?) and behaviors by others only (e.g., did Brian push David?).
- (8) *Moral and social rules*: References to appropriate behaviors that should be adhered to by the people involved in an event (e.g., you should have told the teachers about it; don't be rude next time).

Landscape of consciousness. This category of codes captured new and repeated pieces of information parents provided with regards to how the child and others thought or felt and the social content of the thoughts and feelings.

- (1) *Internal states*: References to the cognitive, emotional and subjective states of people. Internal states were further categorized into (i) child's internal states (e.g., were *you* happy?) and (ii) others-involved internal states, which included those of child's and others' shared internal states (e.g., we didn't like it, did we?) and others' internal states only (e.g., was *she* angry?). Due to low frequency, the cognitive, emotional and subjective states were counted together as one category.
- (2) *Social contents of internal states*: References to the social content of the cognitive, emotional and subjective states of people. The social contents of internal states were further categorized into (i) involving child only (e.g., were you happy *with yourself*?) and (ii) involving others, which included involving child and others (e.g., you wanted to play with *daddy and mommy*, right?) and others only (e.g., did you think *he* liked doing that?). Due to low frequency, the social content of cognitive, emotional and subjective states were counted together as one category.

The difference between the two codes is that "internal states" captured *whose* thoughts and feelings, whereas "social content of internal states" captured *who* was concerned in the thoughts and feelings. Drawing from an example above, "do you think he liked doing that?" was coded as child's internal state (do you think) with social content involving others (he).

Coding was conducted in the original languages. A Chinese-English bilingual coder coded all the datasets. Another Chinese-English research assistant coded 40% of the Chinese immigrant and European American datasets, respectively, for inter-coder reliability estimates. Repeated discussion sessions were held for disagreements to be resolved. Across the categories of variables, the percentage of agreement ranged from 95% to 100% for the Chinese sample and 83% to 100% for the European American sample.

Results

Table 1 shows the means and standard deviations of the variables studied. Due to the small sample size of the study, inferences were based on effect sizes instead of *p* values as a strategy for avoiding Type II errors (Cohen, 1992). Results of moderate to large effect sizes were reported. According to Cohen (1992), effect sizes of .20, .50 and .80 are considered to be small, medium and large respectively.

Table 1. Means and standard deviations of the variables studied

Variables	Chinese Immigrant M (SD)	European American M (SD)
Length of conversation (in minutes)	40.70 (14.57)	19.27 (4.52)
Number of memories recounted	1.60 (1.82)	1.57 (1.27)
Landscape of actions		
People	2.60 (3.21)	1.29 (1.50)
Time	1.40 (1.52)	1.71 (1.50)
Location	2.40 (2.30)	1.57 (1.51)
Objects	3.00 (2.83)	2.43 (1.90)
Actions: Child	4.20 (4.92)	3.71 (3.20)
Actions: Others-involved	3.00 (3.74)	1.43 (2.15)
Positive behaviors: Child	.00 (.00)	.29 (.76)
Positive behaviors: Others-involved	.20 (.45)	.00 (.00)
Negative behaviors: Child	1.80 (2.49)	.14 (.38)
Negative behaviors: Others-involved	.00 (.00)	.14 (.38)
Moral and social rules	1.20 (1.64)	.71 (1.89)
Landscape of consciousness		
Internal states: Child	2.80 (3.35)	1.14 (1.86)
Internal states: Others-involved	.40 (.55)	.71 (1.50)
Social content of internal states: Involving child	1.40 (1.67)	1.00 (1.53)
Social content of internal states: Involving others	1.80 (3.49)	.14 (.38)

Length of conversation and number of past event recounted

Overall, measured in minutes, Chinese immigrant families had longer dinner conversations than European American families did, $t(10) = 3.18, p < .05, d = .70$. Interestingly, Chinese immigrant and European American families recounted an equal mean number of past events, $t(10) = .03, n.s., d = .00$.

Landscape of actions

Time, location, people, objects. Compared to European American parents, Chinese immigrant parents more frequently mentioned locations of events, $t(10) = .76, n.s., d = .43$ and the people involved, $t(10) = .85, n.s., d = .52$. The effect sizes for time and objects were trivial. Notably, the largest difference observed was in the mentioning of people who were involved.

Actions. Compared to European American parents, Chinese immigrant parents more frequently mentioned others-involved actions, $t(10) = .85, n.s., d = .51$. References to child's actions did not differ between cultures. Within-culture analyses showed that child's actions were more frequently mentioned than others-involved actions by both Chinese immigrant parents, $t(4) = .51, n.s., d = .27$ and European American parents, $t(6) = 1.57, n.s., d = .84$. The within-culture difference in the mentions of child's versus others-involved actions was particularly pronounced in the European American sample.

Positive behaviors. Because the frequencies of responses were too low, this category was no longer considered for further analysis.

Negative behaviors. Compared to European American parents, Chinese immigrant parents more frequently mentioned child's negative behaviors, $t(10) = 1.48, n.s., d = .93$. Both Chinese and European American parents rarely mentioned others-involved negative behaviors. Within culture, Chinese immigrant parents more frequently mentioned child's negative behaviors than others-involved negative behaviors, $t(4) = 1.62, n.s., d = 1.02$. In contrast, European American parents rarely mentioned either child's or others-involved negative behaviors.

Moral and social rules. Chinese immigrant parents more frequently mentioned moral and social rules than did European American parents, $t(10) = .46, n.s., d = .28$.

Landscape of consciousness

Internal states. Surprisingly, Chinese immigrant parents more frequently mentioned child's internal states than did European American parents, $t(10) = 1.10, n.s., d = .61$. Both Chinese immigrant and European American parents rarely mentioned others-involved internal states. Within culture, both Chinese immigrant parents, $t(4) = 1.86, n.s., d = 1.00$, and European American parents,

$t(6) = .47, n.s., d = .25$, mentioned child's internal states more frequently than others-involved internal states.

Social content of internal states. Compared to European American parents, Chinese immigrant parents more frequently mentioned internal states that involved others, $t(10) = 1.06, n.s., d = .77$. Chinese immigrant parents also more frequently mentioned internal states that involved children alone than did European American parents, $t(10) = .42, n.s., d = .25$. In addition, European American parents mentioned more internal states that involved children alone than those that involved others, $t(6) = 1.35, n.s., d = .77$. Chinese immigrant parents made similar numbers of references to internal states involving the child versus others.

The following examples extracted from the data further illustrate the kinds of information Chinese immigrant and European American parents mentioned when recounting past events with children at dinnertime.

Example 1: Chinese immigrant, A day at school

Father: *jin1 tian1 you4 er2 yuan2 de4 xiao3 peng2 you3 duo1 ma1?*
Were there lots of little children at kindergarten today?

Child: *bi3 jiao4 shao3.*
Fewer today.

Father: *jin1 tian1 bi3 jiao4 shao3 shi4 ma1?*
Fewer today, is it?

Child: *dui4...*
Yes...

Father: *Mimi dou1 mei2 qu4 shi4 bu4 shi4?*
Mimi didn't go, right?

Child: *dui4.*
Right.

Mother: *jin1 tian1 xing1 qi1 er4 ya0, xing1 qi1 er4 Mimi jiu4 bu4 shang4 xue2.*
Today is Tuesday. Tuesday, Mimi do qesn't go to school.

Child: Yeah.
.....

Mother: *ni2 you3 mei2 you3 yi4 dian3 xiang3 Mimi a1?*
Did you miss Mimi a little bit?

Child: ...

Mother: *you3 mei2 you3 yi4 dian3 xiang3 Mimi?*
Did you miss Mimi a little bit?

Child: *you3 yi4 dian3.*
A little bit.

Father and Mother: (Laughs)

In the above example, Chinese immigrant parents were reminiscing with their child about a day at school. The conversation started off with orienting information on when and where the child was. Notably, the parents focused on asking about social others, i.e., child's peers at school in general and one friend specifically. Furthermore, the mother asked about the child's thought ("did you miss...") involving the friend, not once, but twice.

Example 2: Chinese immigrant, Misbehaving when visiting an aunt

Mother: Bao Bao *jin1 tian1 you3 mei2 you3 gen1 ba4 ba0 jiang3 ni3 fan4 de4 cuo4 wu4?*

Bao Bao, did you tell Papa what you did wrong today?

...

Mother: *ni3 zai4 a0 yi2 jia1 zen3 me4 le0?*

What happened to you at Aunt's house?

Child: Bao Bao *bu4 jin4 qu4.*

Bao Bao didn't go in.

Mother: *zai4 men2 kou3 bu4 jin4 qu4. ran2 hou4 ne0?*

Stay at the door and didn't go in. And then?

Child: *bu4 wan2.*

Didn't play...

Mother: *bu4 gen1 Edward wan2. hai2 you3 ne0?*

Didn't play with Edward... What else?

Child: *zai4 lou2 ti1 bu4 shuo1* "bye-bye".

At staircase, didn't say "bye-bye"

Mother: Hmm...

Child: *men2 mei2 you3 guan1 hao3.*

Didn't close door properly.

...

Father: *ba4 ba0 yi3 jing1 dou1 zhi1 dao4. xia4 ci4 jiu4 hui4 bian4 hao3 yi4 dian3 shi4 bu4 shi4?*

Papa already knows everything. Next time [Bao Bao] will change and be a bit better, right?

Mother: *xia4 ci4 jiu4 bu4 fan4 cuo4 wu4.*

Next time don't make mistakes.

In this example, the Chinese immigrant mother focused on recounting her child's negative behaviors when visiting an aunt and her son during the day. Specifically, the mother wanted the child to tell his father how socially inappropriate he was during the visit. In fact, the child's social misbehaviors were highlighted one by one in specific detail. Finally, both parents reminded the child that those social

misbehaviors should not be repeated in the future. Again, orienting information, including two other people, was mentioned.

Example 3: Chinese immigrant, A day at the park

Mother: ... *ni3 jin1 tian1 zai4 gong1 yuan2 li3 wan2 shen3 me0 le0?*
... What did you play at the park today?

Child: *pa2 shan1 le0.*
Climb the hill.

Mother: *pa2 shan1 le0?*
Climb the hill?

Child: *en0.*
Yeah.

Mother: *dang4 qiu1 qian1 le0 mei2 you3?*
Play on the swing?

Child: *en0.*
Yeah.

Mother: *hai2 you3 ne0? Hai2 wan2 shen3 me0 ne0? qu4 kan4 ya1 zi3 le4 mei2 you3?*
What else? What else did you play? Did you go see the ducks?

Child: *en0.*
Yep.

Mother: *kan4 dao4 tian1 er2 le4 mei2 you3?*
Did you see the swans?

Child: *en0.*
Yep.

Mother: *kan4 tian1 er2 le4. hao3 a4.*
You saw the swans. That's good!

Child: *wo3 shuai1 le4 yi4 jiao1.*
I had a fall.

Mother: *ni3 shuai1 le4 yi4 jiao1? wei4 shen3 me0 hui4 shuai1 le4 yi4 jiao1? zen3 me4 shuai1 le4 yi4 jiao1?*
You had a fall? Why did you fall? How come you fell?

Child: *cong2... diao4 xia4 lai2 le4.*
I fell from...

Mother: *cong2 na3 er2 diao4 xia4 lai2 le4?*
Where did you fall from?

Child: *cong2 cao3 di4 shang4 diao4 xia4 lai2 le4.*
I fell from the grass.

Mother: *cong2 na3 er2 diao4 xia4 lai2 le4? cong2 na3 gei4 hua2 ti1 shang4 diao4 xia4 lai2 le4?*

Where did you fall down from? From which slide did you fall down from?

Child: *en0.*
Yep.

Mother: *cong2 hua2 ti1 shang4 diao4 xia4 lai2 le4?*
You fell down from the slide?

Child: *en0.*
Yep.

Mother: *teng2 bu4 teng2?*
Was it painful?

Child: *teng2.*
Painful.

Mother: *teng2? ni3 ku1 le4 mei2 you3?*
Painful? Did you cry?

Child: *ku1 le4.*
I cried.

Mother: *ku1 le4? na4 ni3 yi3 hou4 xiao3 xin1 yi4 dian3, hao3 bu4 hao3?*
You cried? You need to be more careful next time, ok?

Child: *hao3.*
Ok.

This example shows that the Chinese immigrant mother was focusing on her child's actions, i.e., what the child did when they were at the park during the day. Each piece of information was child-centered. Furthermore, the mother also asked about the child's own emotion ("did you cry"). Orienting information and various objects were mentioned.

Example 4: European American, Playing on the computer

Mother: Did you play on the computer today?

Child: Yea, I played Catch Fish.

Mother: Did you? Did you catch fish?

Child: Yep.

Mother: Really?

Child: Yea, I caught a big fish.

Mother: How big was it?

Child: This long, it was this long.

Mother: No way, that's huge!

Not surprisingly, child-centered conversation is also observed in European American families, as is shown in the above example. The European American mother was focusing on what the child did during the day.

Example 5: European American, Visiting the vet

Mother: ... Did you walk the dog?

...

Father: Did you tell Mommy where we took the puppy today?

Child: No.

Father: Where did we take the puppy?

Child: Petpet.

Father: Petpet.

Mother: To the Petpet? And was the Petpet nice? Did you all go in?

Child: Yup...

Mother: It was great? Did he whimper or cry? He didn't?

Child: Nope.

Mother: Did you whimper or cry when you saw the puppy getting a shot?

Child: Uh-uh.

Mother: No?

In the above example, although the European American parents were recounting an event that the father and child experienced together, the mother was focusing on the child's subjective opinions and emotions. While the subjective opinion concerned whether the venue was nice, the emotion referred to was the child's own emotional state. Orienting information and various objects were also mentioned.

Discussion

Dinnertime as a socialization context for narrative self-making

Dinnertime appears to be an important socialization context for narrative self-making in Chinese immigrant families. Extant literature has shown that Chinese immigrant mother-child memory conversations are shorter than European American mother-child memory conversations (Wang, 2007). However, family dinner conversations are lengthier in Chinese immigrant than in European American families. In accordance with the Chinese cultural emphasis on interdependence, whereby familial connectedness and interactions are highly valued (Chao & Tseng, 2002), dinner is the time of the day where all family members can spend quality time together. Long conversations often take place at the dinner table, so as to allow for interactions and find out what happened or will happen to

the family and each of the family members. From the very fact of the greater amount of time spent interacting and conversing at the dinner table, Chinese immigrant families are socializing their children towards the development of an interdependent self that is intimately connected with the family. Conversely, the European American culture places emphasis on independence. Collective-oriented activities, such as engaging in lengthy dinnertime interactions and conversations, would not be congruent with the value of independence. Rather, European American families may be more concerned with independent activities that would take place after dinner, such as a cartoon video that a child could watch or playing outside. This is a form of socialization that is tilted towards socializing the development of an independent self.

Furthermore, past research has found that the average number of past events recounted in one full day of mother-child conversations is three times fewer in Asian than in European American families (Mullen & Yi, 1995). However, the Chinese immigrant families in this study did not recount fewer past events than did the European American families. Although there are many differences between this study and the former one, possibly the context was key; that is, Chinese immigrant parents seem to make use of the opportunity space of dinnertime to engage in recounting past events with their children. In other words, dinnertime seemingly functions as an important socialization context for Chinese immigrant parents to engage in narrative self-making with their children.

Dinner conversations and socialization of bicultural self in Chinese immigrant families

What exactly do Chinese immigrant families talk about? In line with the culture-of-origin and host culture values upheld by Chinese immigrant parents (Chao, 1995; Jose et al., 2000; Lin & Fu, 1990), they mention different pieces of information reflecting the “dual landscapes” (Bruner, 1986, 1990) in ways that collectively would socialize their children towards the development of a bicultural self.

Within the landscape of actions, Chinese immigrant parents more frequently mentioned where the events were held and the people involved than did European American parents. Furthermore, Chinese immigrant parents mentioned about as often when the events took place and the object present as did European American parents. These are important orienting (i.e., when, where, and who) and referential (i.e., objects) information for children to remember what they did, when and where they did it, with whom and what objects were involved. Bruner (1986, 1990) has regarded such information as pertinent to the narrative self-making process. Notably, the largest cross-cultural difference was observed in the mention of people involved. This finding reflects the salient emphasis Chinese immigrant parents place on information regarding others and their presence in the children's lives.

Recounting what the children did during the day in relation to other people suggests that other people are an integral part of the constructed social realities of Chinese immigrant children. And as Chinese immigrant parents talk about other people during memory conversations with their children, they are socializing children towards the development of an interdependent self.

In a similar vein, Chinese immigrant parents more frequently mentioned others-involved actions than did European American parents. Yet interestingly, Chinese immigrant parents mentioned about as often the child's actions as did European American parents. In fact, both Chinese immigrant and European American parents more frequently mentioned the child's actions than others-involved actions. In other words, parents in both groups focused on the individual child during past event discussions. Taken together, it appears that, on the one hand, Chinese immigrant parents are drawing their children's attention towards social activities and interactions to facilitate an interdependent self, and on the other hand, they are attuned to the individual child to encourage an independent self.

Although Chinese immigrant parents may adopt the European American cultural emphasis on individuality and independence (Chao, 1995; Jose et al., 2000; Lin & Fu, 1990), they continue to uphold Chinese cultural values and have high expectations of proper behavior in children. When recounting past events at the dinner table, they mentioned more negative behaviors performed by children than did European American parents. Negative behaviors were not simply condoned but instead highlighted for children so as to allow for correction of those behaviors. Correspondingly, Chinese immigrant parents were also more likely to bring up moral and social rules than their European American counterparts, so as to teach and remind children of expected behavior. Chinese immigrant parents also tended to focus on their own child's behaviors rather than other children's behaviors because of parents' duty to discipline their own child. As Chinese immigrant parents focus on instilling proper behaviors during past events discussions, they are socializing their children towards the development of an interdependent self that conforms to social norms.

Within the landscape of consciousness, not unlike European American parents, Chinese immigrant parents mentioned more the child's internal states than others-involved internal states. Indeed, Chinese immigrant parents even mentioned more internal states of their children than did European American parents. It appears that Chinese immigrant parents are concerned about their children's own opinions, preferences, thoughts and feelings – an expression of the independent self. However, these findings are in contrary to prior findings in the context of mother-child memory-sharing, where European American mothers and children make more references to internal states than do Chinese immigrant mothers

and children (Wang et al., 2010). One possible reason for the differences lies in the context of talking about the past. Dinnertime interactions and conversations are collective-oriented activities that Chinese immigrant families more typically participate in, compared with out-of-context memory conversations. As a result, immigrant parents may be more comfortable talking about their children's thoughts and feelings at dinnertime.

Although both Chinese immigrant and European American parents are concerned with how their children think and feel with regards to past events that they experienced, who was/were involved in the thoughts and feelings discussed (i.e., social content of internal states) differed. Chinese immigrant parents more frequently mentioned thoughts and feelings that involved others than did European American parents. Chinese immigrant parents also more frequently mentioned thoughts and feelings that involved children themselves than did European American parents. In fact, Chinese immigrant parents mentioned thoughts and feelings that involved children and others equally frequently. These findings suggest that Chinese immigrant parents encouraged not only thoughts and feelings concerning others but also the children themselves. In doing so, they are socializing their children towards the development of both an independent and an interdependent self.

Dinner conversations and socialization of independent self in European American families

Not unlike mother-child memory conversations (Wang, 2006, 2007; Wang & Fivush, 2005; Wang et al., 2000), European American parents engaged in dinner-time conversations that socialize their children towards the development of an independent self. This is reflected in the different pieces of information mentioned pertaining to the "dual landscapes" (Bruner, 1986, 1990). Within the landscape of actions, European American parents mentioned orienting (i.e., when, where, and who) and referential (i.e., objects) information that is instrumental to the narrative self-making process (Bruner, 1986, 1990). Furthermore, they mentioned information that focused on the child's actions. More often than not, negative behaviors were ignored. And moral and social rules were slightly less common during past event discussions as they were in Chinese immigrant families. As suggested by the literature, European American parents often downplay children's transgressions to protect their self-esteem (Miller et al., 2007, 2012). Importantly, within the landscape of consciousness, European American parents were concerned with how their children thought and felt with regards to the past events that they experienced, especially thoughts and feelings involving themselves (rather than involving child and others or others).

Conclusion, limitations and future directions

Our analyses have revealed that as a normal everyday activity, dinnertime is a natural space for parents to share personal stories with their children. This space appears to be utilized to a different extent and for somewhat varied purposes by parents in different cultures. In the process of sharing personal stories of the past, specifically, by recounting information about when and where the events took place, who and what were involved, the actions and internal states of children and others in manners that align with cultural norms and expectations, parents socialize their children to develop a sense of self that is adaptive for the respective cultural environments.

Although our analyses yielded important empirical evidence on the socialization of the self during dinner conversations in Chinese immigrant and European American families, there are limitations. We only analyzed parents' utterances and not children's. We recognized that children's own utterances may better reflect narrative self-making. However, children's responses in these conversations were generally infrequent and therefore may not result in meaningful analysis. Future studies may increase the number of dinner conversations to be examined per family and with a larger sample to reliably measure children's responses. Another caveat is the small sample size. Future studies with larger samples would need to be conducted to corroborate the current findings. In addition, the present study did not include outcome measures, such as children's own self-concepts, to ascertain the socialization effects of the memory conversations at dinnertime. Future studies may strengthen the design by including relevant outcome measures.

Building on extant work, future studies can examine other aspects of the opportunity space of dinnertime that may influence self-development. For example, studying dinnertime conversations that focus on future events may shed light on future self-development. Besides the conversational aspects, examining dinner-time interactions between parents and children may also bring about further knowledge on self-construction in children.

Acknowledgements

We thank Kiran Sunkavalli, Rachel Hutt, Tiffany Isay Bo Zhao and Yan Zhang for their assistance.

References

- Bird, A., & Reese, E. (2006). Emotional reminiscing and the development of an autobiographical self. *Developmental Psychology, 42*, 613–626.
- Bohanek, J. G., Marin, K. A., & Fivush, R. (2008). Family narratives, self, and gender in early adolescence. *Journal of Early Adolescence, 28*, 153–176.
- Bohanek, J. G., Marin, K. A., Fivush, R., & Duke, M. P. (2006). Family narrative interaction and children's sense of self. *Family Process, 45*, 39–54.
- Bruner, J. (1986). *Actual minds, possible world*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Chao, R. K. (1995). Chinese and European American cultural models of the self reflected in mother's childrearing beliefs. *Ethos, 23*, 328–354.
- Chao, R. K., & Tseng, V. (2002). Parenting of Asians. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 4, Social conditions and applied parenting* (2nd ed., pp. 59–93). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159.
- Fivush, R., & Haden, C. A. (2005). Parent-child reminiscing and the construction of a subjective self. In B. Homer & C. S. Tamis-Lemonda (Eds.), *The development of social cognition and communication* (pp. 315–335). Mahwah, NJ: Lawrence Erlbaum Associates.
- Fivush, R., Haden, C., & Reese, E. (2006). Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development, 77*, 1568–1588.
- Fivush, R., Hazzard, A., Sales, J. M., Sarfati, D., & Brown, T. (2003). Creating coherence out of chaos? Children's narratives of emotionally positive and negative events. *Applied Cognitive Psychology, 17*, 1–19.
- Fivush, R., & Nelson, K. (2004). Culture and language in the emergence of autobiographical memory. *Psychological Science, 15*, 573–577.
- Fivush, R., & Nelson, K. (2006). Mother-child talk about the past locates the self in time. *British Journal of Developmental Psychology, 24*, 235–251.
- Han, J. J., Leichtman, M. D., & Wang, Q. (1998). Autobiographical memory in Korean, Chinese, and American children. *Developmental Psychology, 34*, 701–713.
- Hart, D., & Edelstein, W. (1992). Self-understanding development in cross-cultural perspective. In T. M. Brinthaupt & R. P. Lipka (Eds.), *The self: Definitional and methodological issues* (pp. 291–322). New York, NY: State University of New York Press.
- Jose, P. E., Huntsinger, C. S., Huntsinger, P. R., & Liaw, F. (2000). Parental values and practices relevant to young children's social development in Taiwan and the United States. *Journal of Cross-Cultural Psychology, 31*, 677–702.
- Kagitcibasi, C. (2007). *Family, self, and human development across cultures: Theories and applications*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kagitcibasi, C. (2012). Sociocultural change and integrative syntheses in human development: Autonomous-related self and social-cognitive competence. *Child Development Perspectives, 6*, 5–11.
- Koh, J. B. K., Shao, Y., & Wang, Q. (2009). Father, mother, and me: Parental value orientations and child self-identity in Asian American immigrants. *Sex Roles, 60*, 600–610.
- Lin, C. Y. C., & Fu, V. R. (1990). A comparison of child-rearing practices among Chinese, immigrant Chinese and Caucasian American parents. *Child Development, 61*, 429–433.

- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- McLean, K. C. (2005). Late adolescent identity development: Narrative meaning making and memory telling. *Developmental Psychology*, 41, 683–691.
- McLean, K. C., Pasupathi, M., & Pals, J. L. (2007). Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review*, 11, 262–278.
- Miller, P. J., Fung, H., & Koven, M. (2007). Narrative reverberations: How participation in narrative practices co-creates persons and cultures. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 595–614). New York, NY: Guilford Press.
- Miller, P. J., Fung, H., Lin, S., Chen, E. C., & Boldt, B. R. (2012). How socialization happens at the ground: Narrative practices as alternate socializing pathways in Taiwanese and European-American families. *Monographs of the Society for Research in Child Development*, 77, 1–140.
- Miller, P. J., & Moore, M. B. (1989). Narrative conjunctions of caregiver and child: A comparative perspective on socialization through stories. *Ethos*, 17, 428–449.
- Mullen, M. K., & Yi, S. (1995). The cultural context of talk about the past: Implications for the development of autobiographical memory. *Cognitive Development*, 10, 407–419.
- Nelson, K. (2000). Narrative, time and the emergence of the encultured self. *Culture & Psychology*, 6, 183–196.
- Nelson, K. (2001). Language and the self: From the ‘Experiencing I’ to the ‘Continuing Me’. In C. Moore & K. Lemmon (Eds.), *The self in time: Developmental perspectives* (pp. 15–33). Mahwah, NJ: Lawrence Erlbaum Associates.
- Nelson, K., & Fivush, R. (2004). The emergence of autobiographical memory: A social cultural developmental theory. *Psychological Review*, 111, 486–511.
- Ochs, E., Smith, R., & Taylor, C. (1989). Detective stories at dinnertime: Problem-solving through co-narration. *Cultural Dynamics*, 2, 238–257.
- Ochs, E., Taylor, C., Rudolph, D., & Smith, R. (1992). Storytelling as a theory-building activity. *Discourse Processes*, 15, 37–72.
- Polkinghorne, D. E. (1988). *Narrative knowing and the human sciences*. Albany, NY: State University of New York Press.
- Reese, E., Bird, A., & Tripp, G. (2007). Children’s self-esteem and moral self: Links to parent-child conversations. *Social Development*, 16, 460–478.
- Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.
- Wang, Q. (2001). “Did you have fun?”: American and Chinese mother-child conversations about shared emotional experiences. *Cognitive Development*, 16, 693–715.
- Wang, Q. (2004). The emergence of cultural self-constructs: Autobiographical memory and self-description in European American and Chinese children. *Developmental Psychology*, 40, 3–15.
- Wang, Q. (2006). Culture and the development of self-knowledge. *Current Directions in Psychological Science*, 15, 182–187.
- Wang, Q. (2007). “Remember when you got the big, big bulldozer?” Mother-child reminiscing over time and across cultures. *Social Cognition*, 25, 455–471.
- Wang, Q. (2012, December). Chinese socialization and emotion talk between mothers and children in native and immigrant Chinese families. *Asian American Journal of Psychology*. Advance online publication. doi: 10.1037/a0030868
- Wang, Q., Doan, S. N., & Song, Q-F. (2010). Talking about internal states in mother-child reminiscing influences children’s self-representations: A cross-cultural study. *Cognitive Development*, 25, 380–393.

- Wang, Q., & Fivush, R. (2005). Mother-child conversations of emotionally salient events: Exploring the functions of emotional reminiscing in European American and Chinese Families. *Social Development, 14*, 473–495.
- Wang, Q., Leichtman, M. D., & Davies, K. I. (2000). Sharing memories and telling stories: American and Chinese mothers and their 3-year-olds. *Memory, 8*, 159–177.
- Welch-Ross, M. K., Fasig, L. G., & Farrar, M. J. (1999). Predictors of preschoolers' self-knowledge: Reference to emotion and mental states in mother-child conversation about past events. *Cognitive Development, 14*, 401–422.

Evaluation in Mandarin Chinese children's personal narratives

Chien-ju Chang and Allyssa McCabe

Evaluation is a critical component of personal narrative, the component that conveys to listeners how narrators feel about experiences that happened to them. Evaluation conveys the impact of what actually did happen in the context of what narrators expected would happen but did not or what they wished had happened instead. This chapter presents a study of how Taiwanese children develop the ability to evaluate their narratives and a comparison of Taiwanese to English-speaking children in their use of evaluative devices. Prior research (Minami, 1994; Minami & McCabe, 1995) suggests that English-speaking mothers provide more evaluation comments in telling past experiences with their children compared to Japanese-speaking mothers. Differences in use of evaluative devices were hypothesized to be evident across Chinese- and English-speaking children in their personally experienced stories.

Mandarin Chinese-speaking children from Taiwan (N = 171) and 96 English-speaking children from the United States participated in this study. Chinese-speaking children were aged 3 to 9 years and comprised seven groups (at each of those ages). English-speaking, American children were aged 4 to 9 years and comprised six groups. Following Peterson and McCabe's conversational map (1983), the experimenter elicited a number of personal narratives from each child. Specific prompted topics such as visit to a doctor were given in conversation. The purpose of this task was to assess children's narrative skill without adult's support; neutral follow-up responses such as "uh-huh," "tell me more" were used. Evaluation was coded in Chinese using an adaptation of the system Peterson & McCabe (1983) developed to code evaluation in English-speaking American children aged four through nine years. The percentage of each type of evaluative device per narrative comment was determined and Taiwanese children were compared in this way to American children from the Peterson & McCabe corpus. Results show that Taiwanese children included many fewer evaluation comments (13–25% of the children's clauses were partially or fully evaluative) in telling their personally experienced stories compared to American children (50% at each age). Results are interpreted as reflecting deep and pervasive cultural differences: Chinese children are

socialized to have an interdependent self (with less emphasis on what an individual felt in the past), while American children are socialized to have an independent self (with early and frequent emphasis on what an individual felt in the past).

Keywords: narrative, Chinese, American, evaluation, children

Introduction

Evaluation in personal narratives

Development of extended discourse is the most notable aspect of language acquisition during the preschool and early school years (Karmiloff-Smith, 1986). Among forms of extended discourse, a very common and also universal one is the narrative (Bruner, 1986; Karmiloff-Smith, 1986). Children's narrative competence represents not only an aspect of language skill, but also reflects how children make sense of the world and is closely related to literacy achievement (Bruner, 1990; Nelson, 1986; Snow & Dickinson, 1991; Snow, Porche, Tabors, & Ross-Harris, 2007).

To tell good, interesting stories, children need the ability to provide the listeners not only information about who and what is involved in the experience and where and when the event occurs but also the significance of the narrated event to them. These are the two important functions of narratives pointed out by Labov, i.e., reference and evaluation (Labov, 1972). Reference conveys information about events and their setting; through use of evaluation strategies, children reveal their attitude and feelings towards the reported events. Various types of evaluation devices were documented in prior research, ranging from linguistic devices such as intensifiers or delimiters (e.g., very or a little), compulsion words (e.g., have to), similes or metaphors (e.g., he ran away so fast as wind), etc., to paralinguistic or performative devices such as elongation (e.g., loong time ago), phonological stresses, prosodic features, and gestures, etc. (Peterson & McCabe, 1983; Reilly, 1992; Sah, 2011; Wolf, Moreton, & Camp, 1994). Preece pointed out that personal narrative is the genre that occurs most frequently in preschoolers' conversation (1987). Other researchers (Labov, 1972; Miller & Sperry, 1988; Peterson & McCabe, 1983) also indicated that evaluation skill is best reflected in personal narratives. The focus of this chapter is on the development of evaluation devices in children's personal narratives in Mandarin Chinese-speaking children.

Development of evaluation strategies

Providing evaluative comments in conversation is an early emerging ability. According to prior research, English-speaking children as young as two and half have the ability to convey the meaning of the reported experience (Miller & Sperry, 1988). To develop good control of evaluation devices, however, takes time.

Peterson and McCabe (1983) collected personal narratives of children aged 4 to 9 years in the United States. They found that half of the clauses in children's personal narratives were fully or partially evaluative and identified twenty-three types of evaluation devices from their data. Among the twenty-three types of evaluative devices they isolated, gratuitous terms, stressors, negative comments, compulsion words and causal explanations were the ones frequently used by their children. Facts per se, exaggeration and fantasy, words per se, similes and metaphors, objective judgments and tangential information, on the other hand, seldom occurred in their children's narratives.

No significant age effect in the proportion of evaluative comments was observed in Peterson and McCabe's study, but they did find significant age differences in the variety of evaluation. On average, the youngest group and the older ones used about ten and fifteen different types of evaluations, respectively, in their stories. Moreover, an age effect was observed in several types of evaluation devices. In general, compared to the older groups, younger children used significantly more repetitions and stressors but significantly fewer words per se, facts per se, results of high point actions, and tangential information in their narration. An age effect in use of evaluation devices was also observed in studies by, for example, Bamberg and Damrad-Frye (1991), Berman and Slobin (1994), Reilly (1992), Shiro (2003), and Uccelli (2008).

Studies of development of evaluation in Mandarin Chinese speaking-children's narratives are sparse. Applying short-term longitudinal research design, both Chang (2004) and Sah (2007) observed that the amount and variety of evaluation devices in children grew from 3;6 to 4;3 (Chang's study) and from 5;5 to 5; 11 (Sah's study). Similar findings were gained from cross-sectional studies of Chang (2001) and Huang (2002); both found growth of use of evaluation strategies in older children's narratives.

Sah (2011) focused on age differences in the use of emotion expressions or frames of mind and knowledge of story structure in five-, nine-year-olds and adults in telling the wordless picture book, *Frog, where are you*. She found an age effect in density of emotion expression. Adults used emotion expressions significantly more than five- and nine-year-olds. A significant age difference was also observed between the five- and nine-year-old children. In Chang's study of

evaluation development in children aged four to seven years (2001), frames of mind was the only strategy that increased with age.

The above-mentioned research on narratives of Mandarin Chinese-speaking children is limited either in the age range of subjects recorded or the period of time for observation. The picture of development of evaluation strategies in Mandarin Chinese-speaking children is still not clear and complete. The study conducted by Huang (2002) was the only one that examined narrative development of children across a larger age range, i.e., ages 3 to 12 years. The number of children in her study in each age group (age 3–4, age 5–6, age 7–8, and age 9–12), however, was only 10, and her study focused on use of evaluation in narration of a series of wordless picture cards, not in personally experienced stories. Prior research has documented differences in use of evaluation strategies across narrative genre (Chang, 2001; Chang, 2008; Sah, 2007). For example, Chang (2008) found that proportions of evaluation were significantly higher in fantasy narratives than those in personal narratives or scripts. Also, as noted, children's ability to use evaluation devices can better be reflected in their personal narratives (Labov, 1981; Peterson & McCabe, 1983; Miller & Sperry, 1988). It is hence important to explore how children develop evaluation strategies in telling their stories of personal experience.

Research on the development of evaluation devices in English-speaking children's personal narratives is fruitful. To date, however, there has been no study focusing on the evaluative devices in Mandarin-speaking children's personal narratives. Since the cultural and linguistic background of Mandarin Chinese-speaking children is different from that of English-speaking children, it is important to explore what kinds of evaluative information Mandarin Chinese-speaking children include in their personally experienced stories and how these evaluative strategies may differ from those used by English-speaking children.

Research questions

Two research questions were posed in this study:

1. What evaluation devices do Mandarin Chinese-speaking children aged from three to nine use in narrating their personal experience stories? Are there age differences in the use of evaluation devices?
2. To what extent do Mandarin Chinese-speaking children in Taiwan differ from English-speaking children in the US in the use of evaluation devices in narrating their personal experience stories?

In order to understand similarities and differences in use of evaluation in Mandarin Chinese-speaking children's personal narratives across American children, we applied the method used by Peterson and McCabe (1983) to elicit personal narratives and to analyze the data.

Method

Participants

One hundred and seventy-one Mandarin Chinese-speaking children from Taiwan and ninety-six English-speaking children from the United States participated in this study. The mean ages of the Chinese-speaking children were 3;9 (N = 41), 4;4 (N = 21), 5;4 (N = 21), 6;8 (N = 20), 7;5 (N = 23), 8;5 (N = 22) and 9;4 (N = 23). Parents or primary caregivers of the Chinese-speaking children were high school or college graduates. They were recruited from three preschools (group of age 3), one primary school (groups of children aged 6–9), and the affiliated kindergarten of the primary school (groups of children aged 4–5) in New Taipei City, Taiwan.

In order to understand how evaluation devices used by Mandarin Chinese-speaking children differ from English-speaking children, six groups of children's personal narratives collected by Peterson and McCabe (1983) were selected for comparison. There were 16 children in each age group in their study, and the children's mean ages were 4;1, 5;1, 6;0, 7;0, 8;0, and 9;0 respectively. They were predominantly working class children chosen from a nursery school and an elementary school in Ohio, America. Table 1 summarizes the subjects' characteristics in terms of age and gender.

Table 1. Mean age and gender of subjects: Taiwan & US

Country	Taiwan				US			
	Mean age	N	Male	Female	Mean age	N	Male	Female
3	3;9	41	17	24	NA	NA	NA	NA
4	4;4	21	12	9	4;1	16	8	8
5	5;4	21	12	9	5;1	16	8	8
6/Grade 1	6;8	20	10	10	6;0	16	8	8
7/Grade 2	7;5	23	10	13	7;0	16	8	8
8/Grade 3	8;5	22	9	13	8;0	16	8	8
9/Grade 4	9;4	23	14	9	9;0	16	8	8

Procedures and Data Collection

Following Peterson and McCabe's conversational map (1983), the experimenter interviewed and elicited a number of personal narratives from each child. The interview was audio- and video-recorded. Specific prompted topics such as a visit to a doctor, spilling, injury, fights, travel, and a frightening experience were embedded in conversation with each child. The purpose of this task was to assess children's narrative skill without an adult's asking specific questions or otherwise directly scaffolding the children; neutral responses such as "uh-huh," and "tell me more" were hence given to the child during conversation. An example of a narrative prompt follows:

"Do you know what this is (show child a toy syringe)? Auntie had a stomach-ache yesterday and I went to see a doctor. The doctor gave me a shot. Have you ever been to a doctor's office?" If the child said "yes," the experimenter kept asking, "I want to know if you remember what happened when you visited a doctor's office. Please tell me what happened when you saw a doctor." If the child said "no," the experimenter asked if such an experience happened to his mother, father, siblings, friends, etc.

Transcription

The collected narratives were transcribed by one assistant verbatim using the codes for the Human Analysis of Transcripts (CHAT) of the Child Language Data Exchange System (CHILDES) (MacWhinney, 2000; MacWhinney & Snow, 1985). All of the transcription was verified by another assistant who was familiar with CHAT format and passed the CHECK program of the CHILDES.

Coding system

Using an adaptation of the coding system developed by Peterson & McCabe (1983), the present study categorized occurrences of evaluation devices in the three longest narratives produced by Mandarin Chinese-speaking children. Twenty-two types of evaluation devices were coded at the clause level. A single clause may contain numerous types of evaluations.

Among the twenty-two types of evaluation devices, three of them¹, i.e., elongators (such as 'we had to stay a loooooong time'), attention-getters (such as 'you know what?'), and facts per se (such as 'I caught the biggest fish') were not found

1. Examples of the three codes were taken from Peterson & McCabe's corpus (1983, p.222-224).

in narratives produced by Mandarin Chinese-speaking children. The other nineteen types of evaluative devices were described as one of the following (note that evaluation was coded in clauses that were fully devoted to that function, as well as in clauses that were only partially so):

1. Onomatopoeia: i.e., *wang5wang5* ('bark bark'), *miao1miao1* ('meow meow')
2. Stressors: a marked emphasis in voice, i.e., *shi4 zhen1 de5* ('It is true!')
3. Exclamations: i.e., *ta1 xia4 dao4 le5!* ('He was frightened!')
4. Repetitions: repetitions for effect, i.e., *ran2hou4 wo3 jiu4 yi1zhi2 ku1 yi1zhi2 ku1* ('Then I kept crying kept crying.')
5. Compulsion words: i.e., *wo3 zhi3hao3 hui2 jia1*. ('I had to go home.')
6. Similes and metaphors, i.e., *wo3 chi1 de5 man3 lian3 dou1 shi4 ge4 da4 hua-1mao1*. ('I ate and all of my face was a mess, as a big Siamese cat.')
7. Gratuitous terms: i.e., *ran2hou4 ta1 hen3 da4 sheng1 jiao4*. ('Then he cried very loudly.')
8. Words per se: including adjectives, adverbs, verbs, nouns, exclamations that are evaluative themselves, i.e., *wo3 ji2mang2 pao3 hui2 jia1*. ('I ran back home in a hurry.')
9. Exaggeration and fantasy: i.e., *wo3 bei4 xia4 si3 le5*. ('I was frightened to death.')
10. Negatives: explicit negations or defeated expectations, i.e., *wo3 mei2you3 ku1 ei5*. ('I did not cry.')
11. Intentions or desires: i.e., *di4di4 xiang3 kan4*. ('Brother wanted to watch.')
12. Hypotheses or inferences: i.e., *yao4bu4ran2 wo3 ba4 de5 tui3 da4gai4 shi4 zou3 bu4 liao3 de5*. ('otherwise my father's legs probably won't work.')
13. Results of the high point: e.g., *yin3liao4 jiu4 gun3 gun3 bao4 kai1, na4 dong1xi1 dou1 pao3 chul1ai2, ran2hou4 wo3 jiu4 na2 mo3pu4 yi1zhi2 ca1 yi1zhi2 ca1*. ('The drink rolled and rolled and then burst. Something came out. Then I kept wiping and wiping using a wiper.')
14. Causal explanations: i.e., *ran2hou4 wo3 jiu4 jiao4 tong4 yin1wei4 yi1fu2 tang4 dao4 wo3*. ('Then I cried hurt because the clothes burned me.')
15. Judgments (objective and subjective judgments): i.e., *ta1 jiu4 hen3 tan1xin1 jiu4 ba3 xiang4pi2 shou1 qi3lai2 le5*. ('Then he was greedy and he took the eraser.')
16. Descriptions of internal emotional states: i.e., *wo3 hen3 gao1xing4*. ('I was happy.')
17. Tangential information: information relevant to the narrative ('She gave me ten dollars for going in there. Ten dollars is a lot of money when you're little².')

2. Example of this code was taken from Peterson & McCabe's corpus (1983, p.222-224).

18. Physical condition: i.e., *wo3 du4zi5 tong4*. ('I got stomach.')
19. Idioms: Chinese idioms, proverbs, slangs, i.e., *jie3jie3 dou1 shou4shang1 le5 ni3 hai2zai4 xing4zai1le4huo4*. ('Sister got hurt but you still gloated over this')

Two types of evaluation strategies, i.e., physical conditions and idioms, were newly developed codes only for Chinese-speaking children.

Reliability of coding

In order to test reliability of evaluation coding, twenty percent of the narrative transcripts were randomly selected and coded by another research assistant majoring in child language and education to compute Cohen's Kappa statistic. The inter-rater corrected-for-chance agreement was 94%.

Data analysis

Transcripts of the children's narratives were coded and then analyzed using the CLAN programs of the Child Language Data Exchange System (MacWhinney, 2000; MacWhinney & Snow, 1985). In order to answer the research questions posed in this study, descriptive, ANOVA and principal component analyses were used to capture the developmental features in use of evaluation devices in personal narratives produced by Mandarin Chinese-speaking children across different ages. Descriptive data in percentage of each type of evaluation per narrative comment produced by Mandarin Chinese-speaking children and English-speaking children were also compared to see the differences in use of evaluation devices across languages.

Results

Basic length measures

As noted, the three narratives with the greatest number of narrative clauses were selected for coding and analyses. FREQ and MLU programs were used to compute number of words, number of different words, number of utterances, mean length of utterance, and number of clauses in the three longest narratives across the seven age groups (see Table 2).

Table 2. Means of number of words, number of different words, number of utterances, mean length of utterance, and number of clauses in Taiwanese children's personal narratives

Age/Grade	Number of words	Number of different words	Number of utterances	Mean length of utterance	Number of clauses
3	168.56	69.24	39.95	3.98	49.44
4	184.71	83.38	35.14	4.95	47.62
5	177.81	75.90	34.62	5.00	45.58
6/Grade 1	207.85	90.15	35.20	5.63	48.75
7/Grade 2	277.09	112.70	42.30	6.49	58.48
8/Grade 3	315.27	121.68	47.68	6.46	66.14
9/Grade 4	285.91	114.91	43.39	6.52	59.17

As is shown in Table 2, overall, developmental differences were observed in the basic length measures in children's personal narratives. Children younger than 6 produced fewer words, fewer different words, fewer utterances, and fewer clauses than the school-aged children. The younger the children were, the shorter the mean length of utterance was in their narratives. Significant differences were found in number of words, $F(6, 164) = 4.81, p < .001$, number of different words, $F(6, 164) = 3.77, p < .01$, and mean length of utterance, $F(6, 164) = 9.59, p < .001$.

Development of evaluation devices in Taiwanese and American children

Descriptive & ANOVA analyses. In order to understand the density of each type of evaluation device in the narratives, the percentage of each type of evaluation per narrative comment was examined. The total number of narrative clauses of the three stories, on average, was over thirty. Unexpectedly, no significant age effect was found in the total number of narrative clauses (see Table 3). Table 3 lists the mean percent of each type of evaluation device produced by the Taiwanese children in their three longest personal narratives:

As is shown in Table 3, nineteen types of evaluation devices were found in Mandarin Chinese-speaking children's personal narratives. Children as young as three already possessed the ability to use fourteen types of evaluation strategies to narrate their personal experience narratives. Results indicated that the density and quantity of evaluation comments developed with age. Nearly 13 percent of the narrative comments were partially or completely evaluative in the youngest group of children and on average they produced 3.51 evaluative clauses in total.

Table 3. Percent of each type of evaluation per narrative comment: Taiwan & US

Age group	3		4		5		6		7		8		9		F-value
Country	Taiwan	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	
Onomatopoeia	0.1	0.2	1.2	0.1	0.6	0.3	2.0	0.1	1.2	0.6	1.5	0.1	2.1	.47	
Stressors	0.1	0.1	8.6	0.0	6.6	0.2	17.3	0.0	13.3	0.2	8.6	0.05	6.1	.53	
Elongators	0.0	0.0	0.8	0.0	0.6	0.0	1.7	0.0	2.3	0.0	0.5	0.0	0.2	NA	
Exclamations	0.0	0.3	2.0	0.0	3.2	0.0	2.0	0.5	2.7	0.4	2.7	0.2	2.2	1.30	
Repetitions	0.9	1.4	2.6	0.5	2.6	1.4	3.2	1.4	1.7	1.5	1.7	1.8	1.5	.50	
Compulsion Words	0.9	1.3	6.3	0.7	5.0	0.9	5.5	1.1	5.1	1.8	3.8	1.3	4.8	.67	
Similes and Metaphors	0.0	0.2	0.1	0.0	0.6	0.3	0.1	0.1	0.3	0.1	0.3	0.0	0.4	1.01	
Gratuitous Terms	0.7	2.4	11.0	1.6	14.7	3.4	11.9	2.3	12.4	2.8	11.5	3.4	14.1	3.75*	
Attention-Getters	0.0	0.0	2.7	0.0	2.6	0.0	2.4	0.0	1.6	0.0	1.4	0.0	1.2	NA	
Words per se	3.0	6.9	1.7	5.9	1.7	7.5	3.5	10.7	3.7	8.6	3.8	11.7	3.4	6.67*	
Exaggeration	0.0	0.03	0.6	0.0	0.9	0.1	0.4	0.0	0.7	0.1	0.1	0.2	0.1	1.29	
Negatives	2.3	1.0	8.4	1.5	8.7	1.5	8.1	2.0	5.3	2.6	7.8	2.7	8.0	.95	
Intentions or Desires	0.3	1.3	0.4	0.4	0.8	1.8	1.6	0.9	0.7	2.0	1.1	1.8	0.7	2.34*	
Hypotheses or Inferences	0.4	0.06	1.6	0.3	1.6	0.8	2.8	0.5	2.3	0.6	2.8	1.2	2.9	3.72**	
Results of High Point action	0.8	1.6	0.3	0.9	1.5	2.8	1.6	3.5	1.2	3.0	2.5	2.9	1.8	5.25***	
Causal Explanations	0.3	0.4	4.0	1.4	4.8	1.0	4.7	1.6	4.1	2.3	3.8	2.4	4.5	3.80**	
Judgments	0.2	0.7	NA	0.3	NA	0.4	NA	1.2	NA	0.9	NA	0.9	NA	2.20*	
Objective Judgments	NA	NA	0.1	NA	0.0	NA	0.0	NA	0.7	NA	0.1	NA	0.4	NA	

Age group	3		4		5		6		7		8		9		F-value
Country	Taiwan	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	US	Taiwan	
Subjective Judgments	NA	NA	1.3	NA	1.2	NA	1.2	NA	1.0	NA	1.0	NA	1.2	NA	
Descriptions of Internal															
Emotional States	3.5	3.5	0.7	4.5	1.3	5.4	1.6	4.1	0.6	3.7	1.2	4.3	1.4	.53	
Facts per se	0.0	0.0	0.3	0.0	0.2	0.0	0.2	0.0	0.6	0.0	0.5	0.0	0.4	NA	
Tangential Information	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.2	0.0	0.5	1.08	
Physical Condition ¹	0.9	1.9	NA	1.7	NA	1.6	NA	1.0	NA	1.6	NA	0.7	NA	1.03	
Idiom ²	0.0	0.0	NA	0.0	NA	0.0	NA	0.2	NA	0.1	NA	0.1	NA	.78	
Total different type of evaluation devices	14	17	21	13	20	16	20	17	21	18	21	17	21		
Number of evaluative clauses	3.51	6.52		5.71		7.2		10.44		12.09		12.13		7.09***	
Percent of evaluative clauses	12.7	17.1	46.1	16.0	47.8	21.0	54.5	21.6	46.3	23.8	48.0	24.9	45.5	4.02***	
Number of narrative clauses	30.17	34.90		35.24		35.85		41.09		43.91		46.77		1.50	

^{1,2} Newly developed codes for Mandarin Chinese data.

*p < .05 **p < .01 ***p < .001

In contrast, about 25 percent of the oldest children's narrative comments were evaluative and the total number of evaluative clauses they produced was 12.13. Generally speaking, both the percentage of evaluation per narrative comment, $F(6, 164) = 4.02, p < .001$, and the average number of evaluation clauses, $F(6, 64.09) = 7.09, p < .001$, increased with age; that is, significant age effects were observed. Results of post hoc analyses showed that seven-, eight- and nine-year-old children produced significantly higher proportions of evaluative clauses in their personal narratives than did the three-year-old children.

Among the nineteen evaluation devices produced by Taiwanese children, words per se was the device that was most heavily used, and about one third to half of the evaluation comments were conveyed by words per se. Gratuitous terms and descriptions of internal emotional states also occurred frequently in each age group. Contrary to our expectations (based on what was found for English-speaking children of the same age), the proportions of phonological devices such as onomatopoeia, stressors, elongators, and exclamations in narrating their personal experience stories were relatively low. Separate one-way ANOVAs were carried out for the evaluation devices to investigate if there were significant differences in each type of evaluation device across age. Significant age differences were found in six types of evaluation devices, i.e., gratuitous terms, $F(6, 63.52) = 3.75, p < .05$, words per se, $F(6, 64.01) = 6.67, p < .01$, intentions or desires, $F(6, 64.53) = 2.34, p < .05$, hypotheses or inferences, $F(6, 65.47) = 3.72, p < .01$, results of high point, $F(6, 67.21) = 5.25, p < .001$, causal explanations, $F(6, 64.41) = 3.80, p < .01$, and judgments, $F(6, 63.95) = 2.20, p < .05$.

Comparison of the percentage of each type of evaluation device per narrative comment across Taiwanese children and American children interviewed by Peterson and McCabe (1983) is exhibited in Table 3. A striking difference was found in the percentage of evaluative clauses in children's personal narratives. As noted, about fifty percent of narrative comments produced by American children were evaluative. In contrast, only thirteen to twenty-five percent of narrative comments in Taiwanese children's stories were evaluative. Compared the American children from the Peterson & McCabe corpus, Taiwanese children included many fewer evaluation comments in telling their personal experience stories.

It is also interesting to find that words per se was the evaluation strategy used most frequently by Taiwanese children. American children, in contrast, used stressors and gratuitous terms heavily in their stories. Although the average percentage of evaluation comments in Taiwanese children was lower than that of American children, percentage of words per se, results of high point, intentions

or desires, and descriptions of internal emotional states produced by Taiwanese children, overall, were higher than those in stories narrated by American children. As noted, strategies such as elongators, attention-getters, and facts per se never occurred in Taiwanese children's stories; occurrences of these strategies in American children's narrative were also low. Idioms was a code newly developed for Taiwanese children but it only occurred in Taiwanese children older than seven.

Correlation and principal component analyses. In order to understand the interrelationship across the nineteen types of evaluative devices identified in Taiwanese children's narratives, correlation and principal component analyses were conducted (see Table 4). In Peterson and McCabe's study (1983), only the correlation between stressors and elongators was significant ($r = .39, p < .01$). Inconsistent with what Peterson and McCabe found, however, most of the evaluation types identified in Taiwanese children were significantly correlated. Words per se was the one that had the highest number of significant correlations with other evaluation types, including stressors ($r = .21, p < .01$), repetitions ($r = .23, p < .01$), similes and metaphors ($r = .15, p < .05$), gratuitous terms ($r = .51, p < .01$), exaggeration ($r = .21, p < .01$), intentions or desires ($r = .26, p < .01$), results of high point action ($r = .38, p < .01$), causal explanations ($r = .37, p < .01$), judgments ($r = .38, p < .01$), and descriptions of internal emotional states ($r = .27, p < .01$). Only three types of evaluation devices, i.e., hypotheses or inferences, idioms, and negatives, were not significantly correlated with any other evaluation variables.

Eight major factors were extracted from principal components analysis followed by a varimax rotation and these factors explained 60.43% of the variance (see Table 4).

As was found in correlation analyses, hypotheses/inferences and negatives were quite independent of other evaluation devices. Other types of evaluation devices, however, were grouped into different factors, such as (1) words per se, gratuitous terms, judgments, causal explanations, and exaggeration (factor 1), (2) intentions/desires and compulsion words (factor 2), (3) description of internal emotional states and results of high point action (factor 3) (see Table 4). These results differ from what Peterson and McCabe (1983) observed in their corpus. They identified twenty-one types of evaluation but they all seemed relatively independent. Results of principal component analysis of their study found seventeen different factors accounting for 90% of the variance and no major factors were found.

Table 4. Results of principal component analysis of personal narratives in Taiwanese children

Factor extracted	Eigenvalue	Distinctive evaluation codes utilized	Percentage of variance explained	Total percentage of variances explained
1	2.98	Judgments, Causal explanations, Exaggeration, Words per se, Gratuitous terms	11.54	11.54
2	1.45	Intentions or desires, Compulsion words	7.74	19.28
3	1.39	Descriptions of internal emotional states, Results of high point action	7.71	26.99
4	1.28	Similes and metaphors, Physical condition	7.42	34.41
5	1.17	Exclamations, Tangential information	6.93	41.34
6	1.12	Stressors, Onomatopoeia	6.90	48.24
7	1.07	Hypotheses or inferences	6.21	54.45
8	1.03	Negatives	5.99	60.43

Discussion

Similar to English-speaking children (Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; Dunn, Bretherton, & Munn, 1987; Miller & Sperry, 1988; Peterson & McCabe, 1983), Taiwanese children include evaluation comments in their personally experienced stories; even at the young age of three years, we found fourteen evaluation strategies in their stories. These results suggest that to convey feelings, thoughts and perspectives in telling personal narratives is a common human behavior no matter whether the children are reared in Western or Asian cultures. The specific devices to express what the narrators think and feel about what happened to them, however, vary across different languages and cultures.

In this study, words per se were heavily used by Mandarin Chinese-speaking children in Taiwan, whereas they were seldom used by English-speaking children. On the other hand, English-speaking children in the US used stressors (second only to gratuitous terms) in their personally experienced stories, while Mandarin Chinese-speaking children never did. A distinguishing difference between Mandarin-Chinese and English is that Mandarin is a tone language whereas

English is an intonation language (Gussenhoven, 2004). In tone languages such as Mandarin, Japanese, Thai, etc., different words are indicated by fixed pitches and they mark meanings, attitude and emotion of a speaker. Words themselves, in this sense, are evaluative in tone languages. In contrast, intonation languages such as English, Spanish, German and many other languages in the world, convey the meaning of sentences from the patterns of rises and falls in pitches. The tone-intonation contrast in Mandarin and English might explain the differences in use of words per se and stressors in Chinese- and English-speaking children respectively. In other words, when phonology is being marshaled to distinguish one word from another, as it is in Chinese, it is not, therefore available for use as pure prosodic evaluation.

This study found significant correlations between words per se and many other evaluation devices in Taiwanese children. As stated before, words per se was the device used most frequently by Taiwanese children and about one third to half of the evaluation comments were carried by words per se. Also, words per se were correlated with ten other evaluative devices used by Taiwanese children. Moreover, results of principal component analysis showed that words per se were grouped into one factor with gratuitous terms (intensifiers or delimiters such as “very” “a little bit”), exaggerations, judgments and causal explanations. This finding is also reasonable because words per se such as evaluative adjectives, adverbs, and verbs usually occurred with gratuitous terms in order to achieve the effect of emphasis. Excerpt 1 was an example:

Excerpt 1: Mei, Girl, 4;6

Experimenter: *na4 ni3 you3yi2ci4 da3 fan1 dong1xi1 de0 shi2hou4 shi4 ze3yang4?*
What happened when you spilled something one time?

Child: *you3shi2hou4 wo3 da3 fan1 dong1xi1, yi1fu2 dou1shi4 shi1shi1de0.*
Sometimes I spilled something, (my) clothes were all wet.

Child: *ran2hou4 wo3 jiu4 yao4 qu4 huan4 yi2jian4 le0.*
Then I changed another one.

Child: *hao3 ma2fan2.*
(It was) very inconvenient.

Experimenter: *ran2hou4 ne0?*
Then what?

Child: *wo3 jiu4 zhi3shi4 xiang3 dao4 hao3 fan2 hao3 sheng1qi4 o0.*
Whenever I thought (of it), (itwas) very annoying, (I felt) very angry.

Child: *jiu4 jue2de5 hen3 dao2mei2 de5 shi4qing2.*
Then (I felt it was) very unlucky.

Excerpt 1 is a personal narrative produced by a girl Mei who was four and half years old when she told this story. In this story, the evaluative adjectives such as *inconvenient*, *annoying*, and *unlucky* were used with the intensifiers *all* or *very* to show the intensity of Mei's feelings towards the spilling event.

Excerpt 2 shows that the use of words per se not only co-occurs with intensifiers but also with causal explanations:

Excerpt 2: Jie, Boy, 8;3

Experimenter: *na4 ni3 ji4de2 ni3 you3yi2ci4 gen1 jie3jie3 chao3jia4 fa1sheng1 le0 she2me5 shi4?*

Did you remember what happened when you had a fight with your elder sister?

Child: *wo3 bei4 ta1 chuai4 dao4.*

I was stamped by her.

Child: *ran2hou4 wo3 jiu4 hen3 sheng1qi4 yi1zhi2 da3 ta1.*

Then I was very angry (I) kept hitting her.

Child: *wo3 da3 da4 ta1de5 ji3zhui1gu3.*

I hit her spine.

Child: *ran3hou4...*

Then...

Child: *zhen1de5 hen3 yong4li4 zhe4yang4 da3 wo3de0 ji3zhui1gu3.*

(She) hit my spine very hard really like this.

Experimenter: *en1.*

hm.

Child: *ran2hou4 wo3 you4 geng4 sheng1qi4 de5 ba3 ta1 da3 de0 hen3 can3.*

Then I hit her very fiercely, even more angrily.

Child: *ran2hou4 yi1zhi2 chao3.*

Then (we) kept fighting.

Child: *ran2hou4 guo4 yi1hui3er0 you4 zhi2jie1 chuai4.*

Then after a moment (I) stamped (her) directly.

Child: *yin1wei4 wo3 hen3 tao3yan4 wo3 jie3.*

Because I hated my sister very much.

Child: *ran2hou4 ran2hou4 wo3 jiu4 na2 na4ge4 zhen3tou2 a0, chen4 ta1 zai4 shui4jiao4 de5 shi2hou4 ne0, ran2hou4 da3 ta1de0 lian3.*

Then then I took that pillow (and) then hit her face when she was sleeping.

(child laughed)

Child: *ran2hou4 ran2hou4...*

Then, then...

- Experimenter: *da3 ta1de5 lian3?*
Hit her face?
- Child: *ran2hou4 yin1wei4 ta1 hen3 sheng1qi4 jiu4 pa2 qi3lai2 you4 kai-1shi3 da3 wo3.*
Then because she was very angry (she) stood up then (she) began hitting me.
- Child: *ran2hou4 wo3 jiu4 na2 na4ge4 zhen3tou2 yi1zhi2 da3.*
Then I took that pillow kept hitting (her).
- Child: *ran2hou4 wo3 jiu4 ba3 ta1 chuai4 de0 geng4 can3.*
Then I stamped her even more fiercely.
- Experimenter: *ran2hou4 ne0?*
Then what?
- Child: *wo3 you3 fang2yu4 a0.*
I was defensive.
- Child: *wo3 dou1 xian1 fang2yu4 ran2hou4 zai4 da3.*
Then I defended (myself) first, then hit (her) again.
- Child: *ran2hou4 wo3 jie3jie3 bei4 wo3 da3 de0 bi3jiao4 can3.*
Then my sister was hit more fiercely than I was.
- Child: *wo3 bei4 ta1 da3 de0 geng4 can3.*
I was hit even more fiercely by her.
- Child: *yin1wei4 ta1 dou1 yong4 ma1 na4ge4 su4jiao1 guan3.*
Because she used my mom's plastic tube.
- Child: *ju2se4de0.*
(It was) orange.

Excerpt 2 is a long story told by a boy Jie who was eight years and three months old. In this story, Jie used a number of words per se such as the evaluative verbs *stamp*, *kept*, and *began* and the evaluative adverbs *fiercely*, and *directly* in this story. As in Excerpt 1, the intensifier *very* also occurred together with word per se for emphasis of effect. Moreover, Jie used a causal connective *because* to explain why he “stamped” his sister and why his sister hit back, as well as why a hit (by a plastic tube) was more fierce.

Another interesting finding obtained from this study is that only thirteen to twenty-five percent of narrative comments were evaluative in the personally experienced stories narrated by Taiwanese children. In contrast, about half of narrative comments produced by American children were evaluative. This striking difference in the amount of evaluative comments Taiwanese versus American children included in their personal narratives might be related to different language experiences children have in their families. Previous research comparing mother child conversation about past events in Japanese versus Canadian families found that

Canadian mothers requested more evaluation comments from their children than did Japanese mothers (Minami, 1994; Minami & McCabe, 1995). Another recent study comparing mother-child talk during joint book reading in American and Taiwanese families also found that American mothers request significantly more evaluations from their children than do Taiwanese mothers (Luo, Snow, & Chang, 2012). Both studies suggest that compared to Asian mothers such as Japanese and Taiwanese mothers, American mothers put more emphasis on children's self-expression and hence provide their children with more chance to express their own perspectives on and feelings towards what happened in real life or in books (Chao, 1995; Wang, Leichtman, & Davies, 2000). Being reared in families with different cultural beliefs of sense of self, Taiwanese and American children in this study demonstrate differences in the amount of evaluative comments included in their personal narratives.

Specifically, the Taiwanese children are being raised to possess an interdependent self, one in which mothers emphasize social interactions and proper behavior when they converse with their children about past events (see Koh & Wang, this volume). This is in stark contrast to American mothers who emphasize autonomy and self-expression in such memory conversations in order to encourage their child to develop an independent self (see Koh & Wang, this volume). We know that North American, relative to Japanese, mothers request evaluation comments of their children more frequently (Minami, 1994; Minami & McCabe, 1995). Wang, Doan, & Song (2010) found that Chinese mothers mentioned internal states (which is an aspect of evaluation as we define it here) significantly less frequently than did American mothers in out-of-context memory conversations, while Koh and Wang (this volume) found that Chinese immigrant parents made *more* frequent mention of such states. In addition, to exploring probable antecedents of the Taiwanese children's relative reticence regarding their feelings about past events, it is worth considering what some consequences of this tendency might be. Another study by Wang (2009) may shed some light in this regard. Wang had Asian-born and Euro-American undergraduate students record daily events in journals for a week. Students were then given a surprise test on their ability to recall the events they had recorded in their own journals. Wang found that Asian-born students recalled significantly fewer personal episodes than their Euro-American peers – they literally forgot the events they had chosen to write about only a few days earlier.

An Asian-American novelist, Gish Jen (2013), in a series of essays explores issues of having an interdependent self in an autobiography written by her Chinese-born-and-raised father. Unlike what any Euro-American would think of doing but perhaps familiar to Chinese narrators, he begins with reference to a family genealogical record that indicated 4,000 years earlier two sons were born to an Emperor

who gave them the last name of Jen. He talks much about how many and which generations there were in his family, about the province they lived in, as well as the house they collectively inhabited, and other aspects of the context of his birth. He doesn't give his birth date until page eight of the volume, and the first real event he reports is one that happened to him when he was ten years old.

Wang (2006b) reviews research that demonstrates that European and Euro-Americans have an earlier onset of autobiographical memory, report a greater number of childhood memories, and provide more specific details in their accounts of past personal experiences compared to Asians and Asian-Americans. She links such findings to a study in which Chinese and Chinese immigrant mothers were less elaborative and evaluative³ than Euro-American mothers when reminiscing about past events with their children. She also found that shared memory reports were positively correlated with maternal elaborations and evaluations during reminiscing. It is tempting to speculate that evaluation is a means by which narrators underline the important aspects of a memory and, in the process, strengthen it.

We would be remiss not to offer an example of a typical narrative by a six-year-old Taiwanese child. Consider the following:

Excerpt 3: Being frightened (Girl, 6;4)

Experimenter: *zuo2tian wo3 zai4 da3sao3 fang2jian1 de0 shi2hou4, yi1zhi1 zhang1lang2 pa2 dao4 wo3de5 jiao3 shang4.*

Yesterday when I cleaned my room, a cockroach crawled up my leg.

Experimenter: *wo3 jiu4 xia4 le0 yi1 tiao4.*

I was frightened.

Experimenter: *ni3 ne0?*

How about you?

Experimenter: *ni3 you3 bei4 she2me0 dong1xi1 xia4 dao4 guo4 ma0?*

Have you ever been frightened by anything?

Child: *wo3 yi3qian2 you3 xia4 guo4 dan4shi4 wo3 wang4 le0.*

I was frightened (by a cockroach) before too but I forgot.

Experimenter: (laughs)

Child: *wo3 yi3jing1 you3 yi1ci4 zai4 xi3 zao3 de5 shi2hou4.*

Once when I already was having a bath...

3. But note that Wang (2006 b, p. 1798) defines evaluations as "any instance of confirmation, negation, questioning, or emphasis of the child's previous statement... (e.g., "Oh yes, you played in the sandbox" contained two evaluations in her coding scheme)" – a different definition from the one we used for *evaluation* in the present project.

- Child: *wo3 jie3jie you3 kan4 dao4 ...*
My older saw...
- Child: *wo3 jie3jie3 you3 kan4 dao4 wo3...*
My older saw I...
- Child: *kan4 dao4 wo3 shen1 shang4 you3 mao2mao2chong2.*
Saw a caterpillar on me.
- Experimenter: *ran2hou4 ne0?*
(laughs) Then what?
- Child: *shang4 ci4 wo3 zai4 xi3 zao3 de0 shi2hou4...*
(laughs) When I took a bath last time...
- Child: *ran2hou4 xi3 peng4 dao4 yi2ge4 yi2ge4...*
Then washed then touched a a ...
- Child: *jie3jie3 kan4 dao4 mao2mao3chong2 zai4 wo3 shen1 shang4, wo3 bu4 zhi1dao, wo3 bu4 zhi1dao4 na4 shi4 she2me0 dong1xi1.*
When my older sister saw the caterpillar on me, I did not know I did not know what that was.
- Experimenter: *ran2hou4 ne0?*
Then what?
- Child: *jie2guo3 jie3jie3 kan4 dao4 le0, ran2hou4 ta1 jiu4 da4 dao4 le0.*
And my older sister saw (that) then she was frightened.
- Experimenter: *ni3 jie3jie3 jiu4 xia4 dao4 le5.*
(laughs) Your sister was frightened.
- Child: *jie2guo3 wo3 ma1ma1 jiu4 ba3 yi1 zhang1 wei4sheng1zhi3 na2 qi3lai2.*
Then my mom took a piece of toilet paper.
- Child: *ran2hou4 jiu4 ba3 na4ge4 chong2 zhua1 qi3lai2 diu1 diao4 le0.*
Then she caught the caterpillar (with the toilet paper) (and) threw (the caterpillar) away.
- Experimenter: (laughs)
- Child: *ran2hou4 wo3 jia1 you3 yi1 dui1 ma3yi3.*
Then there were a bunch of ants in my house.
- Child: *wo3 you3yi1ci4 xia4 dao4 le0.*
I was frightened one time.
- Experimenter: *shi4 ze3me5 yang4?*
What happened?
- Child: *wo3 xia4 dao4...wo3 jia1 yi1 dui1 yi1 dui1 chao1 duo1 ma3yi3 de5*
I was frightened...there were a bunch of, a bunch of, super many ants in my house.

- Experimenter: (laughs)
- Child: *ran2hou4 ta1 jiu4 na2 yi1ge4 na4ge4...*
Then (she) took a that...
- Child: *yi2ge4 jiao1dai4.*
A tape.
- Experimenter: *en1.*
Hm.
- Child: *yi2ge4 jiao1dai4.*
A tape.
- Child: *ran2hou4 ta1 na2 yi1ge4 jiao1dai4 ta1 na2 yi1ge4 jiao1dai4 qu4 nian2, ran2hou4 wo3 ma1ma1 jiu4 ba3 wo3de0 jia1dai4 na2 qu4.*
Then (she) took a tape when (she) took a tape to stick, then (my) mom took my tapes.
- Experimenter: *o0.*
Oh.
- Child: *na2 qu4 nian2 ran2hou4 ta1 you4 qu4 na2 ling4 yi2ge4 jiao1dai4.*
(She took a tape) to stick (the ants) and then (she) took another tape again.
- Child: *jie3jie3 dou1 bu4 bang1mang2 yin1wei4 ta1 zai4 hua4hua4.*
(My) older sister did not help at all because she was drawing.
- Experimenter: *ran2hou4 ne0?*
Then what?
- Child: *wo3 qi2ta1 dou1 bu4 ji4de2 le0.*
I could not remember anything else.

Note that this narrative includes what the Euro-American author of this chapter considered to be a narrative that is a collection of experiences. The Taiwanese author of this chapter considered it to be typical of the narratives produced by six- to eight-year-olds in her corpus. About one-third to half of Taiwanese six- to eight-year-olds narrated at least one story with a collection of experiences (six-year-olds: 50%, seven-year-olds: 44%, eight-year-olds: 36%). Taiwanese children of other ages did not include collections of experiences in their personal narratives so much as the six- to eight-year-olds did. However, it is interesting to find that of the 1124 personal narratives in the original Peterson and McCabe (1983) corpus, only 33 (2.93%) were narratives that included mention of more than one experience in the same narrative. This compares to 54 of 596 (9.1%) narratives that were collections of experiences in the present Taiwanese corpus. The difference in the propensity of Taiwanese versus U.S. children to tell collections of experiences in the same narrative was very significant, $X^2(1) = 30.42, p < .001$.

In sum, Chinese-speaking children showed significant development both in terms of various measures of the length of their narratives and in terms of the average number and proportion of their comments that are evaluative. In the latter respect, they differ from American children, who did not show significant increases in proportions of evaluation with age. Taiwanese children also differed from American children in that they evaluate between 13 and 25% of their narrative clauses, while the American children evaluate 50% at all ages studied. A third way that Taiwanese children differ from American peers is that the ways they evaluate are much more correlated. Only the two phonological evaluation devices (stressors and elongators) were correlated in the American corpus (elongators never appeared in the Taiwanese corpus, and stressors were very rare). Taiwanese children primarily relied upon words per se to evaluate their narratives. Mandarin Chinese-speaking children's notably less frequent inclination to tell what events meant to them compared to Euro-American children reflects deep cultural differences regarding and affecting their sense of themselves. A fourth way in which children in the two cultures differ is in their propensity to tell collections of experiences (Taiwanese) versus single experiences in a unified narrative. These differences show how children reared in Chinese and American cultures see their experiences differently and how their experiences were represented in different language systems. For future research, it would be interesting to further explore how use of evaluative comments relate to sense of self, and what role evaluations play in autobiographic memories in Chinese and American children or in Chinese-English bilingual children.

Acknowledgements

This study was supported in part by funding from National Science Council to the first author. We like to thank Wan-yu Tsai and Ya-hui Luo for their assistance in coding and analyzing the data. Special thanks go to the children who participated in this study.

References

- Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competences. *Journal of Child Language*, 18, 689–710.
- Berman, R., & Slobin, D. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bretherton, I., Fritz, J., Zahn-Waxler, C., & Ridgeway, D. (1986). Learning to talk about emotions: A functionalist perspective. *Child Development*, 57, 529–548.

- Bruner, J. (1986). *Actual minds, possible world*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Chang, C. J. (2008). Narrative development in Mandarin-speaking children in Taiwan and Mainland China: Scripts, personal narratives, and fantasy narratives. Taipei, Taiwan: National Science Council. (NSC94-2413-H-003 -044)
- Chang, C. J. (2004). Telling stories of experiences: Narrative development of young Chinese children. *Applied Psycholinguistics*, 25, 83–104.
- Chang, J. W. (2001). *A developmental study of narrative structure and evaluative devices*. Unpublished Master's thesis. Providence University, Taichung, Taiwan.
- Chao, R. K. (1995). Chinese and European American cultural models of the self reflected in mother's childrearing beliefs. *Ethos*, 23, 328–354.
- Dunn, J., Bretherton, I., & Munn, P. (1987). Conversations about feeling states between mothers and their young children. *Developmental psychology*, 23(1), 132.
- Huang, J. (2002). A developmental study on children's evaluative comments in narration. Unpublished Master's thesis. Fu Jen Catholic University, Xinzhuang, Taiwan.
- Gussenhoven, C. (2004). *The phonology of tone and intonation*. Cambridge, UK: Cambridge University Press.
- Karmiloff-Smith, A. (1986). Some fundamental aspects of language development after age 5. In P. Fletcher & M. Garman (Eds.), *Language acquisition* (pp. 455–474). Cambridge, MA: Cambridge University Press.
- Jen, G. (2013). *Tiger writing: Art, culture, and the interdependent self*. Cambridge, MA: Harvard University Press.
- Koh, J.B.K., & Wang, Q. (this volume). Narrative self-making during dinnertime conversations in Chinese immigrant families. In A. McCabe & C. Chang (Eds.), *Chinese Language Narration: Culture, cognition, and emotion*.
- Labov, W. (1972). *Language in the inner city*. Philadelphia, PA: University of Pennsylvania Press.
- Luo, Y., Snow, C.E., & Chang, C. (2012). Mother-child talk during joint book reading in low-income American and Taiwanese families. *First Language*, 32(4), 494–511.
- MacWhinney, B. (2000). *The CHILDES project* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- MacWhinney, B., & Snow, C.E. (1985). The child language data exchange system. *Journal of Child Language*, 12(2), 271–295.
- Miller, P. J., & Sperry, L. L. (1988). Early talk about the past: The origins of conversational stories of personal experience. *Journal of Child Language*, 15(2), 293–315.
- Minami, M. (1994). English and Japanese: Cross-cultural comparison of parental styles of narrative elicitation. *Issues in Applied Linguistics*, 5(2), 383–407.
- Minami, M., & McCabe, A. (1995). Rice balls and bear hunts: Japanese and North American family narrative patterns. *Journal of Child Language*, 22, 423–445.
- Nelson, K. (1986). *Event knowledge: Structure and function in development*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative*. New York, NY: Plenum.
- Preece, A. (1987). The range of narrative forms conversationally produced by young children. *Journal of Child Language*, 14, 353–373.
- Reilly, J.S. (1992). How to tell a good story: The intersection of language and affect in children's narratives. *Journal of Narrative and Life History*, 2, 355–377.

- Sah, W. H. (2007). A longitudinal investigation of Mandarin-speaking preschoolers' relation of events in narratives: From unrelated to related events. *Taiwan Journal of Linguistics*, 5(1), 77–96.
- Sah, W. H. (2011). Emotion expressions and knowledge of story structure: A study of Mandarin-speaking children's narrative development. *Taiwan Journal of Linguistics*, 9(2), 61–100.
- Shiro, M. (2003). Genre and evaluation in narrative development. *Journal of Child Language*, 30, 165–195.
- Snow, C. E., & Dickinson, D.K. (1991). Skills that aren't basic in a new conception of literacy. In E.M. Jennings & A.C. Purves (Eds.), *Literate systems and individual lives: Perspectives on literacy and schooling*, pp. 179–191. Albany, NY: SUNY Press.
- Snow, C. E., Porche, M. V., Tabors, P. O., & Harris, S. R. (2007). *Is literacy enough? Pathways to academic success for adolescents*. Baltimore, MD: Paul H. Brookes.
- Uccelli, P. (2008). Beyond chronicity: Evaluation and temporality in Spanish-speaking children's personal narratives. In A. McCabe, A. Bailey & G. Melzi (Eds.), *Spanish-language narration and literacy: Culture, cognition and emotion* (pp. 175–212). New York, NY: Cambridge University Press.
- Wang, Q., Leichtman, M.D., & Davies, K. (2000). Sharing memories and telling stories: American and Chinese mothers and their 3-year-olds. *Memory*, 8, 159–177.
- Wang, Q. (2006) a. Culture and the development of self-knowledge. *Current Directions in Psychological Science*, 15, 182–187.
- Wang, Q. (2006) b. relations of maternal style and child self-concept to autobiographical memories in Chinese, Chinese Immigrant, and European American 3-year-olds. *Child Development*, 77(4), 1794–1809.
- Wang, Q. (2009). Are Asians forgetful? Perception, retention, and recall in episodic remembering. *Cognition*, 111, 123–131.
- Wang, Q., Doan, S. N., & Song, Q.F. (2010). Talking about internal states in mother-child reminiscing influences children's self-representations: A cross-cultural study. *Cognitive Development*, 25, 380–393.
- Wolf, D., Moreton, J., & Camp, L. (1994). Children's acquisition of different kinds of narrative discourse: Genres and lines of talk. In J. Sokolov & C.E. Snow (Eds.), *Handbook of research in language development using CHILDES*, pp. 286–323. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Wang, Q. (2009). Are Asians forgetful? Perception, retention, and recall in episodic remembering. *Cognition*, 111, 123–131.

Chinese and English referential skill in Taiwanese children's spoken narratives

Ming-huei Sung and Chien-ju Chang

This study aims to examine Chinese and English referential strategies in English as a Foreign Language (EFL) learners in Taiwan. Thirty sixth-grade children with three or four years of English instruction participated in this study. They were asked to narrate a wordless picture book in Chinese and English respectively. All references to the main animate characters in the stories were coded for the use of form and discourse contexts, i.e., introduction, maintenance and switching. Main results show that the children had difficulties in making appropriate referential choices in producing English narratives, especially in the context of referent introduction, which suggests that Chinese children might carry over their first language knowledge into the choice of English referential strategies. Educational implications and suggestions for the future research were discussed.

Keywords: narrative, Chinese, reference, English, second language acquisition

Introduction

In recent years, the study of communicative competence has expanded to examine longer discourse units, including narratives. A narrative is a genre of discourse that consists of a series of extended or elaborated units of texts to form a coherent whole. It is regarded as a useful tool that indexes language learners' communicative competence and identifies discourse problems (McCabe & Peterson, 1991). To set up a well-formed narrative is a sophisticated task. That is to say, becoming a competent speaker in a language involves not only the understanding of the communicative uses for everyday conversations, but also the ability to make use of the knowledge of linguistic features (e.g., vocabulary and grammar) correctly and appropriately to organize a coherent extended discourse.

For second/foreign language learners, to produce discourse in the target language is even more difficult. They are required not merely to achieve a certain level of lexical and grammatical proficiency in the target language, but also have to

make the meaning underlying the spoken texts cohesive through the utilization of appropriate linguistic elements that can meet the cultural norms and discourse styles of the target language. Since the ways to convey meanings through oral discourse vary from language to language, many second/foreign language learners struggle in constructing sequenced discourse in the target language. In this sense, there is a need to investigate narratives produced by second/foreign language learners to get a better understanding of to what extent they are capable of using their knowledge of the target language system in their oral narration. It is also essential to identify the problems they may have in participating in discourse activity in order to help them become more competent speakers in the target language.

One of the major assumptions underlying the coherence of discourse is that people behave intelligibly in the way they indicate what they are talking about and in how they enable others to keep track of thing being talked about (Maes, 1996). Givón (1990) proposed four types of coherence: (1) referential coherence, (2) temporal coherence, (3) locational coherence, and (4) action-event coherence. Amongst these, referential coherence is considered to be the primary mechanism of coherence in discourse in most languages, and the use of referential devices is the most common way for people to construct coherent mental presentations of discourse. Over the last decades, numerous studies have investigated children's development of referential strategies in narrative discourse (e.g., Bamberg, 1986, 1987; Hickmann & Hendriks, 1999; Wigglesworth, 1997). They are basically concerned with how the choices of anaphoric expressions are made from a wide range of linguistic devices by first language users to construct and maintain an appropriate discourse referent. The linguistic forms of referring expressions can be proper nouns (e.g., 'Shakespeare'), noun phrases that are definite (e.g., 'the building') or indefinite (e.g., 'a beautiful place'), pronouns (e.g., 'he', 'her'), and ellipsis (e.g., 'He went to the store and (he) got some books.'). In narratives, reference choice is documented to be responsive to the current discourse context. This means that referents being introduced into discourse for the first time are treated differently from subsequent mentions. And successive mentions in subject position of the same referent are treated distinctly from switched reference, where a different referent has been activated in the immediately preceding clause (Bamberg, 1987; Clancy, 1992).

The manipulation of referential strategies through linguistic forms may vary from language to language (Chen, 2002). In general, the referent to be introduced for the first time tends to be realized through the form of indefinite nominals in English (Chafe, 1979; Halliday & Hasan, 1976). In Chinese, on the other hand, bare nominals in post-verbal position or in the existential presentative sentence as well as nominals with numeral determiners and classifiers are used for preliminary

introduction of the referent (Chen, 1986). Subsequent mention of a repeated subject referent that has been mentioned in the immediately previous main clause in the subject position (in same subject context) tends to be realized through the use of pronominal forms in English (Chen, 2002; Clancy, 1992; Fox, 1987), and through the use of zero forms or pronouns in Chinese (Cai, 1996; Huang, 1992; Li & Thompson, 1981; Su, 1998; Wang, 1998). Successive mention of switched subject reference where the entity is different from the one referred to by the prior main clause in the subject position to signal the switch from other intervening agentive information (in switched subject context) tends to be realized through the use of more explicit forms like definite nominals in English (Chen, 2002). In regard to Chinese, reference switching is realized through the use of bare nominals and nouns along with various linguistic expressions, such as demonstrative determiners and classifiers, possessives, and restricted relative clauses (Chen, 2002; Wang, 1998).

Currently, many children in Taiwan are encouraged to begin English instruction at a very early age, at which time they are still in the process of mastering their first language skills. These children may exhibit various levels of competence in English, which may reflect the influence of their native language. For the purpose of having a clear picture of the impact of a first language (L1) on the children's second language (L2) learning, it is necessary to investigate whether the L1 knowledge could positively support or negatively interfere with the second language development. A first language exerts a considerable effect on second language acquisition (Gass & Selinker, 1983; Kellerman & Smith, 1986; Odlin, 1989). Odlin (1989) speculated that transfer – the carryover of L1 knowledge into L2 learning – occurs in all linguistic subsystems. Previous research has documented that language skills such as phonological awareness, decoding, reading, writing skills, and narrative structural features can be transferred from one language into another (e.g., Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Edelsky, 1982; Kang, 2003; Swain & Lapkin, 1982; Verhoeven, 1994). These transfer effects support Cummins' interdependent hypothesis in L2 learning (Cummins, 1979, 1981); that is, the level of competence in L2 is partially a function of the competence developed in L1 at the time when intensive exposure to L2 begins. Our question here is whether L2 learners transfer L1 referencing patterns to L2 narratives, either positively or negatively.

The literature has provided rich evidence on children's development of referencing skill in narratives in their first language (e.g., Bamberg, 1987; Cai, 1996; Clancy, 1992; Hickmann & Hendriks, 1999). Limited attention, however, has been paid to the narratives produced by second/foreign language learners, for whom the capability of organizing coherent discourse by making clear references is viewed as one of the most important indices to master in the target language.

Moreover, although the transfer of L1 literacy skills to L2 learning has often been reported (e.g., Cummins et al., 1984; Carson, Carrell, Silberstein, Kroll, & Kuehn, 1990; Verhoeven, 1994), research on the transfer of narrative skills across languages is less well documented. Based on the related theoretical background on second language acquisition and the insight of the importance of narrative and referential coherence in discourse development, the purpose of this study is to investigate how Chinese EFL children will employ L1 and L2 anaphoric devices to make references in their L1 and L2 narratives.

In order to fulfill the purposes proposed above, the present study is designed to answer the following research questions:

1. What are the characteristics of Chinese EFL elementary school students' use of Chinese and English referential strategies in their oral narratives with respect to form (NP types) and function (discourse contexts)?
2. What are the similarities and differences between children's use of Chinese and English referential strategies?

Method

Participants

Thirty students, 15 girls and 15 boys, enrolled at a school located in Taipei City participated in this study. These students were all native speakers of Mandarin Chinese without any speech or hearing problems. They ranked in the top 20 percent of all 205 6th graders in an English proficiency test (Hsu, 2003). Most of them started learning English earlier than formal English instruction that commences in elementary school. On average, the length of English learning of the children was about three to four years long. All of them came from middle-class families, i.e., at least one of their parents was college- or university-educated.

Materials

A 24-page wordless picture storybook entitled '*Frog, where are you?*' by Mercer Mayer (1969) served as elicitation material for the narratives of all subjects in the study. In contrast to elicited personal narratives, which exhibit significantly more variation, picture-based storytelling elicitation allows the researcher to keep the data more or less homogeneous by holding semantic referents relatively constant. This book is ideally structured with animate protagonists involved in a temporally and causally related problem-solving sequence of events. Although the pictures are simple line drawings, the activities and the animate story characters are

complicated enough so that adequate pronoun reference and event sequencing are complex. Thus, the story provides a valuable means of tapping children's linguistic abilities to use appropriate referential devices to identify each referent clearly appearing in the story. Furthermore, this book has been used in a great number of studies on children's narrative development (e.g., Bamberg, 1987; Berman, 1988; Berman & Slobin, 1994; Kang, 2003; Pearson, 2002; Wang, 1998; Wigglesworth, 1997) and has been used successfully with grade-school children (Pearson, 2002). Therefore, the researcher used the 'frog story' as the stimulus in the narrative production task to examine Taiwanese EFL children's narrative skills both in Mandarin Chinese and in English.

Tasks and procedures

Two tasks (i.e., the storytelling task and an English object-naming task), were administered in this study. In the storytelling task, each subject was asked to narrate the frog story, following the standard protocol of instruction set out by Berman and Slobin (1994) with the Mandarin translation:

"Here is a book. This book tells a story about a boy (the experimenter point to the picture on the cover), a dog (point), and a frog (point). First I want you to look at all the pictures. Pay attention to each picture that you see and afterwards you will tell me the story" (p. 22).

In order for cross-linguistic comparison, the children were asked to tell the 'frog story' in Chinese one day and in English one week later to minimize direct translation from Chinese to English when the children told the English frog story. The subjects had the book in front of them all the time during storytelling sessions, turning the pages at their own pace. The researcher's involvement was that of a listener, signaling that she was attentively following the narrative. Only when the child came to a standstill did the researcher intervene with neutral prompts, such as repeating the child's words by asking: "What is happening?" "Anything else?" "And...?" or by responding "Yes," "Okay," and "Go on." At times, the experimenter just nodded her head to avoid any verbal feedback that would influence the form of expression chosen by the children.

After telling the 'frog story' in English, the subjects were asked to take an English object-naming task. This task was used to examine whether or not the students knew the English name of each of the major animate characters in the story. In case the children might not mention all the animate referents in their stories, this task would be helpful to distinguish the reasons for children's not mentioning the characters; that is, did they fail to mention the character because they did not know its English name or because they simply ignored that character. For

each picture of the major animate entities, the subjects were asked “What is this?” in English and were told to produce the English name of the picture. The main animate characters in the ‘frog story’ include ‘boy,’ ‘dog,’ ‘frog,’ ‘bee,’ ‘gopher,’ ‘owl,’ and ‘deer.’ Each child’s production was audio tape-recorded.

The children were familiar with the four main characters in the book, i.e., ‘boy,’ ‘dog,’ ‘frog,’ and ‘bee.’ ‘Gopher’ was the most difficult item for them to recognize. In spite of lacking knowledge of the word ‘gopher,’ some of the students used other terms like ‘mouse’ or ‘rat’ to make up for this deficiency. Similar results were found in naming the objects ‘owl’ and ‘deer.’ This “make-up” strategy did not interfere with the coherence of their stories, all the English narratives produced by all 30 subjects were therefore included for further analysis.

Transcription

Each narrative was transcribed verbatim by using the Codes for the Human Analysis of Transcripts (CHAT) rules of the Child Language Data Exchange Systems (CHILDES) (MacWhinney, 2000). Written versions of standard Mandarin Chinese and English orthography were used throughout the transcripts.

Coding schemes

The measure of referential strategies coding was developed to capture children’s use of referential strategies in mentioning each animate story character occurring in the subject position of the main clause in different discourse contexts. To establish a basis for narrative analysis across languages, the ‘clause’ was adopted as the basic coding unit in the research.

In recognition of the agent-oriented nature of narrative and the centrality of event-sequencing in such discourse, the anaphoric forms of the animate noun phrases in children’s English and Chinese narratives are the main focus of the present research. The referential strategy coding is restricted to the following animate characters: (1) the boy, (2) the dog, (3) the boy’s frog, (4) the boy and the dog referred to as a joint subject ‘they,’ and (5) all the other peripheral animate characters grouped together, e.g., bees, gopher, owl, deer, and the group of frogs mentioned towards the end of the story.

The referential coding system developed in this study includes three dimensions, i.e., (1) coding of Chinese and English referential strategies, (2) coding of discourse context, and (3) coding of referential appropriateness:

Chinese referential strategies coding. This coding system was adapted from Li and Thompson’s (1981) analysis of referential strategies in Mandarin Chinese (also used in Chang, 1998; and Wang, 1998), as well as from Hickmann and

Hendriks's (1999) classification. In all, six nominal referential categories for Chinese narrative anaphoric coding classifications included:

(1) Bare nominals:

This category refers to a situation where narrators use only proper names or noun phrases that are not preceded by any determiners or quantifiers. According to Li and Thompson (1981), there are no words in Mandarin Chinese equivalent to determiners 'a' and 'the' in English, and the use of determiners such as 'a' and 'the' in Mandarin Chinese is not obligatory with nominals. Therefore, the nominals without determiners occurring in Chinese narrative data could be interpreted as indefinite or definite depending on the discourse context. Generally, most bare noun phrases are semantically indefinite when first introduced (Sentence 1), and they become definite on subsequent occurrences (Sentence 2) (Lin, 1992). For example:

xiao3nan2hai2 yong3you3 yi1 zhi1 gou3 han4 yi1 zhi1 qing1wa1.

(A) little boy had a dog and a frog.

ta1 shui4jiao4 de0 shi2hou4 xiao3qing1wa1 tao2 zou3 le0.

When he was sleeping, (the) frog ran away. (the second mention of 'the frog')

(2) Indefinite nominals:

This category refers to noun phrases preceded by numerals and classifiers. According to Li and Thompson (1981), the existential verb *you3* 'exist' or 'have' appears followed by numerals (optional) and classifiers preceding noun phrases to introduce new information in Mandarin Chinese. Hence, the form of indefinite nominals which contain the existential verb *you3* is also included in this category. For example:

you3 yi2 ge0 xiao3nan2hai2, ta1 yang3 le0 yi1 zhi1 gou3 han4 yi1 zhi1 qing1wa1.

(There was) a little boy, he had a dog and a frog.

(existential verb *you3* + numeral + classifier + noun phrase)

(3) Determinate nominals:

In Chinese, determinate nominals refer to noun phrases with demonstrative markers *zhe4* 'this' and *na4* 'that'. In the study, Chinese determinate nominals include demonstrative markers followed by classifier/quantifier (optional) and noun phrases. Generally, the Chinese non-deictic *zhe4* 'this' and *na4* 'that' are usually equated with the English definite article 'the' (Chu, 1979). For example:

na4 zhi1 xiao3gou3 yi1zhi2 zai4 chao2 feng1wo1 jiao4.

That dog kept barking to the bee hive.

(demonstrative marker *na4* + classifier + noun phrase)

(4) Personal nominals:

Like in English, the third person pronouns in Mandarin Chinese refer to an entity whose identity has been established by a regular noun phrase that has occurred earlier (Li & Thompson, 1981). The pronouns function to refer back, thus avoiding repetition of the noun or noun phrase. In the study, only third person pronouns were considered (as they were the only ones that appeared in our data), including third-person singular, *ta1* 'he', 'she', 'it' and plural *ta1men0* 'they' pronouns.

(5) Possessive nominals:

This category refers to noun phrases with possessive pronouns preceding them. For example:

you3 yi2 ge0 xiao3nan2hai2 han4 ta1 de0 gou3 yong3you3 yi1 zhi1 qing1wa1.

A little boy and his dog had a frog.

(6) Zero anaphors (Ellipses):

Zero anaphora is a striking feature of Mandarin Chinese reference. It is a linguistic device that is not explicitly realized in discourse and requires reference to linguistic context for correct interpretation. These contexts include multiple actions ascribed to the same agents, referents that are understood from having been mentioned, and so on. For example:

ran2hou4 ta1 yi1zhi2 zhao3.

Then he kept looking.

ran2hou4 (ta1) wen4 mi4feng1.

Then (he) asked (a) bee.

(zero anaphora)

English referential strategies coding. The referential categories for English narrative anaphoric coding are the same as those of Chinese with some differences:

(1) Bare nominals:

This category refers to only proper names or noun phrases that are not preceded by any determiners. For example: Johnny and his dog were very sad.

(2) Indefinite nominals:

This category refers to noun phrases preceded by indefinite articles 'a' or 'an' or numerals (one, two, etc.). For example: Then an owl comes out.

(3) Determinate nominals:

In the study, English determinate nominals include noun phrases preceded by definite article 'the' or demonstrative markers 'this', 'that', 'these', or 'those'. For example: And the boy jumped out of the window, too.

(4) Personal nominals:

In the study, only the third person pronouns that appeared in the narrative data were considered, including third-person singular 'he,' 'she,' 'it' and third-person plural 'they.' For example: He thinks the little dog is too naughty.

(5) Possessive nominals:

This category refers to noun phrases with possessive pronouns preceding them. For example: One day the boy and his pet dog got a frog.

(6) Ellipses

In English, the use of ellipsis is somewhat different from zero anaphora (the elliptical form of reference) in Chinese. As McCarthy (1996) explained, "Ellipsis is the omission of elements normally required by the grammar which the speaker or writer assumes are obvious from the context and therefore need not be raised" (McCarthy, 1996, p. 43). It is like substitution and can be interpreted as that form of substitution in which the item is replaced by zero (Halliday & Hasan, 1976). In some cases, nouns or pronouns are ellipted when they occur following conjunctions. Example: He took one little frog and (he) went away.

In the present study, for the sake of coding convenience, ellipses include zero anaphors in Chinese and elliptical items in English, which are particularly used to refer to the same character for successive mention in the subject position of the main clause.

Discourse context coding. Three different discourse contexts were categorized following Clancy's classification (Chang, 1998; Chen, 2002; Clancy, 1992):

- (1) Introduction: first mention of animate referents. For example: There was a boy and a dog.
- (2) Maintenance: successive mention of the same animate subject referent that has been mentioned in the immediately previous clause in the subject position. For example: The boy said "Where is the frog"? He found anywhere, but he didn't see it. (refer to the same character 'the boy')
- (3) Switching: animate subject referent that is different from the one referred to by the immediately prior main clause in the subject position; that is, reference back to an entity that has been mentioned but not in the immediately preceding clause. For example, The boy opened the window. The dog fell down. The boy was angry (referring back to the same character 'the boy' that has been mentioned).

Referential appropriateness coding. In order to get an overall picture of how well the children specify the nominal forms for animate referents, the appropriateness of referencing is identified in the study.

(1) Appropriateness:

Reference appropriateness concerns two major aspects in using anaphoric expressions. One is that the referring terms used by the speaker are clear and precisely refer to an entity of the story; the other is that the form of referential strategies that the speaker used is thought to be grammatically appropriate based on most nominal forms used by native speakers. In some circumstances, there may be deterioration of the conventional use of referential forms. For example, in English, the most appropriate form used for successive reference as the subject of the main clause in a switched-subject context is definite nominal. However, some narrators in our study used pronouns instead of definite nominal to make reference switching in their English narratives, especially when the pronoun 'they' referred to the joint referents 'the boy' and 'the dog.' For example: 'There are many small frogs. And the frog gave them a small frog.' In such cases, the interpretation of referents for pronouns being inferred was based on semantic and pragmatic information provided by the discourse context and our knowledge of the world (Li & Thompson, 1979). That is, if the referent for a pronoun can be inferred clearly, the use of pronominal form is judged appropriate. If the use of a pronoun cannot be clearly linked with an entity, then it is thought to be ambiguous. In the present study, in other words, it is not merely the structural (syntactic) or conventional regularities in linguistic devices that determine the appropriateness of a reference. Contextual pragmatic and semantic knowledge also provides a basis for judging whether the use of any referential strategy is appropriate.

(2) Inappropriateness:

In the study, inappropriate referencing occurs when nouns are repeated where pronouns would be expected (McCabe & Bliss, 2003). For example, pronominal is deemed the most appropriate referential form used for successive mention of the same referent in the subject position of a subsequent main clause in English, and pronouns and zero anaphora are thought to be the most appropriate for reference maintenance in Chinese. If the narrator used other referential forms (and the forms were grammatically correct) rather than the most appropriate one for referent maintenance, the use of the forms was judged to be correct but inappropriate. For example: 'The boy was happy. The boy call the frog.' (the form is correct but not appropriate; the third pronoun 'he' is appropriate)

(3) Incorrectness:

This category focuses on children's incorrect use of Chinese and English referential strategies to introduce, maintain, and switch referents in their narrative production of the 'frog story,' including the following three situations:

Situation A: Pronoun or noun omissions (Peterson & Dodsworth, 1991): instances in which the narrator failed to use a pronoun or noun when one is required (Peterson & Dodsworth, 1991). For example, English is a subject predominant language and any complete English sentence requires a subject. In the following example, there is no subject for the second sentence, and thus the use of zero form is incorrect in this situation. For example: 'The boy find and find. Find a deer.' (there is no subject for the second sentence)

Situation B: Determiner omissions: instances in which required determiners (definite and indefinite articles) are omitted. In English, the use of determiners is obligatory with noun phrases. Therefore, the use of only bare nominal 'boy' in the following English sentence is regarded as incorrect. Example: 'Boy hears some sound behind the wood.' (only bare nominal without any determiner)

Situation C: Determiner misuse: instances in which when determiners are misused according to the discourse context. This refers to the incorrect use of definite noun phrases for reference introduction, and the erroneous use of indefinite noun phrases for reference maintenance.

- (4) Ambiguity: instances in which nouns or pronouns (including zero pronouns) are used ambiguously without clear prior identification, where more explicit use of anaphoric expressions is expected (McCabe & Bliss, 2003). For example: 'There are many small frogs.

And the frog gave them a small frog. And they say "goodbye." ('they' cannot be identified as 'the boy and the dog' or 'the frog with a small frog')

Reliability of coding. Twenty-five percent of transcripts were randomly selected from children's Chinese and English narratives; these were independently coded across measures by another rater. Cohen's kappa statistic was used to estimate inter-coder corrected-for-chance agreement. Both Chinese and English narrative coding achieved reliability with Cohen's Kappa values above 90% (Chinese: 96%, English: 95%).

Data analysis. Data collected from each subject's narratives were transcribed and coded into the main categories of referential strategies, discourse contexts, and referential appropriateness. The subsequent analyses focused on the animate referents occurring in the subject position of the main clause. The *FREQ* program of *CLAN* (Child Language Analysis, MacWhinney, 2000) was performed to derive frequency occurrences within each main category of nominal forms and the appropriateness under each discourse context (introduction, maintenance, switching). Multivariate analysis of variance (MANOVA) on different types of referring terms was then conducted to explore the interactive effects among the variables of language, discourse context, and NP type. Separate analyses of variance (ANOVA) and Chi-squares were also respectively carried out to determine if there were

significant differences in the children's use of referential strategies between the two languages of the nominal types and appropriateness in each discourse context. An alpha level of 0.05 was set for all statistical tests due to the relatively modest sample size and a desire to reduce the possibility of both Type I and Type II errors.

Results

Basic narrative length measures

FREQ and MLU programs of CLAN were used to compute several basic length measures of the children's Chinese and English narratives, including number of words, number of different words, type-token ratio, number of utterances, mean length of utterance (MLU), and number of clauses (see Table 1).

As Table 1 shows, on average, the children displayed better performance in terms of basic length in producing Chinese versus English oral narratives. The children's Chinese narratives contained more words ($M = 275.43$), more different words ($M = 110.00$), more utterances ($M = 33.20$), and more clauses ($M = 40.33$) than their English narratives. However, the mean length of utterances did not significantly differ between the children's Chinese ($M = 7.81$) and English ($M = 7.78$) narratives. As for type-token ratio, there is no significant difference between the Chinese ($M = 0.42$) and English ($M = 0.33$) narratives either.

Overall use of Chinese and English referential strategies

In the preliminary analyses, the FREQ program of CLAN was employed to probe occurrences of each measure appearing in children's stories. In order to specify the difference between children's L1 and L2 narrative production, Chi-square tests and separate univariate ANOVAs based on raw frequency data were individually conducted for each component of reference appropriateness and NP types.

Table 1. Means and standard deviations of basic narrative length measures in children's Chinese and English narratives

	Chinese Narratives (N = 30)		English Narratives (N = 30)	
	M	SD	M	SD
Number of words	275.43	96.25	213.70	72.98
Number of different words	110.00	26.34	68.73	18.71
Type-Token ratio	0.42	0.07	0.33	0.05
Number of utterances	33.20	10.61	28.07	7.29
Mean length of utterance	7.81	0.85	7.78	1.21
Number of clauses	40.33	12.18	31.27	9.49

Table 2. Results of MANOVA for the effect of language, discourse context, and NP types on children's use of referential strategies

Source of variation	SS	df	MS	F
Main effect				
Language	64.05	1	64.05	13.82***
Context	427.02	2	213.51	46.07***
NP type	950.08	5	190.02	41.00***
Interaction effect				
Language x NP type	2053.71	5	410.74	8.64***
Language x Context	12.56	2	6.28	1.36
Context x NP type	5305.48	10	530.55	114.49***
Language x Context x NP type	2046.94	10	204.69	44.17***

*** $p < .001$

An overall multivariate analysis of variance revealed a significant three-way interaction effect on language x discourse context x NP type ($F = 44.17$, $p < 0.001$) with significant main effects of language difference, discourse context, and NP type ($p < 0.001$). Results from other separate MANOVAs also showed significant interaction effects between language x NP type ($F = 88.64$, $p < 0.001$) and discourse context x NP type ($F = 114.49$, $p < 0.001$), which suggests that both language and discourse context are significant factors that have an impact on children's use of referential strategies (see Table2).

Appropriateness of using referential strategies

Raw frequencies, the means as a proportion of total referring terms, and standard deviations of each category of reference appropriateness across languages are displayed in Table 3.

Table 3 gives us a very clear picture that Chinese elementary school children aged from eleven to twelve with typical development had no difficulty in using appropriate and correct linguistic devices to introduce and maintain referents while producing Chinese narratives. However, these children had problems in using appropriate and correct English referential strategies after an average of three to four years of English learning, with a lower percentage of referential appropriateness in English (80.2%) compared to Chinese (91.5%). Meanwhile, the percentage of referential incorrectness was much higher in children's English narratives (10.3%) than in Chinese narratives (0.4%). The results of Chi-square analysis based on raw frequencies confirmed these findings ($X^2 = 127.30$, $p < 0.001$).

Table 3. Distribution of children's correct use of Chinese and English referential strategies

Category	Chinese Narratives (N = 30)		English Narratives (N = 30)		X ² (df = 3)
	M	SD	M	SD	
Appropriateness	1185 (91.5%)	10.73 (0.05)	826 (80.2%)	8.17 (0.10)	
Inappropriateness	44 (3.1%)	1.63 (0.03)	52 (5.1%)	1.82 (0.05)	
Incorrectness	6 (0.4%)	0.48 (0.01)	106 (10.3%)	2.7 (0.08)	
Ambiguity	59 (5.0%)	1.43 (0.04)	46 (4.4%)	1.36 (0.03)	
Total	1294 (100.0%)		1030 (100.0%)		127.30***

***p < .001

Note. Mean proportion was put in parentheses.

Distribution of different types of nominal forms

Table 4 lists raw frequencies, means as a proportion of total referring terms, and standard deviations of each type of referential strategy occurring in children's Chinese and English narratives.

As illustrated in Table 4, the NP types occurring in children's Chinese and English narratives were not restricted to only one or two kinds. Rather, they included a variety of nominal forms for first and successive mention of referents even in their L2 narratives, which demonstrates that the participants can use a wide range of referential forms.

Separate analyses of variance (ANOVA) on raw frequencies of each category of nominal types revealed that children significantly tended to include more bare nominals and zero anaphora in their Chinese narratives. On the other hand, there were

Table 4. Distribution of children's overall use of referential strategies

Nominal Types	Chinese Narratives (N = 30)		English Narratives (N = 30)		F (1,58)
	M	SD	M	SD	
Bare nominal	452 (34.0%)	7.97 (0.14)	47 (4.9%)	2.74 (0.10)	76.92***
Indefinite nominal	156 (12.4%)	2.12 (0.05)	131 (12.6%)	2.27 (0.06)	2.16
Determinate nominal	63 (4.4%)	2.80 (0.05)	418 (39.5%)	7.20 (0.16)	70.40***
Personal nominal	234 (18.9%)	3.80 (0.09)	337 (33.6%)	5.06 (0.13)	8.82**
Possessive nominal	36 (3.1%)	1.27 (0.03)	28 (2.9%)	1.44 (0.04)	0.58
Ellipsis (Zero anaphora)	353 (27.2%)	5.22 (0.09)	69 (6.4%)	1.73 (0.04)	88.84***

p < .01 *p < .001

Note. Mean proportion was put in parentheses.

significantly more determinate and personal nominals utilized by the subjects in producing English narratives. Children performed at a similar level in using indefinite and possessive nominals in narrating Chinese and English stories. These findings confirmed the effect of language differences on children's choice of referential devices. The divergence in choosing different nominal types for making references may be due to the difference between discourse contexts, which also plays a crucial role in determining referential choices among various linguistic devices by narrators.

Comparisons between children's Chinese and English referential strategies in different discourse contexts

Chinese EFL children in the study employed a wide distribution of Chinese and English referential strategies in storytelling production. However, their ability to use various nominal types to refer to entities did not guarantee correct and appropriate use of these referring terms as a function of discourse contexts, especially in the target language (L2). In the following sections, comparisons are made between children's Chinese and English narratives with regard to the referential strategies used for introduction, maintenance, and switching. Raw frequency occurrences of each variable were then analyzed via Chi-square test and one-way ANOVA to determine if there was any significant difference in each measure of referential codes across languages.

Analysis of referent introduction

Table 5 below summarizes the descriptive statistics for children's performance in selecting the appropriate forms for referent introduction in Chinese and English.

Table 5. Distribution of children's correct use of Chinese and English referential strategies for Referent Introduction

Category	Chinese Narratives (N = 30)		English Narratives (N = 30)		X ² (df = 1)
	M	SD	M	SD	
Appropriateness	245 (98.0%)	1.46 (0.05)	141 (67.5%)	2.00 (0.22)	
Inappropriateness	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	
Incorrectness	5 (2.0%)	0.46 (0.06)	68 (32.5%)	1.60 (0.22)	
Ambiguity	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	
Total	250 (100.0%)		209 (100.0%)		79.36***

***p < .001

Note. Mean proportion was put in parentheses.

As shown in Table 5, most children have mastered their L1 narrative skills in using appropriate and correct forms to introduce story entities into a discourse as expected; they did so 98% of the time. However, children made more mistakes in choosing accurate English referring terms to refer to the characters for the first mention. As evident from the results of Chi-square test on the information in Table 5, there were significant language differences in children's selection of correct and appropriate introductory referential strategies ($X^2 = 79.36, p < 0.001$). To understand this in more detail: Table 6 presents the distribution of different nominal forms that children selected to introduce referents across Chinese and English.

As shown in Table 6, on average, use of the indefinite nominal, which is the most appropriate form to introduce referents into a discourse in Chinese and English, occurred most frequently in children's narratives in both languages. No significant language difference was observed in children's use of Chinese and English introductory referential strategies of indefinite nominal ($F(1,58) = 2.99, p > 0.05$). This suggests that the appropriateness difference in Chinese and English narratives did not result from the use of indefinite nominal for referent introduction but from other nominal forms used by the subjects.

In Mandarin Chinese, the form of bare nominal is an acceptable way to introduce referents since a determiner is optional with a noun, and nominals without determiners can be interpreted as indefinite or definite depending on the context, but this is not the case in English, in which a determiner 'a' or 'the' is obligatory with a noun, and the use of bare nominals (except for proper names) is judged incorrect. Although there was a significant language difference in the use of bare nominals ($F(1,58) = 37.04, p < 0.001$) in introductory discourse between Chinese and English narratives, results of this study show that there were still some students who applied their L1 knowledge of bare nominals to their L2 narratives for referent

Table 6. Distribution of children's use of referential strategies for Referent Introduction

Nominal Types	Chinese Narratives (N = 30)		English Narratives (N = 30)		F (1,58)
	M	SD	M	SD	
Bare nominal	73 (29.3%)	1.63 (0.20)	11 (6.1%)	0.89 (0.16)	37.04***
Indefinite nominal	155 (61.7%)	2.04 (0.20)	127 (59.7%)	2.14 (0.25)	2.99
Determinate nominal	5 (1.9%)	0.46 (0.05)	57 (26.7%)	1.56 (0.21)	34.01***
Personal nominal	0 (0.0%)	0.00 (0.00)	1 (0.4%)	0.18 (0.02)	1.00
Possessive nominal	17 (7.1%)	0.63 (0.08)	14 (7.1%)	0.57 (0.09)	0.42
Ellipsis (Zero anaphora)	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	

*** $p < .001$

Note. Mean proportion was put in parentheses.

introduction (6.1%). Another striking finding is incorrect use of determinate nominal for referent introduction (26.7%) in English narratives. Although many children were able to use appropriate introductory referential strategies such as bare nominal and indefinite nominal reference in Chinese narratives, some of them failed to choose the correct introductory form when producing English narratives. These findings imply L1 negative transfer to the L2 introductory referential strategies.

Analysis of reference maintenance

In regard to maintaining reference to the same characters, on the whole, Chinese EFL learners had full mastery in utilizing appropriate referring terms in Chinese narratives. Nonetheless, not all of them were capable of using English referential strategies for successive mention of the referents in Same Subject Context, as presented in Table 7. The results of Chi-square test further evidenced the finding that reference appropriateness is significantly associated with language differences for reference maintenance ($X^2 = 29.49$, $p < 0.001$).

In Chinese, reference maintenance in Same Subject position of the main clause is more likely to be realized through pronominal and zero anaphora (Cai, 1996; Huang, 1992; Li & Thompson, 1981; Su, 1998; Wang, 1998). In the present study, Chinese children showed a clear preference for the use of zero anaphors to refer to the same characters for successive mention in Chinese narratives (See Table 8). The most appropriate referential form used for reference maintenance is pronominal in English (Chen, 2002; Clancy, 1992; Fox, 1987). Children seem to grasp this distinction; 64.6% of their referents used the pronominal referential form in English narratives.

Table 7. Distribution of children's correct use of referential strategies for successive mention of referents in Same Subject Context

Category	Chinese Narratives (N = 30)		English Narratives (N = 30)		X^2 (df = 2)
	M	SD	M	SD	
Appropriateness	462 (91.3%)	5.18 (0.10)	304 (81.7%)	4.42 (0.20)	
Inappropriateness	44 (8.7%)	1.63 (0.10)	52 (14.0%)	1.82 (0.16)	
Incorrectness	0 (0.0%)	0.00 (0.00)	16 (4.3%)	0.97 (0.09)	
Ambiguity	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	
Total	506 (100.0%)		372 (100.0%)		29.49***

*** $p < .001$

Note. Mean proportion was put in parentheses.

Table 8. Distribution of children's use of referential strategies for successive mention of referents in Same Subject Context

Nominal Types	Chinese Narratives (N = 30)		English Narratives (N = 30)		F (1,58)
	M	SD	M	SD	
Bare nominal	41 (8.2%)	1.47 (0.09)	10 (3.2%)	0.84 (0.09)	11.11**
Indefinite nominal	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	
Determinate nominal	3 (0.4%)	0.40 (0.02)	49 (13.4%)	1.90 (0.16)	18.65***
Personal nominal	138 (28.2%)	2.70 (0.15)	243 (64.6%)	3.74 (0.20)	17.25***
Possessive nominal	0 (0.0%)	0.00 (0.00)	1 (0.2%)	0.18 (0.01)	1.00
Ellipsis (Zero anaphora)	324 (63.1%)	4.85 (0.15)	69 (18.6%)	1.73 (0.14)	81.94***

p < .01 *p < .001

Note. Mean proportion was put in parentheses.

While appropriate use of referential strategies was the rule, some children used inappropriate nominal forms (i.e., bare nominal in Chinese and determinate nominals in English) for reference maintenance. The form of each repeated term such as *xiao3nan2hai2* 'little boy' and 'the boy' is grammatically correct in the Chinese and English language systems, but not linguistically appropriate for the identification of successive mentions of the same referent. The difficulty of mastering the use of pronouns or zero pronouns in Same Subject Context can be explained in that children were unable to hold the previous antecedent in their working memory and to deal with the antecedent in a presupposing way (Baddeley, 1986).

Besides, the overuse of determinate nominals in maintaining reference was observed in some students' English narratives, which suggests that an L2 error of overgeneralization may be another factor in students' selection of English strategies for reference maintenance. Overgeneralization errors arise when the learner creates a deviant structure based on another structure in the target language (Ellis, 1994). In addition, similar to the results found in the analysis of reference introduction, there were a few cases in which children made use of bare nominals to sustain the same referents due to the negative influence of their native language.

Regarding children's frequent use of ellipsis to sustain the same characters in their English narratives, some mistakes occurred because of the slight difference between Chinese and English in using ellipsis. In English, ellipsis is like substitution in which the repeated item is replaced by zero (Halliday & Hasan, 1976). Since English is a subject-prominent language, an ellipted noun or pronoun should appear following a conjunction, such as 'and', 'but', 'or', etc. Unlike English, a subject

is optional in Chinese, and a sentence can start without a noun or pronoun as the subject in the beginning but with a verb phrase to initiate a new sentence to sustain the topic. Such cross-linguistic difference possibly induces errors for language learners.

Analysis of reference switching

The distribution of referential appropriateness in children's use of Chinese and English strategies to mark shifts in reference back to a mentioned (but not adjacent) referent is listed in Table 9. As shown in Table 9, reference appropriateness is significantly associated with language differences for reference switching ($X^2 = 22.77, p < 0.001$).

Unlike the findings for children's use of Chinese nominal types for referent introduction and maintenance, it seems more difficult for the students to choose appropriate Chinese referential expressions to maintain referents in Switched Subject Contexts. The percentage of referential appropriateness for reference switching in the students' Chinese narratives is 88.8%, which is much lower than 98% for introduction and 91.4% for maintenance. Conversely, in children's English narratives, the percentage of appropriate nominal forms for successive mention of the referents in Switch Subject Contexts is the highest (85.0%) compared to that for reference introduction (67.5%) and maintenance (81.7%). These findings suggest that in comparison to the other two discourse contexts, the Switch-Subject context may be the least difficult for the children to choose the most appropriate English referential strategies, whereas it may be the most difficult in making appropriate reference in Chinese – a counterintuitive notion.

Table 9. Distribution of children's use of referential strategies for successive mention of referents in Switch Subject Context

Category	Chinese Narratives (N = 30)		English Narratives (N = 30)		X^2 (df = 2)
	M	SD	M	SD	
Appropriateness	478 (88.8%)	7.14 (0.11)	380 (85.0%)	5.30 (0.09)	
Inappropriateness	0 (0.0%)	0.00 (0.00)	0 (0.0%)	0.00 (0.00)	
Incorrectness	1 (0.2%)	0.18 (0.01)	21 (4.7%)	0.94 (0.05)	
Ambiguity	59 (11.0%)	1.43 (0.11)	46 (10.3%)	1.36 (0.09)	
Total	538 (100.0%)		447 (100.0%)		22.77***

*** $p < .001$

Note. Mean proportion was put in parentheses.

In addition, the results in Table 9 illustrate that reference ambiguity happened both in children's Chinese and English narratives when switching reference. It appears that although the elementary school children were expected to be cognitively mature enough to produce narratives with referential clarity in their native language, some of them seemed to have slight problems in making clear reference in Switch Subject discourse context. A close examination on the distribution of each type of Chinese and English referential device that children employed to switch reference may explain this phenomenon (see Table 10).

In Chinese, more explicit nominal forms such as bare nominals, determinate nominals, and possessive nominals are regarded as appropriate forms for successive mention of a referent in Switch Subject Context. As shown in Table 10, bare nominals, on average, occurred most frequently in children's Chinese narratives.

With regards to English, subsequent mention of the same referent as the subject of the main clause in Switch Subject Context is realized through the most appropriate referential form of determinate nominal (67.5%).

As mentioned earlier, more explicit nominal forms are regarded as the most appropriate devices for referent switching in Chinese and English. In some cases, the narrators used pronouns in Switch Subject Contexts which occurred both in their English and Chinese narratives. Use of pronominal forms to mark shifts back to the referents that had been mentioned in the prior main clause may be because the switched referent is deemed to be the most highly thematic identity in the story. Under this circumstance, the interrupted referents might not interfere with the thematic continuity, and the use of pronominals for switching reference might not cause ambiguity.

Table 10. Distribution of children's use of referential strategies for successive mention of referents in Switch Subject Context

Nominal Types	Chinese Narratives (N = 30)		English Narratives (N = 30)		F (1,58)
	M	SD	M	SD	
Bare nominal	338 (59.4%)	6.68 (0.20)	26 (6.0%)	1.33 (0.11)	69.84***
Indefinite nominal	1 (0.2%)	0.18 (0.01)	4 (0.7%)	0.43 (0.02)	1.35
Determinate nominal	55 (10.0%)	2.51 (0.12)	312 (67.5%)	5.65 (0.19)	57.55***
Personal nominal	96 (20.2%)	2.12 (0.15)	93 (22.7%)	1.94 (0.13)	0.04
Possessive nominal	19 (4.3%)	0.96 (0.07)	13 (3.1%)	1.33 (0.09)	0.44
Ellipsis (Zero anaphora)	29 (5.9%)	0.93 (0.07)	0 (0.0%)	0.00 (0.00)	32.56***

*** $p < .001$

Note. Mean proportion was put in parentheses.

Nevertheless, some of the students in the study overused pronouns for switching reference, which led to reference ambiguity about the character's identity (see Table 10). The following excerpt can serve as an example of this problem:

- 01 boy (the boy) found his frog is lost.
- 02 and he found everywhere at his home.
- 03 and he go to the window and found.
- 04 then his dog fall down.
- 05 and he is standing.

The child made use of pronoun 'he' to maintain reference to the boy (in lines 02–04) after 'the boy' has been mentioned in line 01. But the use of pronoun 'he' caused ambiguity when switching reference back to the boy in line 05- 'he' can be referring to 'the boy' or 'the dog.' In fact, according to the picture, it is 'the boy' rather than 'the dog' standing at the time the dog fell down. In this case, the referent in line 05 should be shifted to 'the boy.' A more explicit nominal form 'the boy' should be used to avoid reference ambiguity.

The failure to make clear reference in Switch Subject Contexts may be attributed to a shift of perspective from different characters in the story. Switching referents poses greater difficulty for child narrators because they have to be able to hold the preceding clause in working memory. It is linguistically more challenging to select a particular noun phrase than to use more implicit pronouns or ellipsis. That is, to mark shifts of referents clearly is not as simple a task as to maintain reference. It seems to be even more difficult for second/foreign language learners with limited language skills to build a mental model that involves cognitive constraints while they are engaged in processing longer stretches of discourse (Gutiérrez-Clellen, 2002). Consequently, reference ambiguity is likely to happen if reference switching is realized in an implicit way.

Moreover, for the children who were capable of making appropriate and explicit reference in Switch Subject Contexts in Chinese narratives but failed to do so in English narratives, the overgeneralization of pronominal use is possibly a factor that caused the confusion. In addition, referring to Table 10, the usage of bare nominals (with the exception of proper names) also occurred (though not frequently) in children's English narratives in a reference-switching situation. Congruent with the findings presented in the previous sections for the analysis of referent introduction and maintenance, the incorrect use of bare nominals is deemed an error due to L1 interference. As for children who used pronominal strategies to mark the shifts to the referents both in Chinese and English narratives, the effect (positive in this case) of L1 on L2 is also relevant.

Discussion

Children's similar use of Chinese and English referential strategies

In the present study, some empirical evidence reveals that there are similarities between the children's use of Chinese and English referential strategies. First of all, similarity between children's use of Chinese and English referential devices in oral narratives in the present study is evident by the children's correct use of indefinite noun phrases to introduce story characters for the first time. The observations emerging from Table 6 indicate that in the research, the children chose indefinite nominal forms for referent introduction in Chinese and English narrative production over 50% of the time. This holds true when further examining children's use of referential strategies for reference maintenance and switching across Chinese and English. In Mandarin Chinese and English, more presupposing forms of pronouns are expected to be used for given information like repeated referents in Same Subject Contexts, whereas more explicit forms are used to reintroduce the entities that have been referred to in Switch Subject Contexts.

The similarities between L1 and L2 provide a ground for Chinese EFL learners to reset their L1 referential skills successfully into that of L2 (Ellis, 1994). This finding is consistent with the study of Gass and Selinker (1983), who claimed that a learners' first language could provide a foundation upon which further language development could be constructed. These findings could also support Cummins' (1981) assertion that concepts developed in L1 can be transferred to L2, demonstrating the transferability of language skills across languages (e.g., Cummins et al., 1984; Verhoeven, 1994; Su, 2001).

Errors in children's use of English referential strategies

In the present study, some errors were observed in children's use of English nominal referent forms in narrative. Table 11 displays the types of erroneous referential forms in children's English narratives compared to children's correct use of Chinese referential strategies.

One of the reasons why some children made mistakes in producing correct English references across discourse contexts may thus be due to the negative influence of L1 on L2 (Kang, 2003; Pavlenko & Jarvis, 2002; Stavans, 2003). The linguistic differences between Chinese and English in the use of determiners and ellipsis might impede Chinese children from learning English referential strategies. Another reason for these difficulties could be the children's inability to apply their L2 linguistic knowledge about making references at a global level in the entire discourse. Even though the children in this study were young learners with higher

Table 11. Chinese EFL learners' incorrect use of English referential strategies compared to correct L1 strategies

Error type in English Narrative	Referential strategy in Chinese Narrative
Misuse of bare nominals for referent introduction	Correct use of bare nominals for referent introduction
Misuse of bare nominals for reference switching	Use of bare nominals for reference switching
Misuse of ellipsis for reference maintenance	Use of ellipsis for reference maintenance

levels of English proficiency, some of them still have not mastered the skill of producing accurate nominal forms in dealing with a more complex linguistic task in the target language, such as providing narrative discourse in English.

It is important to note that although the incorrect use of nominal forms produced in children's English narratives has reflected some L1 interference, such mistakes did not occur very frequently in this study. As shown in Tables 6, 7 and 9, incorrect use of reference introduction, maintenance and switching were 6.1%, 4.3% and 4.7% respectively. As Taylor (1975a) postulated, as a learner's proficiency increases, he/she will rely less frequently on his/her native language, and more frequently on what he/she already knows about the target language. There were relatively fewer instances of mistakes in L2 probably due to the high English proficiency of the children in this study.

Researchers have found that once learners have gained some exposure and familiarity with parts of the new system of the second language, more and more overgeneralization within the target language is manifested (e.g., Selinker, 1972; Taylor, 1975b). In the current study, the influence of the children's native language was not always to blame for their referencing mistakes. Instead, overgeneralization within the target language of English plays a major role in children's incorrect use of English referential strategies, especially in the function of referent introduction and referent switching.

The incorrect use of definite nominals occurred 26.7% of the time in the children's English narratives (see Table 6). This finding may account for the linguistic failures and difficulties in referent introduction by the Chinese EFL learners in this study. Chinese has no equivalent for the English indefinite article 'a' or 'an.' However, the demonstratives *zhe4* 'this' and *na4* 'that' in Chinese could be seen to function as the counterpart for the definite article 'the' in English. As a consequence, for Chinese EFL learners, the determinate nominal forms with a definite article seem to be much easier to acquire than the indefinite nominal forms with an indefinite article in English (Chen, 2002).

Another possible factor that operated in children's use of determinate expressions to introduce story characters may be the mutual knowledge shared between the narrator and the researcher (Chen, 2002). Because the researcher was by the narrator's side while he/she was telling the story of the presented picture sequence, the narrator might assume that the story characters and the narrated content were given information for the researcher. Under this circumstance, determinate nominals rather than indefinite nominals were likely to be used for referent introduction by the narrator. This concern should be considered as a crucial factor in future examination of making reference in discourse.

Several limitations of this study should be acknowledged. First of all, only thirty students from only one local public elementary school in Taipei City were selected as sample subjects in the research. The results may not generalize to other EFL situations in Taiwan, let alone other Mandarin-speaking locations. For further research, more participants from different areas should be studied.

Secondly, the narrative data collected in the study were limited to students with higher English proficiency. Learners whose English competence has not yet approached more advanced levels were excluded. In order to have a complete picture of to what extent the L1 influence may vary in EFL learners' narratives with different levels of English proficiency, further investigation should include more language learners with different proficiency levels in the target language.

Third, Chinese EFL learners' and native English speakers' performance in making reference when telling English stories should be compared to native English speakers' performance in future studies.

Fourth, the present study was constrained by use of a wordless picture book as a stimulus to elicit students' narrative production. Although such elicitation has proved valuable in the comparative analysis of cross-linguistic material (see Berman & Slobin, 1994), more studies need to be done across different types of narrative tasks and contexts, such as personal narratives about past experience, narratives generated in naturalistic settings, responses to designated conversational prompts, etc. The use of a wider range of materials will provide additional perspectives on what Chinese EFL learners lack and offer information to help them become more competent speakers in the target language.

Finally, children's use of referential strategies may be affected by their syntactic ability. Children's performance in using referential strategies should be compared to the syntactic complexity of their narrative sentences.

Despite these limitations, this study represents a first step to looking at Chinese EFL learners' oral narrative performance in using referential strategies in the target language. Further research is encouraged to keep on investigating Chinese-speaking children's English narrative skills as they are progressing in developing their English abilities.

Acknowledgements

This study was supported in part by funding from National Science Council of Taiwan to the second author (NSC96-2413-H-003-001). Special thanks go to the children and families who participated in this study.

References

- Baddeley, A. (1986). *Working memory*. Oxford: Clarendon Press.
- Bamberg, M. (1986). A functional approach to the acquisition of anaphoric relationships. *Linguistics*, 24, 227–284.
- Bamberg, M. (1987). *The acquisition of narratives: Learning to use language*. Berlin: Mouton de Gruyter.
- Berman, R. A. (1988). On the ability to relate events in narrative. *Discourse Processes*, 11, 469–497.
- Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cai, Q. F. (1996). *Storytelling: A study of children's use of referring terms*. Unpublished master's thesis. Providence University, Taichung.
- Carson, J. E., Carrell, P. L., Silberstein, S., Kroll, B., & Kuehn, P. A. (1990). Reading-writing relationships in first and second language. *TESOL Quarterly*, 24(2), 245–266.
- Chafe, W. L. (1979). The flow of thought and the flow of language. In T. Givón (Ed.), *Syntax and semantics Vol. 12: Discourse and syntax* (pp. 159–182). New York: Academic Press.
- Chang, C. (1998). The development of autonomy in preschool Mandarin Chinese-speaking children's play narratives. *Narrative Inquiry*, 8(1), 77–111.
- Chen, P. (1986). *Referent introducing and tracking in Chinese narratives*. Unpublished Doctoral dissertation. University of California, Los Angeles.
- Chen, S. H. (2002, January). *The development of discourse cohesion in young children's L2 narratives*. Paper presented at the first Cognitive Linguistics Conference, Taipei.
- Chu, C. C. (1979). *Linguistics: Theory, application, and Chinese syntax*. Taipei: Wen-he.
- Clancy, P. M. (1992). Referential strategies in the narratives of Japanese children. *Discourse Processes*, 15, 441–467.
- Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49(2), 222–251.
- Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. *Schooling and Language Minority Students: A theoretical Framework*. LA: Evaluation, Dissemination, and Assessment Center.
- Cummins, J., Swain, M., Nakajima, K., Handscombe, J., Green, D., & Tran, C. (1984). Linguistic interdependence among Japanese and Vietnamese immigrant students. In C. Rivera (Ed.), *Communicative competence approaches to language proficiency assessment: Research and application* (pp. 60–81). Clevedon, UK: Multilingual Matters.
- Dickinson, D. K., McCabe, A., Clark-Chiarelli, N., & Wolf, A. (2004). Cross-language transfer of phonological awareness in low-income Spanish and English bilingual preschool children. *Applied Psycholinguistics*, 25, 323–347.

- Edelsky, C. (1982). Writing in a bilingual program: The relation of L1 and L2 texts. *TESOL Quarterly*, 16, 211–228.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Fox, B. A. (1987). *Discourse structure and anaphora: Written and conversational English*. New York, NY: Cambridge University Press.
- Gass, S., & Selinker, L. (1983). *Language transfer in language learning*. Rowley, MA: Newbury House.
- Givon, T. (1990). Intercultural coherence. In T. Givon (Ed.), *Syntax: A functional-typology introduction*, Vol. II, (pp. 825–891). Amsterdam: John Benjamins.
- Gutiérrez-Clellen, V. F. (2002). Narratives in two languages: Assessing performance of bilingual children. *Linguistics and Education*, 13(2), 175–197.
- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.
- Hickmann, M., & Hendriks, H. (1999). Cohesion and anaphora in Children's narratives: A comparison of English, French, German, and Mandarin Chinese. *Journal of Child Language*, 26, 419–452.
- Hsu, Y. C. (2003). *The development of Taiwanese EFL children's speech act performance: Social variables and request strategies*. Unpublished master's thesis. National Taipei Teachers College, Taipei.
- Huang, S. (1992, July). *Getting to know referring expression: Anaphor and accessibility in Mandarin Chinese*. Paper presented at the fifth Conference on Computational Linguistics, Taipei.
- Kang, J. Y. (2003). On the ability to tell good stories in another language: Analysis of Korean EFL learners' oral 'Frog Story' narratives. *Narrative Inquiry*, 13(1), 127–149.
- Kellerman, E., & Smith, M. S. (1986). *Crosslinguistic influence in second language acquisition*. New York, NY: Pergamon.
- Li, C., & Thompson, S. (1979). Third-person pronouns and zero-anaphora in Chinese discourse. In T. Givon (Ed.), *Syntax and semantics Vol. 12: Discourse and syntax* (pp. 311–355). New York, NY: Academic Press.
- Li, C., & Thompson, S. (1981). *Mandarin Chinese: A functional reference grammar*. Berkeley, CA: University of California Press.
- Lin, I. L. (1992). *Anaphora in written and spoken Chinese narratives*. Unpublished master's thesis. National Taiwan Normal University, Taipei.
- MacWhinney, B. (2000). *The CHILDES project* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Maes, A. A. (1996). *Nominal anaphoras, markedness and the coherence of discourse*. Leuven: Peeters.
- Mayer, M. (1969). *Frog, where are you?* New York, NY: The Dial Press.
- McCabe, A., & Bliss, L. S. (2003). *Patterns of narrative discourse: A multicultural life span approach*. Boston, MA: Allyn & Bacon.
- McCabe, A., & Peterson, C. (1991). *Developing narrative structure*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- McCarthy, M. (1996). *Discourse analysis for language teachers*. Cambridge: Cambridge University Press.
- Odlin, T. (1989). *Language transfer*. Cambridge: Cambridge University Press.
- Pavlenko, A., & Jarvis, S. (2002). Bidirectional transfer. *Applied Linguistics*, 23(2), 190–214.

- Pearson, B. Z. (2002). Narrative competence among monolingual and bilingual school children in Miami. In D. K. Oller & R. E. Eilers (Eds.), *Language and literacy in bilingual children* (pp. 135–174). Clevedon, UK: Multilingual Matters.
- Peterson, C., & Dodsworth, P. (1991). A longitudinal analysis of young children's cohesion and noun specification in narratives. *Journal of Child Language*, 18, 397–415.
- Selinker, L. (1972). Interlanguage. *IRAL*, 10, 201–231.
- Stavans, A. (2003). Bilinguals as narrators: A comparison of bilingual and monolingual Hebrew and English narratives. *Narrative Inquiry*, 13(1), 151–191.
- Su, I. (1998). *Grounding and coherence in Chinese discourse*. Taipei: Crane.
- Su, I-Ru. (2001). Transfer of sentence processing strategies: A comparison of L2 learners of Chinese and English. *Applied Psycholinguistics*, 22, 83–112.
- Swain, M., & Lapkin, S. (1982). *Evaluating bilingual education: A Canadian case study*. Clevedon, England: Multilingual Matters.
- Taylor, B. P. (1975a). Adult language learning strategies and their pedagogical implications. *TESOL Quarterly*, 9, 391–399.
- Taylor, B. P. (1975b). The use of overgeneralization and transfer learning strategies by elementary and intermediate students in ESL. *Language Learning*, 25, 73–107.
- Verhoeven, L. T. (1994). Transfer in bilingual development: The linguistic interdependence hypothesis revisited. *Language Learning*, 44(3), 381–415.
- Wang, X. P. (1998). *A developmental study of acquisition of narrative skills by children in Taiwan* (Unpublished master's thesis). Fu-Jen Catholic University, Taipei.
- Wigglesworth, G. (1997). Children's individual approaches to the organization of narrative. *Journal of Child Language*, 24, 279–309.

Global and local connections in Mandarin-speaking children's narratives

A developmental study based on the frog story

Wen-hui Sah

This study examined Mandarin-speaking children's development in relating narrative events in terms of both global and local connections. Thirty Mandarin-speaking five-year-olds, 30 nine-year-olds and 30 adults participated. The narrative data were elicited using *Frog, where are you?* The plot-structure and the goal-plan schemes were used to examine participants' ability to maintain global connections; a complex event and a sequence of events were chosen to assess local connections. The results displayed children's significant progress in establishing global connections and in employing goal-plan knowledge. Regarding local connections, children exhibited increasing ability to encode and to integrate essential event components. Findings suggest that five-year-olds had insufficient ability to establish both global and local connections. Nine-year-olds were more advanced in encoding global connections; however, they were inadequate in integrating event components and in chaining a sequence of events at the local level. Adults could properly relate narrative events at both levels and were more likely to encode characters' internal responses to enhance thematic coherence. Results were considered in relation to capacities for working memory, theory of mind and integration. Narrators' differences in communicative competence and cognitive preferences were also discussed.

Keywords: narrative, Chinese, narrative structure, narrative development, children

Introduction

As narrative discourse provides rich information about children's development of discourse, literacy, and socialization abilities (Chang, 2000; Miller, Wiley, Fung, & Liang, 1997; Snow, 1991), it has long been of interest to researchers and regarded as a major component of various language assessment tools (McCabe, 1995;

Schneider, Hayward, & Dubé, 2006). Narratives consist of a network of associated events. To elaborately interpret a story, a narrator needs to not only understand individual events but also attend to interconnections among events. Previous research relied on a variety of schemes to explore how narrators relate categories of information in a narrative (Berman & Slobin, 1994; Stein & Glenn, 1979; Trabasso & Rodkin, 1994). The capacities for working memory and theory of mind are believed to have an impact on how well a narrator relates narrative information (Trabasso, Stein, Rodkin, Munger, & Baughn, 1992). Given the intriguing and significant role of narratives in children's development, the present work aims to explore Mandarin-speaking children's progress in relating narrative events.

When relating story events, a narrator needs to attend to both local and global aspects of the story. At the local level, the narrator must verbalize relevant components of a single event and should be able to infer the interrelatedness of a locally-defined chain of events; at the global level, the narrator should attend to the overall, hierarchical structure of the story plotline so as to organize information about characters, events and activities into a coherent whole. Put another way, the local aspect of narrative involves the horizontal alignment of linearly-ordered narrative events; in contrast, the global aspect emphasizes integrating and interconnecting narrative events along the vertical dimension. Berman and Slobin (1994) addressed the local and global story structure in terms of "event component" and "plot component," respectively, and detected age-related increases in establishment of event connections in both aspects. According to Berman and Slobin (1994), preschoolers had difficulty in embedding individual events within a network of associated circumstances and their stories were inadequate in both global and local aspects. Nine-year-olds were more mature than preschoolers in relating narrative events. Though nine-year-olds could elaborate individual events well, they were less likely than adults to construct globally coherent narratives.

Berman and Slobin (1994) used plot components as criteria to examine narrative structure. Plot decomposition was, however, previously advanced by Stein and Glenn (1979). They proposed to decompose "plot" into a structure of a setting plus a series of episodes and assumed that categories of information in a narrative could be linked via causal, temporal, or logical connections. Following this line of reasoning, Trabasso and Rodkin (1994) also suggested that plot should be decomposed to analyze narrative structure, since the plot scheme is too abstract to demonstrate psychological validity. In particular, Trabasso et al. (1992) considered a goal-plan paradigm to be an alternative to examine narrative construction, given its significant role in the research of language comprehension, problem solving and event representation (Schank & Abelson, 1977; Scholnick & Friedman, 1987). These researchers assumed that narrative information is organized in terms of goals and plans of action and that a hierarchical goal plan functions as the

conceptual basis underpinning narrative representations. Accordingly, if narrators apply goal-plan knowledge, they should relate narrative events consistently, and a goal plan is thus inferable from the overall plotline.

The importance of goals and plans is noted in the study by Stein and PolICASTRO (1984), in which older children and adults relied on the presence of goal-directed action in judgment on the "good" stories. Trabasso and Nickels (1992) found that five-year-olds could encode and trace goals and plans of story protagonists in their narratives. More importantly, Trabasso et al. (1992) used "planning components" as criteria to analyze narrative structure and to infer the use of goal-plan knowledge in on-line narration tasks. Their data yielded an age-related developmental progression. To be precise, five-year-olds seemingly could sustain their use of goal-plan knowledge to encode events selectively; however, they did so at a much lower rate than did nine-year-olds and adults. In contrast, nine-year-olds and adults performed at very high levels in applying goal-plan knowledge to integrate events coherently. It is worth noting that goal-plan analysis may not only function as an extension of rhetorical plot analysis but also provide a psychological explanation for it.

In investigating how narrators apply goal-plan knowledge to impose explanatory coherence on narrative information, a distinction is established between individual events and extended sequences of events. Research has shown that, with increasing age, children's narration changes from isolated descriptions of individual events to coherent sequences organized by causal relationships and goals (Stein & Glenn, 1979; Trabasso et al., 1992). Another related developmental advancement is uncovered in Bamberg and Marchman's (1990) work. Their analysis revealed that younger children first marked episodic boundaries to highlight discourse units at the local level. These linguistic markers, however, were used differently by older children and adults to signal and integrate larger discourse units so as to build up a global, coherent narrative whole. In addition to the advanced use of episodic markers, increasing ability in integrating narrative elements was also evident in Bamberg and Damrad-Frye's (1991) research on frames-of-mind (FOM) references.¹ Bamberg and Damrad-Frye reported a distinction between young children's local preference and adult narrators' global orientation in emotion attribution and suggested that, with increasing age, children use FOM references more flexibly and rely more on the global story plotline. Recently, a similar local-to-global development was detected in a study of Mandarin children's emotion attribution (Sah, 2011), in which children showed different preferences toward locally-motivated emotion expressions and globally-triggered ones at

1. These references include words reflecting story characters' physical states, intentions, thoughts, emotional motivations and reactions.

different developmental stages.² Taken together, previous research revealed children's narrative development from differentiating local details in narratives to integrating pieces of information into a more complex, coherent theme.

In recent decades, a majority of the exploration of Mandarin-speaking children's narrative development has examined the narrative ability of typically-developing preschool children (e.g., Chang, 2004; Chen, Chang, & Chen, 2011; Li, 2012; Lin, 2000; Sah, 2007; Tsai, 2011; Wang, 1998). Many of these studies used high-point analysis or story grammar to analyze preschoolers' narrative structure. Less is known about older Mandarin children's ability to relate narrative events. Even less is known about how Mandarin children employ goal-plan knowledge to construct narratives. Many prominent endeavors adopted a cross-sectional research paradigm to investigate narrative development by examining data based on the frog story (e.g., Berman & Slobin, 1994; Trabasso & Rodkin, 1994); nevertheless, only a few studies (Chang, 1995; Li, 2012; Wang, 1998) on Mandarin-speaking children followed this paradigm. Among them, Chang's (1995) research included both preschool and school-age children, while the other studies focused on only preschoolers (Li, 2012; Wang, 1998). Given that this is the case, no viable comparisons pertaining to event connections can be made with earlier findings of children speaking other languages. Another limitation of previous research on Mandarin children lies in that it addressed children's event-connecting ability by only looking at either locally-connected events (Sah, 2007) or global story structure (Chang, 2001; Li, 2012). It is important to explore how Mandarin children relate both locally- and globally-connected events. To extend the line of frog-story-based investigation and to confirm and amend previous findings on children's ability to relate narrative events, the present study aims to explore how Mandarin-speaking children establish both global and local connections by posing the following research questions.

1. Is there any difference in Mandarin-speaking five- and nine-year-olds' ability to establish global connections?
2. Is there any difference in five- and nine-year-olds' ability to encode local connections for a complex event?
3. Do five- and nine-year-olds relate a sequence of locally-connected events differently?

2. In Sah's (2011) study, five-year-olds' emotion attribution was mostly triggered by local situations. Most nine-year-olds' emotion expressions were motivated by local situations, while a few of them could consider both local and global aspects of the story while attributing emotional states. The adults, however, took into consideration both local details and overall thematic structure.

Method

Participants

Participants included 60 children and 30 adults. The children were divided into two age groups: 30 five-year-olds ($M_{\text{age}} = 5;8$) and 30 nine-year-olds ($M_{\text{age}} = 9;6$). They were all typically developing children, with no learning disabilities, or speech or hearing problems. In addition, 30 college students ($M_{\text{age}} = 19;5$) also participated in this study. There were an equal number of participants of each gender in each group. All the participants were from similar middle-class socio-economic backgrounds.

Materials

Much research of narrative development has focused on data collected from children's renderings of the content of the wordless picture book *Frog, where are you?* (Mayer 1969), for researchers consider this book to be a very reliable tool for tapping children's budding narrative abilities (Bamberg & Marchman, 1990; Berman & Slobin, 1994; Trabasso & Rodkin, 1994). To control the content of fictional narratives, we also used the frog story to elicit narrative production. It is a typical children's story with a hero, a problem, a series of actions following the problem, and a happy ending.³ This book was chosen not only because it has become a worldwide research tool, but also because it is wordless and its structure has been extensively analyzed (e.g., Bamberg & Marchman, 1990).

Procedure

The interviews were carried out individually with each participant, and consisted of an initial warm-up conversation followed by a narrative task based on *Frog, Where are You*. The participants were first asked to look through the entire book and then asked to tell a story while looking at the pictures. The interviews were audio-taped and subsequently transcribed.

3. The frog story is about a boy and his quest to find his missing pet frog. Its scenario is as follows: A boy has a pet dog and a pet frog. While the boy and his dog go to sleep one night, the frog gets out of the jar where it has been kept. When the boy wakes up the next morning, he finds the jar is empty and realizes that the frog has gone. He decides to search for his frog, and begins his quest, first inside the bedroom, then outside the house. Together with the dog, the boy visits many places, including a hole on the ground, a hole in a tree, a rock, and a log. They encounter various obstacles, and finally find the missing frog with a mate and a clutch of baby frogs.

Data analyses

In order to verify the accuracy of transcriptions, a second trained examiner checked each transcript. Then, 25% of the narratives were randomly chosen and coded by a second coder for reliability. Inter-rater agreement for all measures exceeded .90 (Cohen's Kappa coefficient). Coding discrepancies were discussed and resolved through consensus.

After the transcriptions were done, both quantitative and qualitative analyses were performed to assess the ways in which the participants related events in the story. Since this study was based on a picture book, the local aspect of relating events involves abstracting information from each individual picture, weaving together pieces of information from the bottom-up and establishing interrelationships between details. On the other hand, the global aspect relates to a hierarchical organization about the story plotline and involves conceptual representation through which narrators cluster pictures together into a skeleton of the story.

To make viable the comparison with earlier findings, we assessed narrators' encoding of global connections for the story in terms of three cardinal plot components adopted in Berman and Slobin's (1994) scheme. As Berman and Slobin stated, among an infinity of potential versions of the frog story, it is possible to extract a common plotline consisting of loss, searches and recovery of the frog. The researchers focused analyses on the three plot components out of a rhetorical plot structure derived from Labov and Waletzky's (1967) framework. The definitions for these components are stated below.

Component I, or the onset part, is scored if a narrator explicitly mentions the boy protagonist's cognizance of the frog's disappearance.

Component II, or the unfolding part, is scored if a narrator explicitly mentions searching or calling for the frog outside the bedroom.

Component III, or the resolution part, is scored if the frog the boy takes home is explicitly mentioned as the same or as a substitute for the lost pet frog.

The importance of these components has been discussed in previous studies (Aksu-Koç & Tekdemir, 2004; Bamberg & Marchman, 1990; Chou & Chang, 2008; Trabasso & Rodkin, 1994). For instance, the onset and resolution parts are regarded as the frame that sustains the search motif of the story, while the unfolding part helps to move the plot to the next episode (Bamberg & Marchman, 1990).⁴

In spite of its significance, the rhetorical plot structure is, however, considered too abstract by some researchers. Instead, a framework of hierarchical goal plans is advanced to assess narrative structure. As Trabasso and Rodkin (1994) suggested, a goal-plan scheme is feasible in terms of revealing psychological validity since

4. In Bamberg and Marchman's (1990) work, the onset, unfolding and resolution parts are referred to as instantiation, reinstatement and completion, respectively.

narrators tend to encode a protagonist's actions as relevant to a goal plan. Accordingly, in addition to the three cardinal plot components, we also applied the goal-plan scheme by using planning components, considered the essential content to encode for a narrative, as an alternative way to assess global connections. Our assumption is that the more planning components included, the better the global connection is established and thus the more coherent and complete the narrative is (Trabasso et al., 1992; Tsou & Cheung, 2007). Based on the frameworks of earlier studies, we scored several planning components which were categorized into different sections as (1) setting, (2) initiation, (3) attempt, and (4) outcome (Trabasso & Rodkin, 1994; Trabasso et al., 1992; Tsou & Cheung, 2007).

Due to the limited scope of the present work, our analyses for local connections focused on a complex event in Picture 3, and a sequence of events in Pictures 14 and 15 of the storybook. To successfully elaborate Picture 3, as Berman and Slobin (1994) indicated, a narrator needs to include background elements, plot-advancing elements and relevant circumstances. To compare results with previous findings, we thus adapted coding systems used in earlier research (Berman & Slobin, 1994; Trabasso & Rodkin, 1994) and considered five event components for this picture: (1) change of state (e.g., the boy wakes up); (2) temporal anchor (e.g., the next morning); (3) the protagonist's cognizance (e.g., the boy discovers/ notices that something happened); (4) the depicted or inferred state of affairs (e.g., the frog disappears); (5) the protagonist's reaction (e.g., the boy feels surprised or worried).

The sequence of events in Pictures 14 (the tree branches) and 15 (the deer's antlers) is often referred to as "the deer episode," for which a competent verbalization is expected to link the two events by explicitly stating the boy's misconception.⁵ This sequence imposes considerable burdens on three aspects of information processing, namely perceptual, conceptual and linguistic processing. It is thus considered the most challenging and complicated episode in the story, for even nine-year-olds failed to display fully mature ability to interpret it (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994). Given its complexity, the deer episode has been used to tap narrators' abilities to relate events and to infer story characters' theory of mind (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994; Chou & Chang, 2008; Sah, 2007). Based on the framework in previous research and the

5. Picture 14 functions as the background event for what happens in this sequence of events. To begin with, Picture 14 shows the boy-protagonist climbing up on a rock to call for his frog. While the boy is on the rock, he grabs something which he believes are tree branches. In Picture 15, the branches turn out to be a deer's antlers. These two pictures thus involve a misconception on the boy's part. The misconception of Picture 14 leads to Picture 15 and it further works as precursor of Pictures 16 and 17, which reveal the consequences of the boy's unintentional act. The interconnection among these pictures, though very intriguing, is beyond the scope of the present work. To better focus our discussion, we analyzed only the connections between Pictures 14 and 15.

data collected in the present work, we categorized narrators' interpretation into four types in which the two pictures may be treated as: I. one event or no event; II. two unrelated events; III. related events, with implied or no misconception; IV. related events, with misconception explicitly stated.

Results

Global connections: Cardinal plot components

The first research question pertains to the developmental trajectory of the ability to encode global connections, for which three cardinal plot components were stipulated as assessment criteria. The Kruskal-Wallis test for comparison of global connections indicates a significant age main effect, $\chi^2_{(6)} = 32.52, p < 0.01$. Further residual analyses suggest an ascending tendency for children to include more plot components as they grow older. Figure 1 exhibits apparent age-related increases in this regard. In particular, a sharp contrast manifests between the encoding of zero plot components and that of three components. That is, the five-year-olds were more likely to have zero components encoded than the other groups of participants. A reverse pattern, however, exists for the encoding of all three components.

The global narrative structure is considered established with explicit mention of all three cardinal plot components. As reported in Figure 1, 23% of the five-year-olds and 62% of the nine-year-olds explicitly mentioned the three core components, while over 90% of the adults achieved this. Results from Mann-Whitney tests reveal significant pair-wise differences: adults were significantly more likely to encode

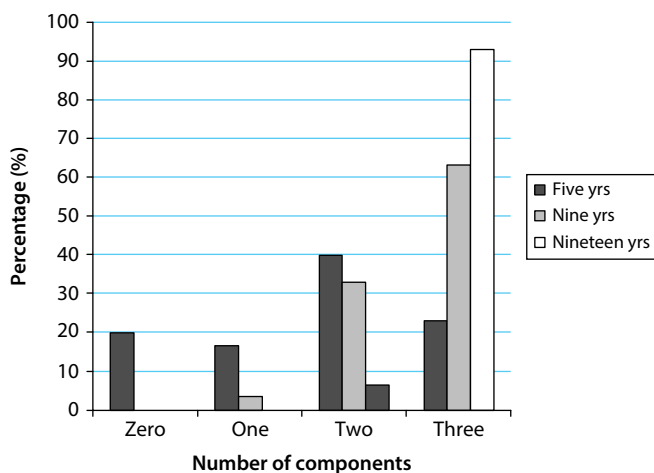


Figure 1. Percentage for total number of plot components encoded by per age group

all three components than nine-year-olds ($U = 291.00, p = 0.003$) and five-year-olds ($U = 131.50, p = 0.00$); and nine-year-olds performed significantly better than five-year-olds ($U = 285.00, p = 0.004$). The developmental progression obtained here is consistent with findings in other languages⁶ (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994). The cross-linguistic similarity leads us to speculate that the encoding of overall plotline may be mainly governed by general perceptual or cognitive abilities, rather than by language-specific expressions.

The ascending trend is again confirmed when we examined the age-related increase in proportion of explicit mention of each plot component. Figure 2 not only illustrates the age impact but also shows an increase in difficulty for encoding the three core components. Participants across all ages successfully encoded Component I (over 65%). For Component II, all nine-year-olds and adults successfully encoded it; only half of the five-year-olds, however, achieved this. A clear age-related difference is revealed for Component III: over 90% of the adults and 65% of nine-year-olds explicitly encoded this component, while only 50% of the five-year-olds related to it. A MANOVA (multivariate analysis of variance) yielded a significant main effect of age, $F = 10.13, p < 0.01$. Post hoc analyses showed that for Components I and II, nine-year-olds and adults performed significantly better than five-year-olds did ($F = 9.40$ and $F = 27.13$, respectively, $p < 0.01$). For Component III, the adults performed significantly better than five-year-olds ($F = 7.48, p < 0.01$); the difference between the two groups of children, however, failed to reach significance.

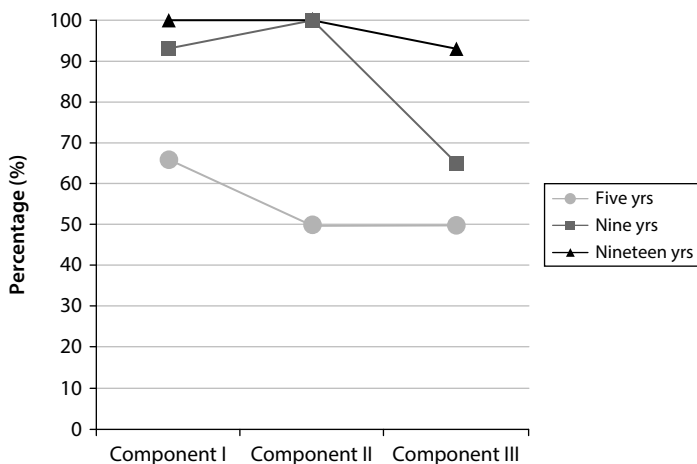


Figure 2. Proportion of narrators explicitly encoding each plot component

6. Similar developmental progression is also noted in five other languages: English, German, Spanish, Hebrew, and Turkish.

An alternative: Planning components

Rhetorical plot components constitute a baseline of a narrative and an analysis of this baseline can reflect a narrator's general narrative competence (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994). On the other hand, goal-plan knowledge is regarded as the conceptual basis underlying the abstract plot structure (Stein & Glenn, 1979; Trabasso et al., 1992). The use of goal-plan knowledge leads to narrative coherence (Trabasso & Rodkin, 1994) and is relevant to the completeness of a narrative (Tsou & Cheung, 2007). Given its significance in narrative construction, we also examined to what extent narrators of different ages used goal-plan knowledge. To this end, planning components were coded to infer narrators' ability to use goal-plan knowledge, and to assess the coherence and completeness of the narratives.

Table 1 reveals an age-related ascending trend in the proportions of narrators encoding the planning components, ranging from the setting through the outcome components. Put another way, a larger proportion of adults included planning components in their elaboration than did children; nine-year-olds performed better than five-year-olds.

To begin with, regarding the setting, nearly all participants introduced the frog at the very beginning of the story. Adults provided further elaboration by establishing the boy's possession of a beloved pet (93%), whereas less than half of the five-year-olds explicitly encoded possession. Highlighting the boy's ownership of the frog justifies the plan for searching and thus manifests a narrator's use of goal-plan knowledge (Trabasso & Rodkin, 1994).

The second section of planning components covers several initiating events. As illustrated in Figure 3, five-year-olds encoded most of the initiating events at markedly lower proportions than did the other two groups. In contrast, a larger proportion of adults encoded each initiating event and thus successfully established that the protagonist lost a valued pet, an undesirable situation. An ANOVA, based on the average scores of this section, yielded a significant main effect of age, $F(2, 86) = 21.77, p < 0.001$. Post hoc analyses further revealed a significant difference between adults and nine-year-olds and between the two groups of children.

Among the initiating events, the boy's sleep, the frog's escape and the boy's cognizance received most attention from participants of all ages. The boy's affective responses, however, were much less noted. Significant age effects were evident for the boy's sleep and the boy's cognizance; on the other hand, the age differences for the frog's escape and the boy's wake-up failed to reach significance. It is worth noting that the percentages of narrators who encoded affective responses were, respectively, from the youngest to oldest group, 0%, 28%, and 70%. This marked difference yielded a significant main effect of age ($\chi^2_{(2)} = 33.95, p < 0.001$) and was consistent with previous findings by Trabasso et al. (1992). As they contended, the

Table 1. Proportion of narrators of each age group encoding each planning component (%)

Planning Component	five yrs	nine yrs	nineteen yrs
Setting			
Introduce frog	97	100	100
Relationship	40	76	93
Initiation			
Boy sleeps	60	90	93
Frog escapes	73	90	93
Boy wakes	53	55	70
Boy notices	57	93	97
Boy responds	0	28	70
Average	48	71	85
Attempt			
Bedroom	43	86	93
Window	20	55	77
Outside the house	17	86	100
Hole in the ground	17	76	93
Hole in a tree	30	62	90
Rock	33	45	77
Log	33	41	70
Average	28	65	86
Outcome			
Find	53	66	80
Take	30	69	90
Find or Take	53	69	90

primary difference between younger children and older ones is that the younger children tended not to narrate emotion. Similar results were obtained in Sah's (2011) study of Mandarin speakers' emotion attribution. As the study indicated, inclusion of affective responses relates to narrators' knowledge about global story plotline and their ability to enhance narrative coherence.

According to Trabasso et al. (1992), narrators should be able to infer a protagonist's goal-plan and continue to encode new attempts along the goal path until the goal attainment is reached. The third section of planning components consists of such attempts, which reinstate the goal plan after the search has been suspended. As reported in Table 1, the mean proportions of narrators within each age group who encoded the attempts were, respectively, from the youngest to oldest group, 28%, 65%, and 86%. There was a significant main effect of age in encoding attempts, $F(2, 86) = 72.97, p < 0.001$.

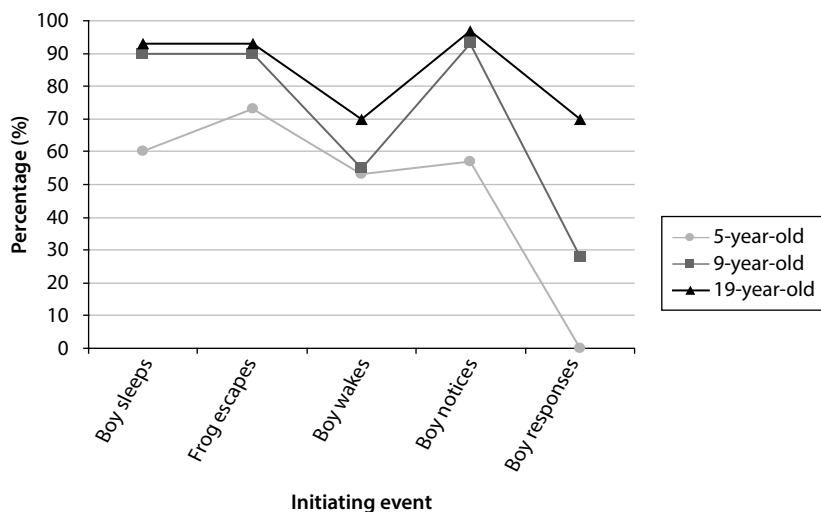


Figure 3. Proportions of narrators per age group encoding each initiating event

In addition to the establishment and maintenance of the story plotline, outcome – goal attainment – is another essential element for a coherent narrative. Previous research indicates that the goal attainment of the frog story is hierarchical with superordinate and subordinate goals. The attainment of the subordinate goal (to find the missing frog) is necessary for attainment of the superordinate goal (to repossess the missing frog) (Trabasso & Rodkin, 1994, Tsou & Cheung, 2007). Attainment of the subordinate goal consists of mention that the boy finds the frog: *zhen1de0 zhao3dao4 le0 ta1de0 xiao3 qing1wa1* ‘really finds his little frog’, or *yu2shi3 ta1men0 jiu4 zhao3dao4 na4zhi1 qing1wa1 le0* ‘therefore, they find that frog’. Attainment of the superordinate goal consists of mention that the boy repossesses the frog or takes home a substitute one: *ta1men0 jiu4 dai4 ta1men0de0 qing1wa1 hui2jia1 le0* ‘they then take their frog back home’, or *xiao3 nan2hai2 gen1 qing1wa1 fu1fu4 yao4 le0 yi4zhi1 xiao3 qing1wa1. ta1men0 jiu4 hen3 kai1xing4 de0 dai4 ta1 hu2jia1* ‘the little boy asks the frog couple for a little frog. They then happily take it home.’

The proportions of narrators for each age group who encoded the finding or taking home the frog are reported in Table 1. In general, there was a significant age-related increase in proportions of participants who encoded attainment of the superordinate goal, $\chi^2_{(2)} = 23.82$, $p < 0.001$, but not in those of the subordinate goal. Half of the five-year-olds, two thirds of the nine-year-olds and 90% of the adults referred to either of the goal outcomes, i.e., finding or taking, an increase that also reaches statistical significance, $\chi^2_{(2)} = 19.01$, $p < 0.001$.

As mentioned earlier, planning components are considered indicators of narrators’ use of goal-plan knowledge to integrate narrative information. In line with this reasoning, we hypothesized that the amount of planning components

Table 2. Average scores for encoding planning components, per age group

	five-year-old	nine-year-old	nineteen-year-old
Average Score	8	14	17

encoded may reflect narrators' ability to relate narrative events. As is indicated in Table 2, there is an age-related advancement in average scores for encoding planning components,⁷ which is statistically significant ($F(2, 86) = 73.13, p < 0.001$). This finding is similar to the developmental trend found with English-speaking children in that they increasingly apply the goal-plan knowledge to encode a sequence of events (Trabasso et al., 1992). The scores also reflect children's increasing ability to enhance coherence and completeness of a narrative.

Trabasso et al. (1992) believed that goal-plan knowledge underlies the plot structure advanced by Berman and Slobin (1994) and presumed correspondences between sections of planning components in the goal-plan scheme and major plot components in the rhetorical plot-structure scheme. According to them, the part incorporating "setting" and "initiation" sections in the goal-plan scheme underlie the "onset of the plot" in the plot-structure scheme, while "attempt" and "outcome" sections correspond to the "unfolding of the plot" and the "resolution of the plot" in the other scheme, respectively. The present study detected developmental progression in the establishment of global connections in terms of both schemes and considered that the goal-plan scheme provided a more detailed picture for the overall plotline by encoding various categories of planning components. The results support what Trabasso et al. (1992) asserted and provide evidence of the connection between major parts of the plot in Berman and Slobin's plot-structure scheme and sections of planning components in the goal-plan scheme, as indicated by the statistically significant correlations between the onset of the plot and the incorporating section of setting-initiation ($r = .69$), between the unfolding of the plot and the section of attempts ($r = .69$) and between the resolution of the plot and the section of outcome ($r = .47$).

Local connections: A complex event

The second research question pertains to narrators' developing ability to relate events at the local level by examining elaboration of a complex event. The analyses were focused on the scene in Picture 3 in terms of event components. We hypothesized that adults would be more likely to encode related event components than children and that older children would perform better than younger children in

7. The score of each participant is based on the total number of planning components encoded.

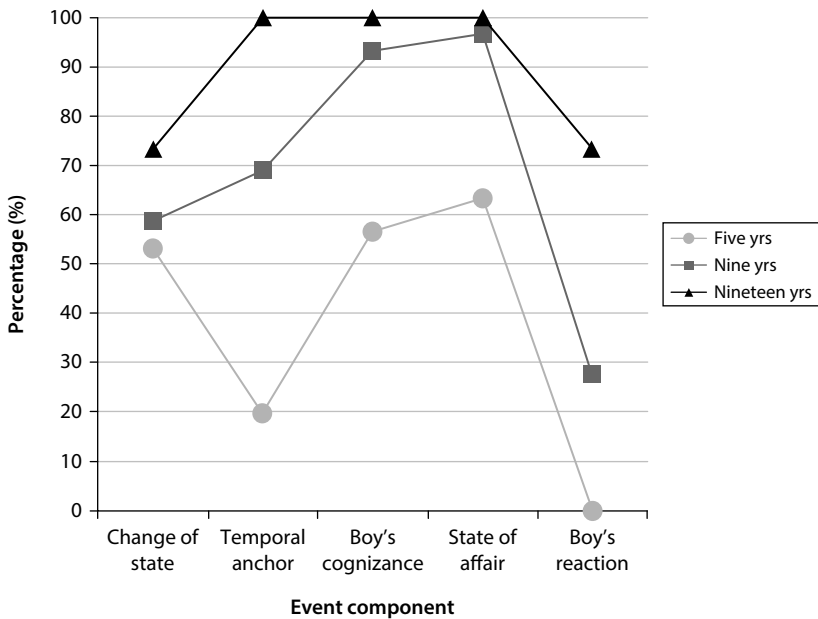


Figure 4. Proportions of narrators per age group encoding each event component for Picture 3

this regard. Figure 4 summarizes the proportions of narrators in each age group who encoded each event component. As expected, there was a significant main effect of age, $F(10, 158) = 11.71$, $p < 0.001$. Post-hoc analyses revealed significant age effects in all event components except the first one: “change of state”.⁸ In addition, most participants focused their elaboration on “the protagonist’s cognizance” and “state of affairs”. One sharp contrast between children and adults was that children were unlikely to encode the protagonist’s affective reactions. The absence of emotion attribution by five-year-olds is largely consistent with previous findings (Sah, 2011; Trabasso et al., 1992).

Figure 5 displays proportions of narrators from each age group who encoded different numbers of event components, from zero up to five components, and Kruskal-Wallis tests indicated a significant main effect of age, $\chi^2_{(6)} = 40.81$, $p < 0.001$. In our data, only 7% of the five-year-olds and 30% of the nine-year-olds included all five components, while most adults achieved this (73%). Results from

8. The event component “change of state” refers to the boy’s wake-up in the next morning. It is not only considered an important component for the local event in Picture 3 but also identified as one initiating event of the global structure. In the statistical analyses of planning components, there was no significant age difference regarding this component.

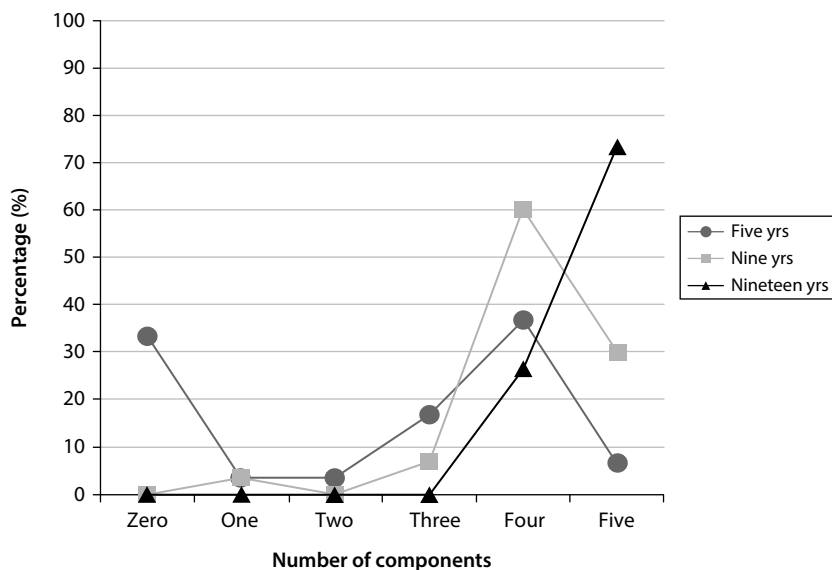


Figure 5. Total number of event components encoded for Picture 3, by proportions of narrators per age group

Mann-Whitney tests revealed significant pair-wise differences between adults and nine-year-olds ($U = 233.00, p < 0.001$), and between adults and five-year-olds ($U = 210.00, p < 0.001$); the difference between the two groups of children, however, failed to reach significance.

It is worth noting that 33% of the five-year-olds failed to include any essential event components but merely interpreted this scene as a static picture (Excerpt 1), while slightly more of them (37%) encoded four components (Excerpt 2). The English and Hebrew preschoolers encoded this scene with a preference of two or three event components (Berman & Slobin, 1994); their Mandarin counterparts, however, appeared to encode either zero or four components. As Berman and Slobin (1994) note, five-year-olds are not a homogeneous group; great individual variation is thus likely to reveal itself.

The younger children's static descriptions correspond to Trabasso et al.'s (1992) earlier finding that five-year-olds' narratives consisted mostly of a description of observable states or activities with only temporal links. Such a pattern dovetails with the characteristics of "local temporal", one of the three patterns of narrative organization identified by Shen (1990), which is also the typical pattern for five-year-olds noted by Berman and Slobin's (1994).

Most nine-year-olds included four components in their elaboration (60%), which is consistent with the pattern found in English and Hebrew children

(Berman & Slobin, 1994). It is worth noting the difference between Excerpts 2 and 3: though both children included four components, the five-year-old seemingly considered “change of state” (the boy’s wake-up in Excerpt 2) as an essential element to encode, while the nine-year-old regarded the protagonist’s internal reaction (the boy’s strange feeling in Excerpt 3) as worthy of mention. A more mature elaboration by a nine-year-old is found in Excerpt 4, with all five components encoded. This child not only encoded the boy’s affective reaction as *dan1xin1* ‘worried’, but indicated that the frog is the boy’s “beloved” pet, which motivates the search throughout of the rest of the story and helps enhance thematic coherence.

Unlike most children, all adults successfully related Picture 3 to the overall story plotline by encoding four or five components. In particular, 73% of the adults included all five components in their elaboration. Excerpt 5 exemplifies a typical interpretation of adults, which begins with background information such as the temporal clue *di1 er4 tian1 zao3shang4* ‘in the next morning’ and the change-of-state event *xiao3 nan2hai2 qi3chuang2* ‘the boy wakes up’, and ends up with the boy’s affective response *jin3zhang1* ‘nervous’. More significantly, Excerpt 5 elaborates not only the boy’s but also the dog’s affective response and hence exemplifies adults’ capacity to take different perspectives. The ability to adopt perspectives of various story characters can provide sound explanations of and motivations for what happened in the narrative (Martí, 2003) and relates to narrators’ theory-of-mind ability.

Excerpt 1: five-year-old, boy, zero component

- 01 *xiao3 nan2hai2 zai4 chuang2shang4*.
The boy is in bed.

Excerpt 2: five-year-old, girl, four components

- 01 *ta1men0 ge2tian1 zao3shang4 xing3lai2 jiu4 fa1xian4 na4zhi1 qing1wa1 yi3jing1 tao2zou3 le0*.
The next morning, they wake up and find that the frog has escaped.

Excerpt 3: nine-year-old, boy, four components

- 01 *ge2tian1 zao3shang4 xiao3 nan3sheng1 kan4 dao4 bo1li2 ping2 li3 de0 qing1wa1 bu2 jian4 le0*.
The next morning, the little boy finds that the frog in the jar is gone.
- 02 *ta1 jiu4 jue2de0 hen3 qi2guai4*.
He then feels very strange.

Excerpt 4: nine-year-old, girl, five components

01 *xiao3 nan2hai2 yi4zao3 qi3lai2 fa1xian4 ta1 xin1ai4 de0 qing1wa1 bu2jian4 le0.*

The little boy wakes up early in the morning and finds that his beloved frog has gone.

02 *jiu4 hen3 dan1xin1.*

He is very worried.

Excerpt 5: adult, male, five components

01 *di4 er4 tian1 zao3shang4 xing3lai2.*

When (he) wakes up the next morning,

02 *dang1 xiao3 nan2hai2 qi3chuang2 de0 shi2hou4 fa1xian4 ping2zi0 li3mian4 de0 gu1gu1 yi3jing1 bu4 zhi1dao4 dao4 na3li3 qu4 le0.*

the little boy gets up and has no idea where Gu-gu has gone.

03 *ta1 han4 wang1 wang1 gou3 liang3ge0 ren2 dou1 fei1chang2 jin3zhang1.*

Both he and Wong-wong the dog are very nervous.

Local connections: A sequence of events

The third research question addresses narrators' ability to establish local connections for a sequence of events. We based our analyses on the deer episode, Pictures 14 and 15, and categorized narrators' interpretation of this sequence into four types: I. one or no event; II. two unrelated events; III. related events with implied or no misconception; IV. related events with explicitly encoded misconception. Given that successful elaboration for this sequence is expected to use Type IV to establish explicit event connection and that such interpretation is highly demanding for young children in terms of information processing, we hypothesized that it would be most difficult for five-year-olds to use Type IV, whereas most adults would achieve this.

Figure 6 reports distribution of the four types of event relation and reveals the dominant type encoded by each age group. Type II was the dominant type considered by both groups of children; in contrast, adults preferred to use Type IV. Kruskal-Wallis tests determined that this effect of age was significant, $\chi^2_{(3)} = 37.00$, $p < 0.001$. Mann-Whitney tests revealed further information by exhibiting significant age impact for Type II and Type IV. For the former, significant pair-wise differences were found between adults and nine-year-olds ($U = 193.50$, $p < 0.001$), and between adults and five-year-olds ($U = 255.00$, $p < 0.001$). The difference between the two groups of children, however, failed to reach significance. Regarding

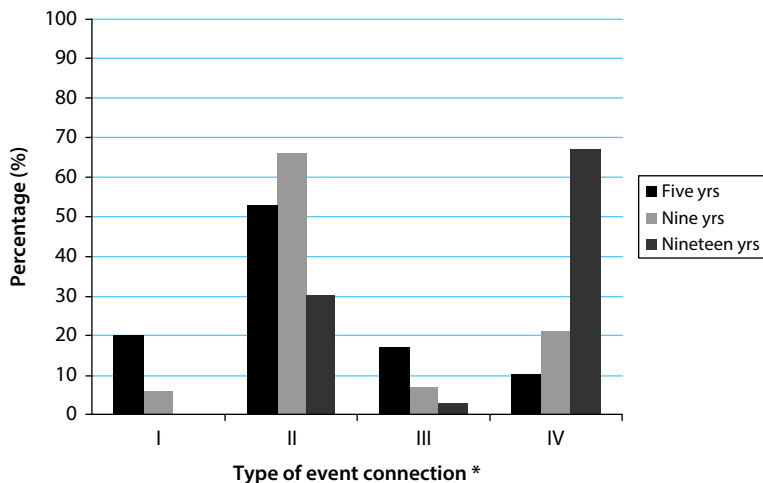


Figure 6. Proportions of narrators of each age group who encode different type of event relation
 (*Type I: one or no event; Type II: unrelated events; Type III: related events, misconception implied; Type IV: related events, misconception stated)

Type IV, our hypothesis about the developmental difference is confirmed. The proportions of narrators within each age group who encoded Type IV were, respectively, from the youngest to oldest group, 10%, 21%, and 67%. Results from Mann-Whitney tests displayed significant pair-wise differences between adults and nine-year-olds ($U = 162.50, p < 0.001$), and between adults and five-year-olds ($U = 120.00, p < 0.001$); however, the difference between the two groups of children was non-significant. In the following discussion, each type of event relation is illustrated by specific excerpt(s).

To begin with, some five-year-olds encoded the sequence in terms of static descriptions. As shown in Excerpt 6, the child merely focused on the appearance of an animal and tried to figure out whether the animal is a lamb, a deer, or a moose. Excerpt 7 exemplifies another five-year-old's interpretation, in which only one event — the tree branch scene — was encoded.

Excerpt 6: five-year-old, boy, Type I (no event)

- 01 *you3 you3 yi4zhi1 yang2.*
 There is a sheep.
- 02 *you4 you3 yi4zhi1na4ge0 na4ge0.*
 another one, that, that
- 04 *na4 shi4 she2me0 lu4 ya0?*
 What kind of deer is that?

- 05 *na4ge0 shi4 mei2hua1lu4 a0.*
That is a spotted deer.
- 06 *bu2shi4 zai4 xia4xue3 de0 na4bian1 you3de0.*
It does not belong in the snow.
- 07 *mi2lu4, o0 mi2lu4.*
Moose, oh, a moose.

Excerpt 7: five-year-old, boy, Type I (one event)

- 01 *ta1 kan4dao4 yi4zhi1 hen3 xiang4 yi2ge0 shu4gan4.*
He sees one thing that seems like a tree branch.

The second type of event relation interprets the sequence as two distinct events providing only temporal links. As is shown in Figure 6, most five-year-olds and nine-year-olds tended to encode this sequence as such: 53% and 66%, respectively. Excerpt 8 presents the elaboration from one five-year-old, in which the two events are linked via temporal connection. This way of linking one event to the next by using *then*, *and*, and *and then* is typical of most five-year-olds across languages (Berman, 1988). In Excerpt 9, though, the child encoded both “the tree branches” and “the deer’s antlers” scenes, he ascribed the transition to the boy’s carelessness: *jie2guo3 yi2 bu4 xiao3xin1 jiu4 diao4 dao4 lu4 de0 tou2shang4* ‘he falls upon the deer’s head due to his carelessness’. A more mature elaboration is shown in Excerpt 10, in which the child narrator not only added expressive flavor by using a direct quotation (*qing1wa1 ni3 zai4 li3mian4 ma0* ‘Frog, are you in there?’) but also provided explanation for the boy’s movement from the big rock to the deer’s head by noting the boy’s location (*you2yu2 ta1 shen1ti3 tai4 bian1bian1 le0* ‘because he is far too close to the edge of the rock’). This example reveals that nine-year-olds enhanced overall coherence by adding further explanation (not just temporal links) to the situations depicted in the story.

Excerpt 8: five-year-old, boy, Type II

- 01 *pao3dao4 da4 shi2tou2 shang4 qu4 zhao3 qing1wa1.*
(He) runs up to the big rock to look for the frog.
- 02 *ran2hou4 you3 yi4zhi1 lu4 ba3 ta1 zai4zou3 le0.*
Then a deer carries him away.

Excerpt 9: nine-year-old, girl, Type II

- 01 *ran2hou4 xiao3 nan2hai2 pa3dao4 da4 shu4 shang4.*
Then the little boy climbs the big tree.
- 02 *jie2guo3 yi2 bu4 xiao3xin1 jiu4 diao4 dao4 lu4 de0 tou2shang4.*
As a result, he falls upon the deer’s head due to his carelessness.

Excerpt 10: nine-year-old, boy, Type II

- 01 *xiao3 nan2hai2 ta1 pa2shang4 da4li3shi2.*
The little boy he climbs the big marble rock.
- 02 *dui4zhe0 sen1lin2 da4 han3 "qing1wa1 ni3 zai4 li3mian4 ma0?"*
He yells at the forest, "Frog, are you in there?"
- 03 *you2yu2 ta1 shen1ti3 tai4 bian1bian1 le0,*
Because he is far too close to the edge of the rock,
- 04 *lu4 de0 shen1ti3 yi4 shen1 chu1lai2,*
the deer comes out,
- 05 *ta1 de0 shen1ti3 jiu4 jia2 zai4 lu4 tou2 shang4mian4.*
his body falls right upon the deer's head.

Type III is more advanced in that it treats the sequence as two related events, though the misrepresentation is merely implied or not mentioned at all. Only 17% of the five-year-olds connected the two events by this type. Excerpt 11 provides such an example from one five-year-old: *ta1 zhua1zhu4 yi4zhi1 shu4zhi1 shi1 yi4zhi1 mi2lu4* 'he grabs onto a tree branch and it is a reindeer'. Although the child included the transition from tree branches to antlers in her elaboration, she failed to present the transition more explicitly by stating the boy's misconception. Despite the lack of misrepresentation, however, the series of direct quotations rendered the elaboration more expressive than those from her peers. More mature than Types I and II in terms of narrative coherence, Type III was, however, even less preferred by nine-year-olds (7%) and hardly considered by adults (3%). Excerpt 12 represents how one nine-year-old related the two pictures by Type III. Here, the child integrated the encounter of the deer into the tree branch scene by transforming a static branch into a dynamic object: *na4ge0 shu4zhi1 tu2ran2 shen1 le0 chu1lai2* 'there is a tree branch unexpectedly sticking out'. Similar but more elaborative interpretation is found in Excerpt 13. In addition to the use of direct quotations, the adult set up equation between the tree branches and the antlers so as to felicitously introduce the deer into the episode, though she failed to encode the boy's misrepresentation.

Excerpt 11: five-year-old, girl, Type III (misconception implied)

- 01 *ta1 zhua1zhu4 yi4zhi1 shu4zhi1 shi4 yi4zhi1 mi2lu4.*
He grabs onto a tree branch and it is a reindeer.
- 02 *ran2hou4 ne0 ta1 jiu4 shuo1 shuo1 shuo1, "xiao3wa1 ni3 zai4 na3li3 a0?"*
And then he asks, asks, asks, "Little frog, where are you?"

03 *ran2hou4 ne0 xiao3 lu4 jiu4 na4zhi1 mi2lu4 jiu4 ba3 xiao3 nan2hai2 zhe4yang4 diao4 qi3lai2.*

And then the deer which turns out to be a moose picks up the boy with its mouth.

04 *ran2hou4 ne0 na4ge0 xiao3 nan2hai2 jiu4 shuo1.*

And then the little boy says that.

05 *na4ge0 xiao3wen2 jiu4 shuo1 shuo1, "ni3 jiao4 she2me0 ming2zi0?"*

That Little Wen asks "What is your name?"

06 *"wo3 jiao4 xiao3lu4."*

"My name is Little Deer."

07 *ran2hou4 ne0 "ni3 you3 mei2you3 kan4dao4 wo3 de0 qing1wa1?"*

And then "Have you seen my frog?"

Excerpt 12: nine-year-old, boy, Type III (misconception implied)

01 *jie1zhe0 ta1 you4 zhao3 le0 shu4cong2 de0 shi2tou2 shang4mian4.*

Then he searches the rock with trees up there.

02 *na4ge0 shu4zhi1 tu2ran2 shen1 le0 chu1lai2.*

There is a tree branch unexpectedly sticking out.

03 *yuan2lai2 you3 yi4pi1 lu4.*

It turns out to be a deer.

Excerpt 13: adult, female, Type III (no misconception)

01 *ta1 yi2 bu4 yi2 bu4 de0 zou3 shang4 le0 da4 shi2tou2 de0 ding3duan1.*

He walks step by step onto the top of the rock.

02 *"xiao3 qing1wa1 ni3 dao4di3 zai4 na3li3?"*

"Frog, where on earth are you?"

03 *gan3kuai4 chu1lai2 a0."*

Hurry up, come out."

04 *zhe4shi2hou4 pang2bian1de0 shu4zhi1 tu2ran2 dong4 le0 qi3lai2.*

At the same time, the tree branch nearby unexpectedly moves.

05 *na4 shi4 yi4 zhi1 hao3 da4 hao3 da4 de0 mi2lu4.*

That is a big, big moose.

A clear age-related increase is evident for Type IV. Excerpt 14 shows one of the rare cases from five-year-olds in which the events were closely related by overtly negating the mistaken identity of the tree branch. Excerpts 15 and 16 are interpretations by nine-year-olds. These children seemed to be conceptually and linguistically better equipped, so they were able to link events by explicitly encoding the

boy's mistaken idea about the object before him: *ta1 yi3wei2 na4gen1 shi4 shu4zhi1...jie2guo3 shi4 yi2ge0 yi4zhi1 lu4* 'he thinks that it is a branch ... Yet, it turns out to be a deer' (Excerpt 15); *ta1 ba3 lu4 de0 jiao3 dang1cheng2 le0 shu4gan4 zhua1 zhe0 ta1* 'he holds onto the antlers which he considers to be the tree trunk' (Excerpt 16). Excerpt 17 illustrates one adult's elaboration, in which the narrator not only explicitly encoded the misconception but clearly stated how the boy realizes his mistake by noticing movement of the tree branches. The narrator further highlighted the similarity between antlers and tree branches, rendering the boy's misconception explicable. Such explanation embodies adults' advanced ability in logical reasoning which helps enhance coherent flow between successive events.

Excerpt 14: five-year-old, boy, Type IV (misconception negated)

- 01 *dao4 shu4shang4 yi3hou4, ta1 na4bian1 you3 shu4zhi1.*
After he gets up to the tree, there is a tree branch.
- 02 *jie2guo3 na4 bu2shi4 shu4zhi1;*
It turns out that it is not a tree branch;
- 03 *na4 shi4 yi4 zhi1 lu4.*
Instead it is a deer.

Excerpt 15: nine-year-old, boy, Type IV

- 01 *ta1 pa3dao4 xiao3 shan1qiu1shang4.*
He climbs up a little hill.
- 02 *fa1xian4 le0 yi2ge0 dong1xi1.*
(He) finds something.
- 03 *ta1 yi3wei2 na4gen1 shi4 shu4zhi1 jiu4 fu2 zhe0 na4ge0 dong1xi1.*
He thinks that it is a branch so that he holds on to that thing.
- 04 *jie2guo3 shi4 yi2ge0 yi4zhi1 lu4.*
Yet, it turns out to be a deer.

Excerpt 16: nine-year-old, girl, Type IV

- 01 *ta1 ba3 lu4 de0 jiao3 dang1cheng2 le0 shu4gan4 zhua1 zhe0 ta1.*
He holds onto the antlers which he considers to be the tree trunk.
- 02 *tu2ran2 lu4 de0 tou1 shen1 chu1lai2 ba3 xiao3 nan2hai2 gei3 jia2zhu4 le0.*
Suddenly, the deer sticks out its head and catches the little boy.

Excerpt 17: adult, male, Type IV

- 01 *ta1 pa2shang4 le0 da4 shi2tou2.*
He climbs up a big rock.

- 02 *shou3 wo4 zhe0 shu4zhi1.*
His hand is holding tree branches.
- 03 *ta1 da4jiao4, "Gua1gua1 ni3 zai4 na3li3?"*
He yells, "Guagua, where are you?"
- 04 *wo3 zai4 zhao3 ni3 ya0!"*
I am looking for you!"
- 05 *jie2guo3 ta1 shou3shang4 de0 shu4zhi1 tu2ran2 dong4 le0 qi3lai2.*
Then, the tree branches in his hand suddenly get into motion.
- 06 *wei4she2me0 shu4zhi4 hui4 dong4?*
Why can the tree branches move?
- 07 *yuan2lai2 na4shi4 lu4 de0 jiao3.*
They are actually the deer's antlers.
- 08 *ta1 cai2 fa1xian4 na4shi4 yi4zhi1 lu4 er2 bu2shi4 shu4zhi1.*
He then realizes that it is a deer rather than tree branches.
- 09 *lu4jiao3 zhang3de0 tai4 xiang4 shu4zhi4 le0.*
There is too much resemblance between the tree branches and the antlers.
- 10 *suo3yi3 ta1 mei2you3 zhu4yi4 dao4 na4 jiu4shi4 lu4jiao3.*
So he fails to notice they are antlers.

Taken together, our data on the deer episode imply that inferring the connection between events and hence explicitly encoding it by referring to the boy's misconception is beyond most five-year-olds' processing capacities. Such a limitation is consistent with findings based on children with various language backgrounds (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994; Sah, 2007). As Berman and Slobin (1994, p. 56) noted, mature rendering of this sequence of events requires "backtracking" in perceptual, conceptual and on-line linguistic processing. Such backtracking capacities take time to develop and thus our five-year-olds were unable to master them well, while nine-year-olds demonstrated marginally better skills regarding these. The present study, thus, supports the observation by Hedberg and Fink (1985) and Roth and Spekman (1986) that the ability to successfully interpret a complicated sequence of events might not fully unfold before children reach age ten.

Discussion

Most cross-sectional studies on narrative development of typically-developing Mandarin-speaking children are mainly restricted to preschoolers' narrative performance (Chang, 2004; Chen et al., 2011; Li, 2012; Lin, 2000; Tsai, 2011;

Wang, 1998). Little research has included both preschool and school-age children (Chang, 1995; Chang, 2001). On the other hand, only a few studies have relied on the frog story to tap Mandarin children's narrative ability (Chang, 1995; Chen et al., 2011; Li, 2012; Sah, 2007; Wang, 1998). The present work thus attempted to fill the gap by examining narrative development of both preschool and school-age children and by eliciting connected narratives based on the frog story, which combined makes it possible to compare and validate significant findings of other cross-sectional and cross-linguistic studies that used a similar research paradigm (Bamberg & Marchman, 1990; Berman & Slobin, 1994; Trabasso et al., 1992).

This study examined Mandarin children's development in relating narrative events on the basis of both global and local connections. The global connections were assessed in terms of rhetorical plot components and planning components. These two schemes delivered converging results that revealed children's developmental growth in general narrative competence and in building global connections, which lend support to previous research (Berman & Slobin, 1994; Trabasso et al. 1992). It is worth noting that Mandarin-speaking children and children of typologically different languages showed closely similar patterns for the encoding of plot components. This implies that the establishment of global structure for the story might be governed by general cognitive and perceptual abilities, rather than by language-specific linguistic forms.

Among earlier endeavors, only Chang's (1995) research observed Mandarin-speaking children of similar age groups as those in the present work and was also frog-story-based. The researcher used inter-episodic connections based on the causal network (Trabasso & Sperry, 1985) to assess global coherence, but failed to find a significant effect of age for it. Unlike Chang's (1995) work, our investigation included a larger sample and adopted different schemes, and confirmed the age impact found in children speaking other languages (Berman & Slobin, 1994; Trabasso et al., 1992). In particular, the analyses of planning components revealed children's increasing ability to enhance global coherence. In light of this, one merit of this study is to advance our knowledge about Mandarin-speaking children's narrative ability to establish global connections and to use goal-plan knowledge. Another merit is it supports what Trabasso et al. (1992) asserted by providing evidence for the connections between planning components and plot components.

In addition to the establishment of global connections, children's ability to organize information at the local aspect was also examined in terms of a complex event and a sequence of events. For the complex event, adults were more likely to encode related event components than were children, and older children performed better than younger ones. There was also significant development in elaboration of

the sequence of events, in which adults outperformed children in successfully verbalizing the event connections by encoding the protagonist's misconception. To sum up, the results revealed children's developmental advancement in establishing local connections, which are largely compatible with findings in previous research (Aksu-Koç & Tekdemir, 2004; Berman & Slobin, 1994). With increasing age, children appear to be more capable of encoding essential narrative elements and of integrating them into a coherent whole.

The aforementioned developmental advancement might be explicated from an information processing standpoint. Working memory is an integral part of the information-processing system (Baddeley & Hitch, 1974). Its storage and processing components are presumably relevant to constructing narratives based on a picture book, since narrators need not only to understand individual events portrayed in pictures but also to integrate and store the information as a memory representation. Given such complexity of narrating a picture-book story, better achievement in this regard would require larger working-memory capacity. In the study of goal-plan knowledge by Trabasso et al. (1992), one finding is suggestive. The researchers observed younger children's difficulty in encoding planning components and attributed this in part to children's limitation in working memory. According to Gathercole et al. (Gathercole, Pickering, Ambridge, & Wearing, 2004), age-related increases in working-memory capacity were detected for participants from age four through fifteen. In view of this, adults would be expected to have larger working-memory capacity than do children, and nine-year-olds would have an advantage over five-year-olds. As such, the developmental difference in working-memory capacity is likely to contribute to the age-related differences found in the present study. This interpretation is, however, speculative and open to further empirical inquiry.

Other than storing and organizing information, a successful narrator needs to construct a narrative in a manner that is understandable to listeners. To achieve this, the narrator should possess not only linguistic competence but also communicative competence. Trabasso et al. (1992) reported that older children showed a better understanding of Grice's (1975) maxim of quantity than did younger children. They believed that younger children's limited communicative competence was presumably relevant to the absence of certain essential information in narratives. Similar age impact also manifests in Bamberg and Marchman's (1990) research, in which children of different ages were found to have different assumptions about communicative necessity. As Bamberg and Marchman (1990) observed, five-year-olds tended to perspectivize the missing frog's location from the frog's perspective, though taking the boy's perspective might possibly lessen listeners' inferential load. In contrast, most nine-year-olds and adults encoded this from the boy's perspective. The difference in perspective-taking should not be

misinterpreted as narrators' success or failure to interpret the story. Instead, it reflects a narrator's decision-making for what should be included or discarded so that the story is understandable to listeners. As previous research speculates, narrative skills are related to narrators' ability to understand what listeners need to know so as to engage listeners in the storytelling process (Capps, Losh, & Thurber, 2000). Further research is needed to test such speculation.

The selection of needed information for effective communication is largely based on a narrator's assumption regarding listeners' shared knowledge about the on-going discourse. Such an assumption is relevant to a narrator's theory-of-mind ability. As indicated by Tager-Flusberg and Sullivan (1995), the theory-of-mind ability is essential to narratives, for a successful narrator should consider listeners' needs and perspectives to satisfy the requirements for communication. A narrator also relies on this ability to elaborate the psychological motivations and internal states of story characters to account for their actions so as to render a coherent representation. Given its significant role in narrative construction, the theory-of-mind ability is likely to influence the extent to which narrators encode narrative components and build up interrelationships between them. Put another way, this ability is seemingly decisive in inclusion and establishment of essential narrative components and thus is influential in the degree of explicitness of a narrative. Consequently it may contribute to the developmental differences exhibited in this study. This can be exemplified by the elaboration for Picture 3. Over 70% of the adults encoded the protagonist's affective response in order to motivate his subsequent action, while none of the five-year-olds did so. The absence of emotion attribution by five-year-olds might partly reflect narrators' judgment about the communicative necessity of including such information, and partly reveal younger children's limited ability to infer story characters' internal responses. Either interpretation, however, involves narrators' theory-of-mind ability, which takes several years to develop (Astington & Jenkins, 1999).

The emotion attribution for Picture 3 not only signals narrators' maturation in theory of mind, but also unveils their ability to integrate essential narrative information (Sah, 2011). Cognitively, it reflects a normal tendency to integrate elements into a higher level of organization (Frith & Happé, 1994; Mottron, Peretz, & Menard, 2000). The gradual unfolding of the ability to integrate relevant information is evident in research of narrative development. For instance, previous studies reported that the ability to relate narrative events exhibits developmental progression. Initially, preschoolers' narratives are full of object naming and description and they are likely to treat each scene as a discrete event. Children then gradually evolve to infer and establish proper interrelationships between events. These interrelationships may initially be local. With increased age, narrators can integrate local details with global organization and organize narrative events into a coherent

whole (Berman & Slobin, 1994; Sah, 2007, 2011; Shen, 1990; Trabasso & Rodkin, 1994; Trabasso et al., 1992). In Bamberg and Marchman's (1990) study, they reported that five-year-olds used markers of episodic boundaries to differentiate locally defined discourse units, while the same markers were used by adults to integrate narrative information into a global, hierarchical organization. The progression from differentiation (differentiating individual items/events) to integration (integrating individual things towards higher-order hierarchical structures) can be viewed as a backdrop which renders explicable the developmental patterns for encoding of evaluative comments, event relations, and episodic boundaries (Bamberg & Damrad-Frye, 1991; Bamberg & Marchman, 1990; Berman & Slobin, 1994).

As Bruner (1986) indicates, successful narrators must move between a landscape of action and that of consciousness and orchestrate perspectives of different characters so as to present coherent elaboration for a narrative.⁹ The deer episode is regarded as the most challenging part of the frog story because it requires the integration of landscapes at both levels. To elaborate this episode, a narrator needs to differentiate between his/her own omniscient perspective and the protagonist's lack of knowledge about the situation, and to employ linguistic means to encode each of the different stances involved (Berman & Slobin, 1994; Chafe, 1994). Accordingly, a mature narrator should explicitly encode the protagonist's misrepresentation and integrate this frame of mind into the temporal-causal network of events so as to construct a coherent interpretation. The age-related differences yielded in our analyses echo the observation in previous research that implies the ability to integrate the consciousness landscape (e.g., the boy's misconception) into the action landscape is a late development (Aksu-Koç & Tekdemir, 2004).

Five-year-olds' difficulty in integrating the landscapes may also be attributed to the precedence of an individual event over a sequence of events at their age. According to Piaget (1969), children between ages four and seven belong to the intuitive period of cognitive development. During this period, their understanding of objects or events mainly relies on the most salient perceptual features of the target items, rather than on the logical or rational thinking processes. This cognitive preference is also backed up by the research of distinction between appearance and reality, in which preschoolers' responses were mostly based on apparent perceptual features (Perner, 1991). Nine-year-olds belong to a different developmental stage of Piaget's framework, the concrete operational stage, and they perform better in providing logical links between things. Such difference in cognitive

9. According to Bruner (1986), "there are dual levels of organization inherent in narratives: a 'landscape of action' consisting of a sequence of events and serving the referential function; a 'landscape of consciousness' consisting of mental states of protagonists and serving the evaluative function" (p. 18).

preferences helps to explain why children of different ages performed differently in the present study: five-year-olds mostly valued details about individual events, while nine-year-olds focused more on ordering and connections between events, and their narrations became increasingly coherent. The adults, with mature cognitive abilities, can appropriately distinguish events and rearrange them into a hierarchical relationship. Accordingly, they are likely to present coherent narrative with appropriate elaboration in terms both of local and global connections.

With these analyses, this study points out the nature of developmental progression in making local and global connections in Mandarin-speaking children's narratives. Our outcome is largely consistent with previous studies based on typologically different languages. The results lead us to speculate that the similar developmental progression across languages may be governed by the development of common perceptual and cognitive abilities, rather than by the language-specific forms of expressions.

Acknowledgements

The empirical results presented in this article are based on the research project supported by the National Science Council of Taiwan (NSC 97-2410-H-004-114). Special thanks go to the children and their families who participated in this research. We also thank Kanyu Yeh and Angela Chen for their help with this study.

References

- Aksu-Koç, A., & Tekdemir, G. (2004). Interplay between narrativity and mindreading: A comparison between Turkish and English. In S. Strömquist & L. Verhoeven (Eds.), *Relating events in narrative: Typological and contextual perspectives* (pp. 307–327). Mahwah, NJ: Lawrence Erlbaum Associates.
- Astington, J., & Jenkins, J. (1999). A longitudinal study of the relation between language and theory-of-mind development. *Developmental Psychology*, 35, 1311–1320.
- Baddeley, A., & Hitch, G. (1974). Working memory. In G. H. Bower (Ed.), *The Psychology of Learning and Motivation* (pp. 47–89). New York, NY: Academic Press.
- Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competences. *Journal of Child Language*, 18, 689–710.
- Bamberg, M., & Marchman, V. (1990). What holds a narrative together? The linguistic encoding of episode boundaries. *Papers in Pragmatics*, 4, 58–121.
- Berman, R. (1988). On the ability to relate events in narrative. *Discourse Processes* 11, 469–497.
- Berman, R., & Slobin, D. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.

- Capps, L., Losh, M., & Thurber, C. (2000). "The frog ate the bug and made his mouth sad": Narrative competence in children with autism. *Journal of Abnormal Child Psychology*, 28, 193–204.
- Chafe, W. (1994). *Discourse, consciousness and time*. Chicago, IL: University of Chicago Press.
- Chang, C. J. (2000). *Narrative performance across contexts and over time: Preschool Chinese children and mothers*. Unpublished Doctoral dissertation. Harvard University, Boston.
- Chang, C. J. (2004). Telling stories of experiences: Narrative development of young Chinese children. *Applied Psycholinguistics*, 25, 83–104.
- Chang, J. W. (2001). *A developmental study of narrative structure and evaluative devices*. Unpublished master's thesis. Providence University, Taichung.
- Chang, P. Y. (1995). *ertong gushi jimo de fazhan: yi yinguo guanxi wanglu fenxi weili* [The development of child's story schema: A causal network discourse analysis]. Unpublished master's thesis. National Taiwan Normal University, Taipei.
- Chen, H. H., Chang, C. J., & Chen, H. F. (2011). xuelingqian youer de gushi jieyou fazhan: gushi wenfa zhi fenxi [Developing narrative structure in preschoolers' retelling of a story book: Episodic analysis]. *Bulletin of Educational Psychology*, 42(3), 359–378.
- Chou, Y. J., & Chang, C. J. (2008). qinzi gongdu dui youer xushuo gushi zhujiao xinshi zhuangtai de yinxing xiaogou [Effects of joint book reading on young children's narration of the mental states of story characters]. *Bulletin of Educational Psychology*, 40(2), 261–282.
- Frith, U., & Happé, F. (1994). Autism: Beyond 'theory of mind'. *Cognition*, 50, 115–132.
- Gathercole, S., Pickering, S., Ambridge, B., & Wearing, H. (2004). The structure of working memory from 4 to 15 years of age. *Developmental Psychology*, 40, 177–190.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. Morgan (Eds.), *Syntax and semantics* (Vol. 3, pp. 41–58). New York, NY: Academic Press.
- Hedberg, N., & Fink, R. (1985, Nov.). *Surface and deep structure characteristics of language disordered children's narratives*. Paper presented at the American Speech-Language-Hearing Association Convention, Washington, DC.
- Labov, W., & Waletzky, J. (1967). Narrative analysis: Oral versions of personal experience. In J. Helm (Ed.), *Essays on the verbal and visual arts* (pp. 12–44). Seattle, WA: University of Washington Press.
- Li, Y. C. (2012). *san han wusui ertong kantu shuogushi de kouyu xushi nengli fenxi* [Analysis of picture-elicited narrative in three- and five-year-old preschoolers]. Unpublished master's thesis. National Kaohsiung Normal University, Kaohsiung.
- Lin, L. C. (2000). xushiti zai xueqian youer fazhan zhong zhi gongneng tantao [Research on Taiwanese preschool children's narratives]. *Journal of National Hsin Chu Teachers College*, 13, 149–186.
- Martí, E. (2003). Strengths and weaknesses of cognition over preschool years. In J. Valsiner & K. Connolly (Eds.), *Handbook of developmental psychology* (pp. 257–275). London: Sage.
- Mayer, M. (1969). *Frog, where are you?* New York, NY: Dial Press.
- McCabe, A. (1995). Evaluation of narrative discourse skills. In K. N. Cole, P. S. Dale, & D. J. Thal (Eds.), *Assessment of communication and language* (pp. 121–142). Baltimore, MD: Paul Brookes.
- Miller, P., Wiley, A., Fung, H., & Liang, C. (1997). Personal storytelling as a medium of socialization in Chinese and American families. *Child Development*, 68(3), 557–568.
- Mottron, L., I. Peretz, & E. Menard. (2000). Local and global processing of music in high-functioning persons with autism: Beyond central coherence? *Journal of Child Psychology and Psychiatry*, 41(8), 1057–1065.

- Perner, J. (1991). *Understanding the representational mind*. Cambridge, MA: MIT.
- Piaget, J. (1969). *Judgment and reasoning in the child*. New York, NY: Humanities.
- Roth, F., & Spekman, N. (1986). Narrative discourse: Spontaneously generated stories of learning disabled and normally achieving students. *Journal of Speech and Hearing Disorders*, 7(1), 21–30.
- Sah, W. H. (2007). A longitudinal investigation of Mandarin-speaking preschoolers' relation of events in narratives: From unrelated to related events. *Taiwan Journal of Linguistics*, 5(1), 77–96.
- Sah, W. H. (2011). Emotion expressions and knowledge of story structure: A study of Mandarin-speaking children's narrative development. *Taiwan Journal of Linguistics*, 9(2), 61–100.
- Schank, R., & Abelson, R. (1977). *Scripts, plans, goals, and understanding*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Scholnick, E., & Friedman, S. (1987). The planning construct in the psychological literature. In S. Friedman, E. Scholnick, & R. Cocking (Eds.), *Blueprints for thinking* (pp. 3–38). New York, NY: Cambridge University Press.
- Schneider, P., Hayward, D., & Dubé, R. V. (2006). Storytelling from pictures using the Edmonton Narrative Norms Instrument. *Journal of Speech Pathology and Audiology*, 30(4), 224–238.
- Shen, Y. (1990). Centrality and causal relations in narrative texts. *Journal of Literary Semantics*, 19, 1–29.
- Snow, C. (1991). The theoretical basis for relationship between language and literacy in development. *Journal of Research in Childhood Education*, 6(1), 5–10.
- Stein, N., & Glenn, C. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *Advances in discourse processes: New directions in discourse processing* (pp. 53–120). Norwood, NJ: Ablex.
- Stein, N., & Policastro, M. (1984). The concept of a story: A comparison between children's and teachers' perspectives. In H. Mandl, N. L. Stein, & T. Trabasso (Eds.), *Learning and comprehension of text* (pp. 113–158). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Tager-Flusberg, H., & Sullivan, K. (1995). Attributing mental states to story characters: A comparison of narratives produced by autistic and mentally retarded individuals. *Applied Psycholinguistics*, 16, 241–256.
- Trabasso, T., & Nickles, M. (1992). The development of goal plans of action in the narration of a picture story. *Discourse Processes*, 15, 249–275.
- Trabasso, T., & Rodkin, P. (1994). Knowledge of goal/plans: A conceptual basis for narrating *Frog, where are you?*. In R. Berman & D. Slobin (Eds.), *Relating events in narrative: A crosslinguistic developmental study* (pp. 85–106). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Trabasso, T., & Sperry, L. (1985). Causal relatedness and importance of story events. *Journal of Memory and Language*, 24, 595–611.
- Trabasso, T., Stein, N., Rodkin, P., Munger, M., & Baughn, C. (1992). Knowledge of goals and plans in the on-line narration of events. *Cognitive Development*, 7, 133–170.
- Tsai, C. C. (2011). *si dao liushui ertong xushi nengli zhi fazhan yanjiu* [Narrative skills of four-to six-year-old children]. Unpublished master's thesis. National Taipei University of Nursing and Health Sciences, Taipei.
- Tsou, C. Z., & Cheung, H. (2007). Narrative story-telling of high-functioning children with autism spectrum disorders. *Bulletin of Special Education*, 32(3), 87–109.
- Wang, X. P. (1998). *A developmental study of acquisition of narrative skills by children in Taiwan*. Unpublished master's thesis. Fu Jen Catholic University, Taipei.

Socioeconomic differences in Taiwanese children's personal narratives

Conjunctions, internal state terms, and narrative structures

Wen-Feng Lai

This chapter investigated how five-year-old Taiwanese children of three socioeconomic statuses performed personal narratives. The participants comprised 60 children, 40 were from working-class families: half of the children's mothers were foreign brides from Southeast Asia countries (cross-border marriage group) and half were local Taiwanese (typical working-class group). An additional 20 children were recruited from middle-class local families. Children's vocabulary was assessed and they were individually interviewed regarding three past experiences. Data were transcribed verbatim and analyzed at the clause level according to the rules of the Child Language Data Exchange System. Primary findings include, first, middle-class children outperformed children from the two working-class groups in vocabulary ability. Second, there were no significant between-group differences in narrative length or the use of internal state terms. Third, middle-class children used significantly more temporal conjunctions than children of cross-border marriages. Fourth, middle-class children outperformed typical working-class Taiwanese children who, in turn, outperformed children of cross-border marriages in narrative structure.

Keywords: narrative, Chinese, socioeconomic difference, foreign brides, southeast Asia

Introduction

Narrating personal experience is an integral part of daily activities for most young children, regardless of their cultural and socioeconomic backgrounds. In social interactions, children as young as seventeen to twenty-one months of age are able to recount past experience (Miller & Sperry, 1988; Sachs, 1982). As Bruner (1986) has stressed, sharing one's experience is an essential way for young children to

understand their world. Moreover, studies have found that narrative skills were significantly related to literacy development (Chang, 2006; Griffin, Hemphill, Camp, & Wolf, 2004; Peterson, Jesso, & McCabe, 1999; Reese, 1995). Snow et al. (Snow, Porche, Tabors, & Harris, 2007) found that children's narrative performance at five years of age can predict their reading comprehension ability at 4th, 7th, and 10th grades. In other words, children's narrative ability can provide them with tools to make sense of the world and help their literacy development.

The number of "foreign brides" from Southeast Asia has been increasing over the past two decades in Taiwan. There are currently approximately 130,000 immigrant women in Taiwan from Southeast Asian countries (National Immigration Agency, 2012). These women migrated to Taiwan through their marriage to Taiwanese men, mostly with the hope of seeking a better life and helping to improve the standard of living of their families back in their original countries. Most of these women are from economically underdeveloped areas and are poorly educated or even illiterate. They came to Taiwan with little or no ability to communicate in Mandarin Chinese or any other Taiwanese languages. Moreover, most Taiwanese men who marry foreign brides are members of a relatively low socio-economic status (SES) (Yen, 2002).

This phenomenon of cross-border marriages has resulted in an urgent need for knowledge in the field of children's language development in Taiwan. Many studies have revealed discrepancies with regard to the language ability of children of cross-border marriages. Some have suggested that these children perform at a significantly lower level than Taiwanese children with similar family socioeconomic statuses (Chung, Wang, & Chen, 2006; Lin, 2006), while others indicate that they are not actually "at risk" because of their mothers' immigrant status (Chen, 2009; Lu & Lai, 2010). Due to the limitations in the designs of these studies, it remains unclear whether the mothers' immigrant status or the family's SES has the greater impact on the children's language development. Given the already stigmatized public images of these immigrant women (Hsia, 2008) and the complexity of how family SES can affect child language development (Hart & Risley, 1995), it is important to be able to differentiate the influence of these two factors. Immigrant mothers may lack fluency in speaking Mandarin Chinese or other Taiwanese languages, but they did talk to their children in their native languages when situations were appropriate (Fung & Liang, 2008). These children perhaps are not "at risk" in their language ability. It is very likely that they were exposed to multiple language inputs. The design of this study, thus, was to determine the sources of differential language development among children from three socioeconomic groups: middle-class, typical working-class in which the mothers were native Taiwanese, and working-class of cross-border marriages in which the mothers were immigrants from Southeast Asian countries.

The narration of past experience is an almost universal activity in the home for both adults and children of any cultural, linguistic, and socioeconomic background (Bruner, 1986; Heath, 1983). Thus, children's personal narratives can provide researchers with an appropriate tool with which to study language development. As early as two years of age, children begin to co-narrate their experiences in conversations with caregivers (Eisenberg, 1985; Fivush, Gray, & Fromhoff, 1987; Sachs, 1982). In the conversations, caregivers guide young children to reconstruct past experiences by means of various kinds of verbal exchanges such as asking questions, providing statements, and repeating children's utterances. With this early experience of conversational exchanges, young children learn ways of telling culturally understandable and appropriate personal stories. However, caregivers from different cultural backgrounds talk to young children very differently because of differing goals and values associated with language socialization (Heath, 1982; Ochs & Schieffelin, 1984). Previous studies have also suggested that parents of different socioeconomic backgrounds talk to their children in distinctly different ways (Burger & Miller, 1999; Hoff, 2003). Furthermore, longitudinal studies conducted on middle-class mother-child conversations revealed a link between maternal elicitation styles and children's narrative development (Fivush, Haden, & Adam, 1995; McCabe & Peterson, 1991). From the results of these studies it can be hypothesized that children growing up in families of different socioeconomic backgrounds will develop distinctive narrative abilities.

Different narrative theorists have proposed different definitions of narratives. It is commonly accepted that a minimal requirement of a narrative is a chronological recapitulation of two clauses. Moreover, the narration of a comprehensible narrative involves both the appropriate linkage of events and the provision of personal interpretations of the experience (Labov, 1972). One of the ways to provide personal interpretation is through using internal state language. Thus, a personal narrative is a kind of oral representation of one's past experience, and such a representation needs to be organized into a coherent whole for listeners to understand (McCabe, 1991). A narrative must be structured in a way that allows listeners to make sense of it. In order to understand the narrative development of children, it is thus imperative to study their use of conjunctions, internal state language, and narrative structure.

A narrative should comprise at least two clauses. One way in which young children learn to share personal experiences is to link individual events to a coherent whole, which can be achieved by using various cohesive devices. Halliday and Hasan (1976) extensively studied various cohesive devices, including pronouns, the use of ellipsis, lexical terms, reference, substitution, and conjunctions. The use of conjunctions in studying children's narrative development has been of

particular interest to many researchers (Fivush et al., 1995; Lai, Lee, & Lee, 2010; Peterson & McCabe, 1991). Although it has been argued that conjunctions in narratives are not obligatory for listener understanding, they do provide clues for listeners about how to follow the narrative (Peterson & McCabe, 1991). In other words, conjunctions can improve the accessibility of the narrative to the listener.

Conjunctions are a type of cohesive device that expresses additive, temporal, causal, adversative, and continuative relationships of clauses (Halliday & Hasan, 1976). The use of conjunctions by children in narratives increases with age (Curenton & Justice, 2004; Hudson & Shapiro, 1991; Peterson & Dodsworth, 1991). For instance, Curenton and Justice (2004) compared the production of literate language by African and Caucasian children from a low socioeconomic background, including the use of conjunctions. They found that while race had no effect on the use of conjunctions by children in fiction narratives, older age was associated with the use of a greater number of conjunctions in these narratives. A study comparing the narrative development of Korean and Taiwanese children also found that Asian children use significantly more conjunctions in their personal narratives as they grow older (Lai et al., 2010).

Research conducted with English-speaking children suggested that young children would use the same conjunction words for different semantic functions (Peterson & McCabe, 1991). A similar developmental pattern was also found in Chinese-speaking young children (Chen, 2006). Peterson & McCabe found that the most-common conjunction word used by young English-speaking children is *and*, but it can have various semantic functions, such as additive, temporal, or causal functions. In comparison, Chen suggested that the most commonly used conjunction word in narratives by Chinese-speaking preschool children in Taiwan is a temporal conjunction *ran2hou4*, which in English approximates to 'and then'. Similar to young English-speaking children's ubiquitous use of *and*, Chinese-speaking children use *ran2hou4* to substitute for other kinds of conjunctions, unless the two clauses are specifically linked with a causal or adversative relationship.

In recounting personal experiences, children not only relate events and describe background settings, but also convey subjective interpretations of the events (Peterson & McCabe, 1983). Lack of personal significance in a narrative renders it difficult for the listener to understand why that particular experience was worth sharing. Specifically, narrative evaluation in the form of explicit information about thoughts, affections, intentions, desires, and emotions is defined as internal state language and can demonstrate the narrator's particular perspective.

Language socialization influences the ways in which children incorporate internal state language into their narratives. Lai & Chen (2012) found that, when co-constructing personal narrative with their young children, middle-class

Taiwanese mothers used significantly more internal state language than working-class counterparts. Such socioeconomic differences are perhaps a source of the differential development regarding the use of internal state language among children. Adams, Kuebli, Boyle, and Fivush (1995) suggested that children of parents who use more emotional language while talking to them produce significantly more emotional language in their own personal narratives. Burger and Miller (1999) found that while conversations with negative emotions were more prevalent in American working-class families, conversations in American middle-class families were more balanced with both negative and positive emotions. However, it was interesting that the conversations of children of both SESs and of working-class adults included more negative emotions. Conversely, the conversations of middle-class adults included more positive emotions. These findings suggest that children of middle-class families are socialized to share more positive emotions while growing up. Unfortunately, most of the research on the use of internal state language among children has focused on the context of parent-child conversations about the past (Fernandez & Melzi, 2008), and in most of those studies the participants were middle-class parent-child dyads.

As Fivush and Baker-Ward (2005) noted, very few studies have investigated the internal state language produced in personal narratives, and even fewer studies have compared the effect of socioeconomic background on the use of internal state language among children. Talking about internal states of self appears early in language development. Veneziano (2009) found that children begin to use internal state words during spontaneous talks with adults in the first half of their second year of life, and that this continued to slowly increase thereafter. Most of the internal state words produced during this period refer to physical states; the second most frequently mentioned internal state words were about emotion and intention. It should be noted that cognitive words regarding beliefs and knowledge were not observed during this period. With regard to the development of mental state language among young Mandarin-speaking children, Tardif and Wellman (2000) found that Chinese toddlers aged twenty-one to twenty-seven months most frequently produced the "desire" word *yao4* 'want', compared with other mental state words such as *xiang3* 'think', *hui4* 'know how', *neng2* 'can', and *zhi1dao4* 'know that'. The tendency to use desire words earlier than cognitive words was demonstrated in their study of both Mandarin-speaking and Cantonese-speaking toddlers.

While the use of internal state language develops early in children and increases with age, its occurrence is still rare during the preschool years. Both Bokus (2004) and Richner and Nicolopoulou (2001) suggested that it was not until the age of four to five years that children begin to attribute a mental state to the characters of fictional narratives. Ukrainetz et al. (2005) found that five- and

six-year-old children never provided more than two internal state words in fictional narratives. It remains to be established how older preschoolers perform regarding their use of internal state language in personal narratives.

Shiro (2003) is one of the few authors to have compared socioeconomic differences in the personal and fictional narratives produced by (Venezuelan) school-aged children. The evaluative codes analyzed in that study included emotion, cognition, perception, physical state, intention, relation, and reported speech. The results indicated that perception was the most frequent evaluative device used in both personal and fictional narratives. The codes of intention, relation, and emotion occurred at similar frequencies in personal narratives. The other finding relevant to the present study was that low-SES children produced more evaluative terms than high-SES children at a young age. However, while the use of evaluative terms gradually increased with age among high-SES children, this trend was not observed among low-SES children. More importantly, the author is not aware of any studies concerning socioeconomic differences in the use of internal state language in personal narratives among Mandarin-speaking children (but see Chang & McCabe, this volume).

The overall organization of children's narratives gradually advances as they develop and begin to link events and provide subjective interpretations of past experiences. Narrative structure is defined as how children provide information in an orderly way that enables listeners to make sense of their experience. There are several ways to study children's narrative structure (Peterson & McCabe, 1983). Labov's (1972) structural analysis, also called high-point analysis, has been widely used to evaluate the coherence of children's narrative development. It has also been demonstrated that high-point analysis is suitable for analyzing personal narratives from various cultures (Chang, 2004; Minami, 2002) and socioeconomic backgrounds (Lai, 2010; Peterson & McCabe, 1983).

In high-point analysis, a classic narrative structure includes six elements: abstract, orientation, complicating actions, evaluation, resolution, and coda. It is rare for children under the age of six years to include all six narrative elements (Peterson & McCabe, 1983). Based on Labov's (1972) theory, Peterson and McCabe (see McCabe and Rollins, 1994) developed a coding system to capture the developing narrative structure of young children. Various studies have found that this analytical framework is appropriate for assessing the development of narrative structure (Justice et al., 2006; Uccelli, 2008; Wellman et al., 2011). The most-frequent structure for three-year-old English-speaking children was found to be relating two events, while that for four-year-old English-speaking children was a leapfrogging structure in which children did not organize their experience in a logical or chronological order, and often omitted important information. At the age of five years, the most frequently occurring narrative structure was found

to be the end-at-high-point narrative. This type of narrative provides essential information such as orientation and a chronological series of actions, yet it lacks resolution and, as a result, the telling stops suddenly at the climax (McCabe, 1997).

Few published studies have investigated the development of narrative structure among Chinese-speaking children. The longitudinal study of Chang (2004) found that Mandarin-speaking children aged forty-two to fifty-one months used event talk most frequently, followed by evaluation talk. The least frequently occurring structural aspect was durative/descriptive talk. Such young children may find it more difficult to share background information, while they may find it easier to provide information about actions and personal feelings. Based on the coding scheme of McCabe (1997), Lai et al. (2010) suggested that the narrative structure of Taiwanese middle-class children developed with age. The most-frequent structures were found to be two-event narratives at three years of age and the leapfrogging structure in four-year-old children, as was the case with English-speaking children. However, the most frequently occurring structure among Taiwanese middle-class five-year-old children was also leapfrogging, while for American five-year-old children it was the end-at-high-point narrative (Peterson & McCabe, 1983). One possible explanation for this difference lies in the prompts used. In the study of Lai et al. (2010), data in response to one specific prompt (visiting doctors' offices) were used for analyses. Examining just one narrative might not accurately reflect the children's performance. In fact, the longest narrative can often be the best performance (Peterson & McCabe, 1983). In response to that methodological limitation, the longest narratives out of three personal narratives were used for analyses in the present study.

Children's early narrative ability is important for their later literacy development (Chang, 2006; Griffin et al., & Wolf, 2004; Peterson et al., 1999; Reese, 1995; Snow et al., 2007). By studying three aspects (conjunctions, internal state terms, and narrative structures) of personal narratives that were produced by Mandarin-speaking children in Taiwan, this chapter seeks to shed some light on how SES may influence children's narrative development. Despite the growing concerns about education and development of children born in families of cross-border marriages, there exists little knowledge about how these children share their personal experiences. This chapter can enhance our understanding of SES's effects on narrative development in general and the narrative performance of children born to cross-border marriages in particular. The specific research question of this chapter was what are the differences and similarities in the use of conjunctions, internal state terms, and overall narrative structures in the personal narratives of these children?

Method

Participants

60 five-year-old Taiwanese children participated in the study (Mean age = 63.41 months, SD = 5.06 months). The children were recruited from the following three socioeconomic groups ($n = 20$ per group), as determined based on the family's disposable income: (1) children from middle-class families whose income was within the 60th percentile of incomes in Taiwan, (2) children from typical working-class families whose income was within the 20th percentile, and (3) children of "foreign brides" (i.e., cross-border marriages) from working-class families whose income was within the 20th percentile (Directorate-General of Budget, Accounting & Statistics, Executive Yuan, 2006). The numbers of boys and girls were almost equally distributed among the groups (middle-class children: 11 boys and 9 girls; typical working-class children: 11 boys, 9 girls; and children of cross-border marriage: 10 boys, 10 girls). All parents of participant children signed informed consent forms which were sent home with the help of children's teachers.

Procedure

Using the interview techniques designed by Peterson and McCabe (1983), individual children were asked to share their past experiences with a researcher in a quiet room in their school separate from their classroom. Prior to the formal interviews, researchers spent several days in the children's schools so that the children became familiar with them to reduce their anxiety level when they were interviewed. All of the interviews followed a protocol in which all children received similar prompts and responses. Three types of personal experiences were queried: visiting a doctor's office, family outings, and being scolded. These topics were selected because these are common experiences for most Taiwanese children regardless of their SES. The longest narrative produced by each individual child was selected for analysis, where the length of a narrative was determined by the total number of clauses. The definition of a clause was taken as "any unit that contains a unified predicate that expresses a single situation (activity, event, or state)" (Berman & Slobin, 1994, p. 657). This definition was chosen because it has been used widely in various languages, and was found to be suitable for analyzing narratives in Mandarin Chinese (Chang, 2004).

When a child began to narrate, the researcher gave nonspecific social responses to the child such as "Uh huh," "then what happened?," "tell me more", or repeated verbatim a portion of the child's utterance. These interview strategies proved to be useful to encourage the children's production of personal narratives

without interfering with or scaffolding their narrating (Lai et al., 2010; McCabe, 1997). Interviews were ended by children's saying "that's it!" or "I have no more to say."

All audiotapes of interview sessions were transcribed verbatim in Mandarin Chinese language. Codes for Human Analysis of Transcripts (CHAT) rules of the Child Language Data Exchange System (CHILDES) were used to transcribe all of the audiotapes into Chinese characters. The transcripts were coded in Chinese and analyzed using the Child Language Analysis (CLAN) software programs (MacWhinney, 2000). The children's narratives were coded at the clause level.

Coding scheme

The narrative coherence, subjective interpretation of experience, and development of macrostructure were investigated by analyzing the following three variables to measure children's narrative development: the total number of conjunctions, the total number of internal state terms, and the developmental level of the narrative structures. The definitions of conjunctions reported by Halliday and Hasan (1976) were applied in the present study since they have already been shown to be appropriate for evaluating the use of cohesive devices by children in narratives (Peterson & Dodsworth, 1991; Shapiro & Hudson, 1991). Halliday and Hasan used five types of conjunction in their study; however, the actual data revealed that Taiwanese five-year-old children did not use the continuative conjunctions studied by Halliday and Hasan (e.g., *anyway*, *surely*, *after all*, *now*, *of course*, and *well*). This type of conjunction was therefore omitted from the analysis. The four types of conjunction used for the present study were temporal (e.g., *ran2hou4* 'and then'), adversative (e.g., *dan4shi4* 'but'), causal (e.g., *yin1wei4* 'because'; *suo3yi3* 'so'), and additive (e.g., *han4*, *gen1* 'and').

The total number of internal state terms was calculated to measure the use of evaluation by the participants. Six types of internal state terms were defined as words representing one's affective states (e.g., *xi3huan1* 'like'), intention (e.g., *yao4* 'want'), cognition (e.g., *xiang3* 'think'), obligation (e.g., *bi4xu1* 'have to'), sensory perceptions (e.g., *kan4dao4* 'look at'), and physiological states (e.g., *xiang3shui-4jiao4* 'sleepy') (Fernandez & Melzi, 2008).

Based on Labov's theory of narrative structures (Labov, 1972), Peterson and McCabe (1983) developed the method of high-point analysis, which was used in the present study to analyze the developmental level of narrative structures. The relatively fine-grained analysis of narrative structures was relevant to children's current knowledge of how to organize personal experiences. The following definitions were adapted from the study by McCabe and Rollins (1994) of children's narrative structures and examples of each structure level are listed in the Appendix.

Level 1 One-event narrative.

Narratives involving a single event.

Level 2 Two-event narrative.

Narratives involving two propositions about an event or the recounting of two events.

Level 3 Miscellaneous narrative.

Narratives containing more than two or three events that are linked in a jumbled order without a clear sequence.

Level 4 Leapfrog narrative.

Events are sequenced without chronological order.

Level 5 Chronological narrative.

Events are linked in a chronological fashion, but there is no high point.

Level 6 End-at-high-point narrative.

Narratives sequenced in a timely order and having a high point, but without providing any resolution.

Level 7 Classic narrative.

Narratives beginning with an abstract that is a succinct statement of what the narrative is about. The series of events are related, culminating in a high point of some type. A resolution, evaluation, and coda are also included in these narratives.

Data analysis

To test the effect of SES, multivariate analyses of variance (MANOVA) were conducted for vocabulary development measured by total number of words (token), total number of different words (type), and corrected type/token ratio (corrected TTR). MANOVAs were then carried out for three coding categories of narrative development: total number of conjunctions, total number of internal state terms, and the developmental level of narrative structures. Univariate analyses of variance (ANOVA) were subsequently conducted to determine which variables were significantly related to socioeconomic status.

Reliability of coding

In each group, 20% randomly selected narratives ($n = 12$) were independently coded by a second coder. The coder was thoroughly informed about the coding scheme and was blind as to both the goals of the study and the background of the children. Cohen kappa statistics were calculated to estimate interrater reliability;

corrected for chance agreement the values were $k = .89$ for conjunction coding, $k = .96$ for coding of internal state terms, and $k = .88$ for coding of narrative structure level.

Results

Correlations among variables

An analysis of pairwise correlations was conducted to provide an overview of the relationship among variables. In addition to parental education levels and variables measuring narrative development, variables measuring vocabulary development (i.e., types, tokens and the corrected TTR) were added to the correlation analysis. This analysis was to understand whether children of different socioeconomic status have different sizes of vocabulary at their disposal when narrating personal experience. Additionally, it was to determine how the children's vocabulary development was related to other variables.

The correlation analysis revealed three significant trends. First, both parental educational levels were significantly correlated with children's vocabulary levels and the length of the narratives, as measured by the total number of clauses. Second, both parents' educational levels were significantly correlated with the level of narrative structure, while only maternal educational level was positively correlated with the child's use of conjunctions and internal state terms. The number of years of education of the mother was positively correlated with the number of conjunctions and amount of internal state terms used by their children. Third, the length of the narratives in clauses was significantly correlated with the children's vocabulary and narrative performance. Children who narrated for longer demonstrated better basic language abilities and narrative performance. Table 1 provides detailed statistics of the correlation analysis.

Effects of SES

MANOVAs performed with the children's SES as an independent variable, three variables for measuring vocabulary development (i.e., tokens, types, and corrected TTR), and three variables of narrative aspects as dependent variables revealed a significant main effect (Wilks' $\Lambda = .12$, $F(1, 59) = 5.19$, $p < .001$). Subsequent univariate ANOVAs indicated that the family's SES affected all three variables of children's vocabulary development, use of conjunctions and narrative structure level, but did not have a significant effect on the total number of clauses and the use of internal state language. Table 2 summarizes the results from the MANOVAs.

Table 1. Correlations among Variables

Variables	1	2	3	4	5	6	7	8	9
1. Edu_F ^a	–								
2. Edu_M ^b	.82**	–							
3. Types	.35**	.40**	–						
4. Tokens	.28**	.27**	.95**	–					
5. Corr. TTR ^c	.37**	.49**	.73**	.55**	–				
6. Clause	.33*	.36**	.62**	.89**	.89**	–			
7. Conjunction	.20	.30*	.81**	.86**	.51**	.87**	–		
8. Internal State	.21	.27*	.61**	.64**	.45**	.40**	.60**	–	
9. Structure	.39**	.51**	.34**	.31**	.44**	.44**	.42**	.42**	–

*p < .05. **p < .01.

^a fathers' education level^b mothers' education level^c corrected type token ratio**Table 2.** Descriptive Statistics for Variables, MANOVA and Post-hoc Results

	Middle-class Group 1 n = 20 Mean (SD)	Working-class Typical Group 2 n = 20 Mean (SD)	Working-class Cross-border Group 3 n = 20 Mean (SD)	F (2, 58) Main Effect	Post-hoc
Edu_F ^a	16.30 (1.98)	10.60 (1.96)	10.20 (2.28)	53.91***	1 > 2, 1 > 3
Edu_M ^b	15.60 (1.05)	11.60 (1.47)	9.95 (2.33)	58.48***	1 > 2 > 3
Types	82.85 (29.45)	50.25 (29.41)	49.75 (30.40)	7.77**	1 > 2, 1 > 3
Tokens	215.80 (124.24)	125.40 (103.70)	123.90 (110.01)	4.14*	1 > 2, 1 > 3
Corr. TTR ^c	4.19 (.70)	3.24 (.63)	3.32 (.68)	13.31***	1 > 2, 1 > 3
Clause	26.39 (15.99)	21.42 (13.20)	21.74 (15.60)	.64	
Conj.	16.65 (11.14)	10.50 (10.86)	7.45 (6.06)	4.58*	1 > 3
Internal	2.45 (2.21)	2.05 (3.07)	1.20 (1.44)	1.45	
Structure	5.90 (.91)	5.10 (.85)	4.30 (.98)	15.26***	1 > 2 > 3

*p < .05. **p < .01.

^a fathers' education level.^b mothers' education level.^c corrected type token ratio.

It may be unsurprising that the SES had no significant effect on the use of internal state words by the children. Previous studies have shown that children at this age produce relatively few words with reference to, for example, their affection,

intention, and cognition (Lai et al., 2010; Ukrainetz et al., 2005). Even with such few occurrences of internal state words, it is worth mentioning that these Taiwanese five-year-old children used cognitive words most frequently, followed closely by obligatory words. This finding differs from Shiro's (2003) finding that Venezuelan school-aged children used words referring to perception most often in their narratives. Table 3 provides detailed descriptive statistics of the children's use of internal state terms.

After the main effects of SES were revealed, Bonferroni post-hoc tests were conducted to further explore the differences between groups, yielding three important findings. First, with vocabulary development, middle-class children outperformed both working-class groups, and there was no significant difference between children of typical working-class families and those of cross-border marriages. This finding is similar to those of other studies regarding the language development of children born to Southeast Asian mothers. When compared with children of the same SES, children of cross-border marriages performed similarly in their vocabulary development (Chen, 2009; Lu & Lai, 2010).

Second, analysis of participants' performance on different types of conjunctions indicated that the most frequently used conjunctions were temporal words, followed by additive words. In addition, middle-class children produced significantly more temporal conjunctions than children of cross-border marriages ($F(2, 58) = 3.97, p < .05$). Table 4 provides descriptive statistics and post-hoc analysis of regarding the children's use of different types of conjunctions.

The third important result of the post-hoc analysis was that middle-class children significantly outperformed typical working-class children in the performance of narrative structure, who in turn outperformed the children of cross-border marriages. Summaries of post-hoc analyses are included in Table 2.

Table 3. Descriptive statistics of Internal State Terms

	Middle-Class n = 20	Working-Class n = 20	Working-Class Cross-border n = 20	Total
Affection	.28 (.83)	.74 (1.88)	.74 (1.21)	.60 (1.37)
Intention	.72 (1.56)	.74 (1.52)	.52 (1.22)	.65 (1.38)
Cognition	2.78 (3.56)	1.37 (2.71)	1.74 (2.42)	1.93 (2.90)
Obligation	1.94 (3.10)	1.11 (1.70)	.49 (.85)	1.12 (2.07)
Perception	.44 (.78)	1.00 (1.25)	.83 (1.59)	.77 (1.28)
Physiology	.61 (.85)	.52 (.90)	.87 (1.82)	.68 (1.31)
Total	6.77 (8.64)	5.53 (6.11)	5.17 (5.54)	5.77 (6.70)

Table 4. Descriptive Statistics and Post-hoc Analysis of Different Types of Conjunctions

	Middle-Class	Working-Class	Working-Class	Total	F (2, 58)	Post-hoc
	Group 1	Group 2	Group 3			
	n = 20	n = 20	n = 20			
	Mean (SD)	Mean (SD)	Mean (SD)			
Additive	1.83 (1.89)	2.63 (2.11)	2.83 (2.56)	2.47 (2.24)	1.07	
Causal	1.44 (2.12)	.47 (1.02)	1.34 (1.87)	1.10 (1.76)	1.82	
Temporal	8.22 (8.53)	7.16 (7.33)	2.87 (3.18)	5.83 (6.84)	3.97*	1 > 3
Adversative	.56 (.86)	.37 (1.16)	.65 (1.03)	.53 (1.02)	.40	
Total	12.06 (10.73)	10.58 (8.91)	7.65 (5.73)	9.90 (8.55)		

* $p < .05$.

To further understand how children of different SESs performed at different levels of narrative structure, the absolute and relative frequencies of each structure level were calculated for individual socioeconomic groups. Overall, no child in the study performed at level 1 or 2. Most of the participants produced chronological narratives (47%), with the second-largest proportion producing end-at-high-point narratives (17%), as is shown in Table 5. This result differs from that of Peterson and McCabe (1983), who found that the most-frequent structure level for American five-year-old children was the end-at-high-point level. The middle-class Taiwanese five-year-old children produced end-at-high-point narratives more frequently than the other two working-class groups; in other words, the structural development of middle-class Taiwanese children appears to be similar to that of similarly aged American children.

It should be noted that more than half of the 47% of chronological narratives were contributed by typical working-class children. 75% of children from typical working-class families performed at the chronological level. In comparison, in the middle-class group, the children's narrative structure levels were almost equally distributed among the three advanced levels: chronological, end-at-high-point, and classic narratives, with one exception that fell in the leapfrog level.

For the children of cross-border marriages, 55% of narratives fell in the less-developed levels: miscellaneous and leapfrog. In addition, no child in this group produced narratives of classic structure, whereas six children in the middle-class group and two children in the typical working-class group produced such narratives. Table 5 provides detailed information about the analyses.

Table 5. Narrative Structure Analyses

	Middle-Class	Working-Class Typical	Working-Class Cross-border	Total (Percentage)
1. One-event	0	0	0	0
2. Two-event	0	0	0	0
3. Miscellaneous	0	1 (5%)	5 (25%)	6 (10%)
4. Leap-frog	1 (5%)	1 (5%)	6 (30%)	8 (13%)
5. Chronological	6 (30%)	15 (75%)	7 (35%)	28 (47%)
6. End-at-high-point	7 (35%)	1 (5%)	2 (10%)	10 (17%)
7. Classic	6 (30%)	2 (10%)	0	8 (13%)
Total	20 (100%)	20 (100%)	20 (100%)	60 (100%)

Discussion

The primary goal of this study was to determine how family's SES affected Taiwanese children's production of personal narratives. As noted in other studies (e.g., Hart & Risley, 1995), the vocabulary development was more advanced for the middle-class children in the present study than for the working-class children. Middle-class children had a more diverse vocabulary at their disposal. For example, when they described dogs, instead of using the term "doggies," middle-class children would offer specific names, such as *chai2quan3* 'shiba,' *sheng4bo2na4* 'St. Bernard,' or *huang2jin1lie4quan3* 'golden retriever,' and whereas working-class children often called a pharmacist *a1yi2* 'aunt' or *shu2shu0* 'uncle,' middle-class children described them as a *yao4ji4shi1* 'pharmacist.'

Although their mothers were not native speakers of any Taiwanese language, Taiwanese children of cross-border marriages performed at a similar level to their working-class counterparts with respect to vocabulary development. One characteristic of their vocabulary development needs more attention: the vocabulary of the Taiwanese language (e.g., "Holo") was more frequently juxtaposed with that of Mandarin Chinese in their narrations. In comparison, children of other working-class families did not use Holo as often and this phenomenon was not observed in the personal narratives of the middle-class children included in the present study. For future studies of children of cross-border marriages, researchers should investigate how Taiwanese working-class preschool children use Taiwanese languages when sharing personal experiences. The fact that immigrant mothers strove to adapt themselves to their new life in Taiwan has manifested itself in their efforts to talk in local languages which are not official languages (e.g., Mandarin Chinese)

used in schools. In light of maternal influence on children's narrative development, the phenomenon that children of cross-border marriages used Holo more frequently deserves further investigation.

The finding of similar vocabulary development in the two working-class groups indicates that it is not the immigrant status of the mothers but rather their family's SES that is a major factor for their vocabulary development. This finding implies that the influence of immigrant mothers on children's language development is not as substantial as was previously hypothesized (Chung et al., 2006; Lin, 2006). Southeast Asian immigrant women came to Taiwan to seek a better life and sustain their families in their original countries. These immigrant women often are willing to or have to work full time (Yen, 2002). This means that they are not able to be home as full time mothers. Lu and Lai (2010) suggested that children of cross-border marriages received relatively more years of preschool education and attended significantly more after-school programs. Additionally, parents in cross-border marriages may understand that immigrant mothers cannot take full responsibility for teaching their young children because of their limited oral and literacy capacity in Chinese, and so preschool education has become of paramount importance to their children's learning and development.

It is interesting that the most-frequent types of internal state words for Taiwanese five-year-old children appear to be cognitive and obligatory words. This finding differs from Shiro's (2003) finding that the most-frequent type of internal state language used by Venezuelan school-aged children was perception in both personal and fictional narratives. In a study of socioeconomic differences in mother-child co-narrations, Lai (2004) found that when talking to their two- and three-year-old children, Taiwanese mothers with at least a college education used significantly more cognition words than those with only a high-school education or less. The same study found no significant socioeconomic difference in maternal use of obligatory words. For the Chinese-speaking population, longitudinal research is necessary to explore how maternal use of internal state words is linked to their children's later development in using these words. More cross-cultural studies are also necessary to determine the effect of culture on the way children apply subjective interpretations of their personal experience.

The significant differences between children with different SESs regarding the use of temporal conjunctions and narrative structures have shed some light on Taiwanese children's narrative development. As Chen (2006) indicated, Chinese-speaking children most frequently used *ran2hou4* 'and then' for temporal links. This was also found for middle-class and typical working-class children. Children of cross-border marriages did not use *ran2hou4* 'and then' as frequently as did their middle-class and typical working-class counterparts. These children often used conjunctions with other functions to replace temporal conjunctions; that is,

they often applied some conjunction with more specific function to mark temporal functions. For instance, some children would use *yin1wei4* 'because' and some used *zai4lai2* 'come again' to mark temporal functions. The following excerpt was adapted from a longer narrative about a girl's experience of being ill:

Excerpt 1: Child #46, age five years and seven months (working-class/cross-border group)

- 01 *yin1wei4 wo3 yao4 he1shui3.*
Because I wanted to have some water.
- 02 *yin1wei4 na4 ge0 a1yi2 shuo1 wo3 yao4 he1re4 re4 de0 shui3.*
Because that aunt said I have to have warm water.
- 03 *zuo2tian1 ba4ba0 you3 dai4 w3 qu4.*
Yesterday father brought me to (the hospital).
- 04 *ba4ba0 you3 dai4 wo3 qu4.*
Father brought me to (the hospital).
- 05 *yin1wei4 wo3 bu2 hui4 lai2 le0.*
Because I would not come (to school).
- 06 *yin1wei4 ba4ba0 zhi1dao4 wo3 zai4 na4 bian1.*
Because father knew I was there.
- 07 *wo3 jiu4 da4 jiao4 le0.*
I then screamed loudly.
- 08 *yin1wei4 wo3 bu2 hui4 lai2.*
Because I wouldn't come (to school).
- 09 *yin1wei4 wo3 de0 jiao3 hai2 bu2 dong4.*
Because my feet still couldn't move.
- 10 *yin1wei4 wo3 bu2 hui4 ku1.*
Because I wouldn't cry.
- 11 *bei4 cai3 jiao3 ke3shi4.*
(I) was stamped on but.
- 12 *wo3 xia4 ci4 bu2 hui4 lai2 le0.*
I will not come (to school) next time.
- 13 *yin1wei4 wo3 yao4 chuan1 wai4tao4.*
Because I needed to wear my coat.

This child had previously mentioned something about having a headache (not indicated in the excerpt), and then started to talk about drinking warm water, being brought to a hospital, not being able to go to school, and having her feet stamped

on. It was not easy to follow the narrative because the sequence of events was not clear. The child did not use conjunctions appropriately to link events, and so the listeners were left very confused as to what exactly happened, and when and how the experience happened. A temporal marker was used only once in 13 lines: *zuo2tian1* 'yesterday' was used in line 3. Instead of applying more temporal markers, she used the word *yin1wei4* 'because' eight times to link events. Some of the uses of *because* were appropriate and therefore understandable (e.g., lines 1, 2, and 9), but more were semantically incorrect (e.g., lines 5, 6, 8, 10, and 13). We did not know exactly when the aunt (perhaps she was the nurse) told her to drink warm water, when and why she screamed, why her feet could not move, and when and why her feet were stamped on.

The poor use of temporal conjunctions in the narratives produced by children of cross-border marriages seriously affected listeners' comprehension. The overall structures of narratives produced by this group of children were also the least developed. The narratives were disorganized since the structuring events did not have an orderly form. As McCabe (1991) suggested, a narrative structure helps listeners to make sense of the narrators' experience. Without an appropriate logical, causal, temporal order, a narrative becomes difficult to understand. For the children of cross-border marriages, 25% of narratives were miscellaneous and 30% were leapfrog in structure. In other words, more than half of their narratives did not follow a logical, causal, or temporal order. The excerpt cited above is a typical narrative produced by children of cross-border marriages. Referential and evaluative information was not linked appropriately, so the experience of the child being ill and not being able to go to school was not easily understood.

One explanation of the less developed narrative structures produced by children of cross-border marriages may lie in the possible multilingual environments in which they grew up. Fung and Liang (2008) suggested that Vietnamese immigrant mothers in Taiwan would use opportunities to teach their children the Vietnamese language and songs, although the Taiwanese family members did not necessarily encourage such teaching. In daily conversation routines, these children can easily hear and learn to talk in Taiwanese languages. In schools, Mandarin Chinese is the official language to communicate. That is, these five-year-old children of cross-border marriages may have three different languages at their disposal. The miscellaneous or disorganized narrative structures perhaps reflect their developing ability to use Mandarin Chinese coherently and understandably given all the other aspects of two other languages that they are also in the process of learning.

Most of the narratives of the typical working-class children (e.g., 75%) were in a chronological pattern. The chronological structure is one that fulfills a referential but not an evaluative function (Peterson & McCabe, 1983). The events of

chronological narratives do not center on a climax in which evaluative comments are provided. As Peterson and McCabe suggested, this kind of narrative seems to reflect children's "noninvolvement" with the narratives. In other words, when these children shared their experiences, it was as if they were reporting news in which most of the information was about what happened and less was about how they felt and thought. The following excerpt provides an example of a chronological narrative:

Excerpt 2: Child #23, age five years and seven months (typical working-class)

- 01 *wo3men2 gen1 bie2 ren2 qu4 hua1lian2 hai3sheng1guan3.*
We went to Hualian Ocean Park with others.
- 02 *er2qie3 zuo4 huo3che1 qu4.*
And (we) took train.
- 03 *zuo4 dao4 na4 li3 jiu4 wan3shang4 le0.*
(When) arriving there it was already night time.
- 04 *jie2guo3 wo3men2 hai2 qu4 na4 li3 mai3 dong1xi1.*
Consequently we still went there to buy things.
- 05 *ran2hou4 jiu4 zuo4 yi1 tai2 gong1che1 qu4 hua2lian2 hai3sheng1guan3 kan4 hai3tun2 biao3yan3.*
And then (we) took a bus to Hualian Ocean Park to see a dolphin show.
- 06 *Yi1 ge0 hai3tun2 biao3yan3 hou4lai2 wo3men2 kan4 wan2 le0.*
Then we finished watching that dolphin show.
- 07 *Jiu zuo4 mao1kong1lan3cheche1 qu4 chi1 dong1xi1.*
Then we took Maokung Gondola to eat something.
- 08 *Ran2hou4 jiu4 hui2 dao4 jia1 li3.*
And then (we) went home.
- 09 *hou4lai2 mei2 le0.*
Later that was it.

In this narrative, the boy almost did not offer any explicit evaluation about the experience; he simply shared with the experimenter event after event sequentially. There were no descriptions about the tiring train journey or possible excitement about watching a dolphin show. It is difficult to infer how the boy felt about this experience and why he chose this particular experience to share. This narrative does not include a climax in which evaluative comments would be offered.

Similar results of "noninvolvement" are also found for topics of past experience different from travels. It seems that types of experiences do not have an important effect on their narrative structure. The following narrative was shared by another typical working-class boy, recounting his experience of visiting a doctor.

Excerpt 3: Child #15, age five years and five months (typical working-class)

- 01 *wo3 you3 chi1 yao4*
I had medicine.
- 02 *ma1 ma0 ye3 chi1*
My mom too.
- 03 *you3 kan4 dian4 shi4*
And watching TV.
- 04 *hai2 wan2*
And playing.
- 05 *you3 tang2 guo3*
Having candies.
- 06 *you3 tie1 zhi3*
Having stickers.
- 07 *kan4 ka3 tong1*
Watching cartoon.
- 08 *hai2 kan4 dao4 hua1*
And seeing flower.
- 09 *you3 chang2 jing3 lu4 shi1 zi3 lao3 hu3*
And (seeing) giraffes, lions, tigers.
- 10 *ran2 hou4 zuo4 zhe0 deng3*
And then sitting and waiting.
- 11 *deng3 yi1 sheng1*
Waiting for the doctor.
- 12 *kan4 bing4*
Checking on me.
- 13 *hai2 na2 yao4*
And brought medicine.
- 14 *mei2 you3 le0*
That is it.

The boy shared what he saw in the waiting room and briefly mentioned that the doctor had checked on him. This narrative was rich in providing with information about the setting, but lacked evaluative information as to how the narrator felt.

This study has contributed to our understanding of the effects of SES on children's narrative development, but it was subject to some limitations. The measurement of internal state terms may not be sufficient to clarify a child's subjective interpretation of past experiences. Children at this age often use body language

and gestures to encode the significance of their experience. In addition, they use other words such as adverbs or specific words to describe their thoughts and emotions. The fact that young children apply diverse means to express subjective meanings in personal narratives required Peterson and McCabe (1983) to use twenty-one codes to analyze all the evaluative devices children used. Further understanding of the use of evaluative language among children will require broadening of the definition of narrative evaluation.

The present study found that children of cross-border marriages used some unconventional combinations of words for connective functions that were not found in the other two groups of children. For example, many used *zai4lai2* 'come again' to indicate temporality. This kind of unconventional use of conjunctions is perhaps due to their mothers' influence, but this cannot be stated unequivocally since the study did not have a longitudinal design. An understanding of maternal speech is required to enhance our understanding of the language development of these children.

The finding that the structural development of working-class children was significantly less advanced than their middle-class counterparts raises an important issue regarding multicultural education in Taiwan. The knowledge of how events need to be organized is critical not only for communication in schools but also for later literacy development. The link between the narrative skills of children and their reading and writing development has been demonstrated both theoretically (Olson, 1977; Snow, 1983) and empirically (Curenton & Justice, 2004; Reese, 1995; Snow et al., 2007). The skills required to comprehend and write an academic text are similar to those required to narrate a coherent narrative. Both tasks require children to distance themselves from the here and now and to be able to link events logically and temporally. Taiwanese working-class children require more instruction as to how to organize their narratives. In daily conversations with children or at sharing time, preschool teachers can improve these children's narrative skills with more specific and explicit statements or questions related to narrative structure. In joint storybook readings, teachers can also point in particular to logical and temporal orders as events unfold.

Heath (1983) argued that there exist mismatches of oral traditions between some homes and schools. Teachers of children growing up in culturally and linguistically diverse homes need to both recognize their students' differences and design appropriate curricula and instructions to meet their developmental needs. The increasing diversity of Taiwan's population has presented preschool teachers with unprecedented challenges. Perhaps understanding oral narratives produced by children of diverse sociolinguistic and cultural backgrounds and helping them with their narrative skills could be a critical step to improve the quality of multicultural education in Taiwan.

Acknowledgements

This research was supported by grants from National Science Council of Taiwan to Wen-Feng Lai (NSC: 94-2413-H-003-060). I would like to thank all the children and their families who participated in the projects.

References

- Adams, S., Kuebli, J., Boyle, P., & Fivush, R. (1995). Gender differences in parent-child conversations about past emotions: A longitudinal investigation. *Sex Roles, 33*, 309–323.
- Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bokus, B. (2004). Inter-mind phenomena in child narrative discourse. *Pragmatics, 14*(4), 391–408.
- Bruner, J. S. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Burger, L. K., & Miller, P. J. (1999). Early talk about the past revisited: Affect in working-class and middle-class children's co-narrations. *Journal of Child Language, 26*(1), 133–162.
- Chang, C. (2004). Telling stories of experiences: Narrative development of young Chinese children. *Applied Psycholinguistics, 25*, 83–104.
- Chang, C. (2006). Linking early narrative skill to later language and reading ability in Mandarin-speaking children: A longitudinal study over eight years. *Narrative Inquiry, 16*(2), 275–293.
- Chen, C. W. (2006). *An empirical study of Chinese-speaking preschoolers' use of connective devices in their L1 narratives*. Unpublished master's thesis. National Taiwan Normal University, Taipei, Taiwan.
- Chen, Y. T. (2009). *A study of new Taiwanese children's and native children's language abilities and peer interaction*. Unpublished master's thesis. National Taiwan Normal University, Taipei, Taiwan.
- Chung, F. C., Wang, K. C., & Chen, Y. L. (2006). pingdong diqu waiji yu benguoji peiou zinu zai yuwen, xinzhi nengli fazhan yu xuexi xingwei zhi bijiao yanjiu – tanxi jiating beijing de yingxiang [A comparison study of language, mental abilities development, and learning behavior for children of foreign bride Families in Pingdong]. *Bulletin of Educational Psychology, 37*(4), 411–429.
- Curenton, S. M., & Justice, L. M. (2004). African American and Caucasian preschoolers' use of decontextualized language: Use of literature language features in oral narratives. *Language, Speech, and Hearing Services in Schools, 35*(3), 240–253.
- Directorate-General of Budget, Accounting, and Statistics, Executive Yuan. (2006). *Report on the survey of family income and expenditure*. Taiwan: Government Publishing.
- Eisenberg, A. R. (1985). Learning to describe past experiences in conversation. *Discourse Processes, 8*(2), 177–204.
- Fernandez, C., & Melzi, G. (2008). Evaluation in Spanish-speaking mother-child narratives: The social and sense-making function of internal-state references. In A. McCabe, A. Bailey, & G. Melzi (Eds.), *Spanish-language narration and literacy: Culture, cognition and emotion* (pp. 92–118). New York, NY: Cambridge University Press.

- Fivush, R., & Baker-Ward, L. (2005). The search for meaning: Developmental perspectives on internal state language in autobiographical memory. *Journal of Cognition and Development*, 6(4), 455–462. doi:10.1207/s15327647jcd0604_1
- Fivush, R., Gray, J. T., & Fromhoff, F. A. (1987). Two-year-olds talk about the past. *Cognitive Development*, 2, 393–410.
- Fivush, R., Haden, C., & Adam, S. (1995). Structure and coherence of preschoolers' personal narratives over time: Implications for childhood amnesia. *Journal of Experimental Child Psychology*, 60, 32–56.
- Fung, H., & Liang C. H. (2008). Yuenan mama taiwan yinzi: taiyue kuaguo hunying jiating youer shehuihua zhi chutan [Vietnamese mothers, Taiwanese children: Socializing practices with young children in Sino-Vietnamese cross-border marriage families in Taipei, Taiwan]. *Taiwan Journal of Anthropology*, 6 (2), 47–88.
- Griffin, T. M., Hemphill, L., Camp, L., & Wolf, P. D. (2004). Oral discourse in the preschool years and later literacy skills. *First Language*, 24(2), 123–147.
- Halliday, M. A., & Hasan, R. (1976). *Cohesion in English*. New York, NY: Longman.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Paul H. Brookes.
- Heath, S. B. (1982). What no bedtime story means: Narrative skills at home and school. *Language in Society*, 11(1), 49–76.
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. New York, NY: Cambridge University Press.
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368–1378.
- Hsia, H. C. (2008). "Beyond victimization: The empowerment of 'foreign brides' in resisting capitalist globalization." *China Journal of Social Work* 1(2), 130–148. doi:10.1080/17525090802098054
- Hudson, J. A., & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 89–136). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Justice, L. M., Bowles, R. P., Kaderavek, J. N., Ukrainetz, T. A., Eisenberg, S. L., & Gillam, R. B. (2006). The index of narrative macrostructure: A clinical tool for analyzing school-age children's narrative performances. *American Journal of Speech-Language Pathology*, 15(2), 177–191. doi:10.1044/1058-0360(2006/017)
- Labov, W. (1972). *Language in the inner city*. Philadelphia, PA: University of Pennsylvania Press.
- Lai, W. F. (2004). *Co-constructing narratives with young children: A study of the relationships between Taiwanese mothers' discourse styles and mothers' education, family income and children's age*. Unpublished Doctoral dissertation. Boston University, Boston, Massachusetts.
- Lai, W. F. (2010). "Talking like a book?" Socioeconomic differences of maternal conversational styles in co-constructing personal narratives with young Taiwanese children. *Early Child Development and Care*, 180(10), 1361–1377. doi:10.1080/03004430903083433
- Lai, W. F., Lee, Y. J., & Lee, J. (2010). Visiting doctors' offices: A comparison of Korean and Taiwanese children's narrative development. *Early Education and Development*, 21(3), 445–467. doi:10.1080/10409281003775154
- Lai, W. F. & Chen, Y. Y. (2012, July). *Taiwanese children's narrative evaluation on mother-child co-narrations: Differences on children's age and family SES*. Paper presented at the 13th

- Annual Conference of the Pacific Early Childhood Education Research Association (PECERA), Singapore.
- Lin, H. Y. (2006). *The study on the Mandarin knowledge of five-years-old new inhabitants' children, whose mothers from the Southeast Asia* (Unpublished master's thesis). National Taipei University of Education, Taipei, Taiwan.
- Lu, M. J., & Lai, W. F. (2010). xin yimin nüxing zīnū han yiban youer de jiating yuedu huanjing yu qi yuyan nengli zhi xiangguan xing yanjiu [A study of the relationship between family literacy environment and children's language ability: A comparison of newly immigrant women's children and ordinary children]. *Curriculum & Instruction Quarterly*, 13(4), 133–157.
- McCabe, A. (1991). Preface: Structure as a way of understanding. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. ix–xvii). Hillsdale, NJ: Lawrence Erlbaum Associates.
- McCabe, A. (1997). Developmental and cross-cultural aspects of children's narration. In M. Bamberg (Ed.), *Narrative development: Six approaches* (pp. 137–174). Hillsdale, NJ: Lawrence Erlbaum Associates.
- McCabe, A., & Peterson, C. (1991). Getting the story: A longitudinal study of parental styles in eliciting oral personal narratives and developing narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 271–353). Hillsdale, NJ: Lawrence Erlbaum Associates.
- McCabe, A., & Rollins, P. R. (1994). Assessment of preschool narrative skills. *American Journal of Speech-Language Pathology: A Journal of Clinical Practice*, 3, 45–56.
- MacWhinney, B. (2000). *The CHILDES project: Tools for analyzing talk* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Miller, P. J., & Sperry, L. L. (1988). Early talk about the past: The origins of conversational stories of personal experience. *Journal of Child Language*, 15(2), 293–315.
- Minami, M. (2002). *Culture-specific language styles: The development of oral narrative and literacy*. Clevedon, UK: Multilingual Matters.
- National Immigration Agency (2012). waiji peiou ren shu yu dalu (hangangao) peiou ren shu [Statistics on spouses of cross-border marriages and spouses from Mainland China (including Hong Kong and Macau)]. Retrieved from < <http://www.immigration.gov.tw/ct.asp?xItem=1114010&ctNode=29699&mp=1> >
- Ochs, E., & Schieffelin, B. B. (1984). Language acquisition and socialization: Three developmental stories and their implications. In R. A. Shweder & R. A. LeVine (Eds.), *Culture theory: Essays on mind, self, and emotion* (pp. 276–320). New York, NY: Cambridge University Press.
- Olson, D. R. (1977). From utterance to text: The bias of language in speech and writing. *Harvard Educational Review*, 47(3), 257–281.
- Peterson, C., & Dodsworth, P. (1991). A longitudinal analysis of young children's cohesion and noun specification in narratives. *Journal of Child Language*, 18, 397–415.
- Peterson, C., Jesso, B., & McCabe, A. (1999). Encouraging narratives in preschoolers: An intervention study. *Journal of Child Language*, 26(1), 49–67.
- Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative*. New York, NY: Plenum Press.
- Peterson, C., & McCabe, A. (1991). Linking children's connective use and narrative structure. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 29–54). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Reese, E. (1995). Predicting children's literacy from mother-child conversations. *Cognitive Development*, 10(3), 381–405.

- Richner, E. S., & Nicolopoulou, A. (2001). The narrative structure of differing conceptions of the person in the development of young children's social understanding. *Early Education and Development, 12*, 393–432.
- Sachs, J. (1982). Talking about the there and then: The emergence of displaced reference in parent-child discourse. In K. E. Nelson (Ed.), *Children's Language* (Vol. IV, pp. 1–28). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Shapiro, L. R., & Hudson, J. A. (1991). Tell me a make-believe story: Coherence and cohesion in young children's picture-elicited narratives. *Developmental Psychology, 27*(6), 960–974.
- Shiro, M. (2003). Genre and evaluation in narrative development. *Journal of Child Language, 30*, 165–195.
- Snow, C. E. (1983). Literacy and language: Relationships during the preschool years. *Harvard Educational Review, 53*(2), 165–189.
- Snow, C. E., Porche, M. V., Tabors, P. O., & Harris, S. R. (2007). *Is literacy enough? Pathways to academic success for adolescents*. Baltimore, MD: Paul H. Brookes.
- Tardif, T., & Wellman, H. M. (2000). Acquisition of mental state language in Mandarin-and Cantonese-speaking children. *Developmental Psychology, 36*(1), 25–43.
- Uccelli, P. (2008). Beyond chronicity: Evaluation and temporality in Spanish-speaking children's personal narratives. In A. McCabe, A. Bailey, & G. Melzi (Eds.), *Spanish-language narration and literacy: Culture, cognition and emotion* (pp. 175–212). New York, NY: Cambridge University Press.
- Ukrainetz, T. A., Justice, L. A., Kaderavek, J. N., Eisenberg, S. L., Gillam, R. B., & Harm, H. M. (2005). The development of expressive elaboration in fictional narratives. *Journal of Speech, Language, and Hearing Research, 48*(6), 1363–1377. doi:10.1044/1092-4388(2005/095)
- Veneziano, E. (2009). Language and internal states: A long developmental history at different levels of functioning. *Rivista Di Psicolinguistica, IX*(3), 15–34.
- Wellman, R. L., Lewis, B. A., Freebairn, L. A., Avrich, A. A., Hansen, A. J., & Stein, C. M. (2011). Narrative ability of children with speech sound disorders and the prediction of later literacy skills. *Language, Speech, and Hearing in Schools, 42*(4), 561–579. doi:10.1044/0161-1461(2011/10-0029)
- Yen, C. C. (2002). *A study on the process of adaptation among foreign brides from Southeast Asia: Interpreting the phenomenon of their lived experiences* (Unpublished master's thesis). National Chiayi University, Chiayi, Taiwan.

Appendix: Definitions and Examples of Narrative Structure Levels

Structure Level	Definition	Examples in Chinese Romanization	English Translation
1. One-event narrative	involves a single event	01 <i>wo3 qu4 you2yong3.</i>	01 I went swimming
2. Two-event narrative	involves two propositions about an event or the recounting of two events	01 <i>wo3 qu4 nai3nai0 jia1 ran2hou4 ta1 gei3 wo3 yi1 ke1 tang2 chi1.</i>	01 I went to my grandmother's home and she gave me a candy
3. Miscellaneous narrative	contains more than two or three events that are linked in a jumbled order without a clear sequence	01 <i>cai3 cao3mei2 a1.</i> 02 <i>hai2hou3 hui2 jia1.</i> 03 <i>hai2you3 kan4 dao4 xiang4ri4kui2.</i>	01 picking strawberries 02 and went home 03 and seeing sunflower
4. Leapfrog narrative	sequential event narratives without chronological order	01 <i>wo3 shang4ci4 die2dao3 le0.</i> 02 <i>ba4ba0 jiao4 wo3 zuo4 zhe0.</i> 03 <i>ma1ma1 jiu4 qu4 a1yi2 jia1.</i> 04 <i>ran2hou4 wo3 jiu4 hen3 kai1xin1.</i>	01 I fell down last time 02 my father asked me to sit 03 my mom left for my aunt's home 04 and I was happy
5. Chronological narrative	chronological event narratives without a high point	01 <i>hou4lai2 wo3 wan2 le0 hen3 duo1 liu1hua2ti1.</i> 02 <i>bu4 yi1 yang4 de0.</i> 03 <i>ran2hou4 ba4ba0 he1 lv4cha2 wo3 he1 hong2cha2.</i> 04 <i>ran2hou4 wo3 you3 chi1 bao4mi3hua1.</i> 05 <i>ran2hou4 wo3men2 jiu4 qu4 kan4 bie2ren2 xia4 xiang4qi2.</i> 06 <i>ran2hou4 wo3men2 jiu4 hui2 jia1 le0.</i>	01 and then I went sliding many times 02 a different one 03 and then my father had green tea and I had black tea 04 and then I had popcorns 05 and then we went to watch people play Chinese chess 06 and then we went home

Structure Level	Definition	Examples in Chinese Romanization	English Translation
6. End-at-high-point narrative	sequential event narratives in a timely order without any resolution but with a high point	01 <i>wō3 gēn1 bā4bā0 qu4 diao4 yu2.</i>	01 I went fishing with my father
		02 <i>hēn3 hāo3 wān2 ōu0.</i>	02 had a lot of fun
		03 <i>rān2hōu4 wō3mēn2 yōu3 chī1 fān4tuān2.</i>	03 and then we had rice balls
		04 <i>rān2hōu4 wō3 jiū4 diao4 dāo4 shuī3 lǐ3.</i>	04 and then I fell in the water
		05 <i>rān2hōu4 jiū4 měi2yōu3 le0.</i>	05 and then that was it
7. Classic narrative	beginning with an abstract, then the series of events are related, culminating in a high point of some type; a resolution, evaluation, and coda are also included in narratives	01 <i>yōu3shī2hōu4 wō3mēn qu4 ēr2tōng2le4yuan2.</i>	01 sometimes we went to an amusement park
		02 <i>wān2 mō2tiān1lun2.</i>	02 taking Ferries wheel
		03 <i>hēn3 hāo3 wān2 ōu0.</i>	03 it was very fun
		04 <i>yōu3shī2hōu jiē3jiē0 měi2 qu4.</i>	04 sometimes my sister didn't go
		05 <i>zāi4 gāo1 de0 dī4fāng1 tā1 dōu1yōu3 ju4gāo1zhēng4.</i>	05 when in high places, she had acrophobia
		06 <i>tā1 jiū4 zuō4 zhōng1jiān1.</i>	06 she'd sit in the middle
		07 <i>yōu3shī2hōu4 kān4 xiā4 miān4.</i>	07 sometimes when looking down
		08 <i>tā1 jiū4 zuō4 zhōng1jiān1.</i>	08 she'd sit in the middle
		09 <i>rān2hōu4 qu4 wān2 pēng4pēng4chē1.</i>	09 then we went to take bumper cars
		10 <i>jiē1xiā4lāi2 jiū4 tiān1 hē1 le0.</i>	10 and then it became dark
		11 <i>yīn1wēi4 tiān1 hē1 le0.</i>	11 because it became dark
		12 <i>wō3mēn2 jiū4 huī2 jiā1 le0.</i>	12 we went home
		13 <i>jiū4 zhē4 yāng4.</i>	13 that's it

Note. Adapted from McCabe and Rollins (1994) and examples are from actual data.

A study of narrative development of young Chinese children with specific language impairment aged four to six years

Fangfang Zhang

This study investigates the narrative development of Chinese Children with specific language impairment (SLI) aged from four to six in three dimensions – structure, evaluation and temporality. The data comprised personal narratives of a cross-sectional corpus with sixty children with typical development (TD) and a longitudinal corpus over twenty months with age-matched children with (n = 3) and without SLI (n = 3) starting at the age of four. The main findings were that the SLI group's narrative structure is lower than that of their peers with typical development in length, components, and appropriate use of codas, though they show a rapid growth in narrative structure from the age of four to six. Second, children with SLI produce significantly fewer evaluations than their peers with TD. With age, evaluation in children with SLI develops very slowly. Third, compared to the group with TD, children with SLI show less diversity of vocabulary and types of expressions of temporality. But their temporal ability grows rapidly with age. The lower narrative competence of children with SLI supports the cognitive processing deficit account of this population. Evaluation presents the primary area of difficulty for children with SLI. Future intervention should be focused in this direction.

Keywords: narrative, Chinese, specific language impairment, narrative structure, evaluation, temporality

Introduction

Specific Language Impairment (SLI) is a developmental language disorder that occurs in the absence of clear neurological, sensorimotor, cognitive or emotional deficits. Children with SLI are characterized by developmental delays in a number of different domains, including semantic, morphosyntactic, pragmatic and discourse skills in oral and/or written languages (Bishop, 1997; Leonard, 1998). Studies have suggested that the prevalence rate of SLI is quite high. Leonard (1998)

indicated that the prevalence of SLI among English-speaking children is about 7% and it is more likely to be seen in males than in females. In Taiwan, Hsu (2000) inferred from the data she collected that the prevalence of five-year-old children with SLI in Taipei was about 3.03%. The United Nations population projections for China once anticipated there would be 92.7 million children under the age of four in year 2010. An estimate of 4.5 percent of affected individuals (at the midpoint of the range identified by Leonard, 1998) would result in 4.17 million children with SLI (Fletcher, Stokes, & Wong, 2006). Previous studies on English-speaking children with SLI documented that this impairment can grow into adolescence and adulthood, which would adversely affect children's academic and social skills unless the children receive timely intervention in the preschool period (Griffin, Hemphill, Camp, & Wolf, 2004; Tabors, Snow, & Dickinson, 2001). Therefore, empirical research on preschool Chinese children with SLI is essential; this could have a great impact on the country's economy, educational investment and particularly on children themselves.

Earlier case studies have demonstrated that children with SLI appear to be late in acquiring their first words (Bender, 1940, as cited in Leonard, 1998, p. 43; Werner, 1945; Morley & Garside, 1955; Weeks, 1974). More recent work with large numbers of children by Trauner, Wulfeck, Tallal, and Hesselink (1995) confirms the findings of earlier case studies. Further studies demonstrated that verb usage (verb type frequency and variety of verbs) seems the main area of difficulty (Fletcher & Peters, 1984; Watkins, Rice, & Molz, 1993). Compared with lexical abilities, children with SLI have greater difficulty in syntax, mainly in the use of arguments and morphosyntax. Specifically, children with SLI were more likely to omit obligatory arguments, the main verb itself or adjuncts (information about time, location or manner of action) than age controls or younger children with typical development (Fletcher & Garman, 1988; Johnston & Kamhi, 1984; Roberts, Roscorla, & Borneman, 1994), which can explain the MLU differences between the two groups. Klee, Strokes, Wong, Fletcher, and Gavin (2004) conducted research on preschool Cantonese-speaking children with SLI and found the MLU and lexical diversity of children with SLI were significantly lower than those of children with typical development. Children with SLI are weaker relative to same-age peers in the area of morphosyntax through preschool years and usually beyond. For the pragmatic competence of this population, Leonard (1986) found children with SLI, when talking with adults, were not likely to initiate conversation and their responses were less coherent or relevant and sometimes even irrelevant or inappropriate compared with age controls. Miranda, McCabe, and Bliss (1998) indicated topic maintenance is the primary area of difficulty for children with SLI. They expanded their narratives by adding more nonthematic discourse compared to both age controls and younger children matched by language level. Yeh's (2004)

study showed preschool Mandarin-speaking children with SLI in Taiwan could not modify or adjust the content of the talk in mother-child dyads and were not able to supplement or clarify information when their mothers misunderstood them. In sum, past literature revealed that children with SLI were poorer than age controls in lexical, syntactic and pragmatic aspects.

In recent years, narrative analysis has become an important tool for assessing the language development of children with SLI. Narrative is oral discourse that recapitulates a series of real or imaginary events in temporal order, which is a de-contextualized language ability. The relationship between early narratives and later academic achievement is largely supported in the literature (Griffin et al., 2004; Snow, Porsche, Tabors, & Harris, 2007; Tabors et al., 2001). Studies on narrative language of children with SLI in European-American countries have a history of three decades. However, the results of such studies may not generalize to Chinese. Chinese is a language containing both sound and character systems, which is different from syllabic languages such as English not only in form but also in syntax. It has no strict morphological characteristics or morphological marker of tense or voice. In addition, Chinese children and European-American children are nurtured in different cultures. Therefore, the narrative development of children with SLI in Chinese language culture is likely to present a picture that differs from their English-speaking peers.

Labov (1972) defined a narrative as at least two sequential independent clauses describing a single past event. The ability to produce a narrative demonstrates a child's ability to sustain talk about the world beyond the here and now (Snow, Tabors, Nicholson, & Kurland, 1995). Narrative structure (Labov, 1972; Peterson & McCabe, 1983; Chang, 2004), evaluation (Labov, 1972; Peterson & McCabe, 1983; Chang, 2004) and temporality (Labov, 1972; Peterson & McCabe, 1983; Chang, 2004) are the key dimensions of narrative skill. Much of the past literature in this area has focused on the development of these dimensions in the narratives of English-speaking children.

Narrative structure abilities of children with SLI

High point analysis and story grammar are two main approaches past research has taken to the analysis of narrative structure. Labov (1972) proposed that narratives were constructed around "high points." Peterson and McCabe (1983) modified Labov's high-point analysis and later developed seven types of the overall structure of a narrative (the classic pattern, the ending-at-the-high-point pattern, the chronological pattern, the leap-frog pattern, the impoverished pattern, the disoriented pattern and the miscellaneous pattern) based on the personal stories of ninety-six children aged four to nine years old. Story grammar analysis developed by Stein

and Glen (1979) postulates that a story consists of the setting and the episodic structure. An episode includes seven elements: an initiating event, an internal response, a plan, an attempt, a consequence and a reaction. Although this approach was not used in the current study, a number of past researchers have used it.

For children with typical development, whether children in the U.S. or in other cultures (e.g., Japanese and Chinese), past research showed the components of their narrative structure were getting more and more complete and the narrative length was getting longer and longer as they grew older (Chang, 2004; Fivush, Haden, & Adam, 1995; Miller & Sperry, 1988; Minami, 1996; Peterson & McCabe, 1983).

For children with specific language impairment, results of previous studies are quite different. Some researchers found children with SLI produced less mature narrative structures than their age-matched controls. Specifically, they produced fewer essential plot components, reporting fewer events and less complete episodes. As such, the narrative length of children with SLI is comparatively shorter (Copmann & Griffith, 1994; Craig, 1991; Liles, 1985a, 1985b; Manhardt & Rescorla, 2002; Merritt & Liles, 1987; Roth & Spekman, 1986; Scott & Windsor, 2000; Sleight & Prinz, 1985). Miranda et al. (1998) indicated children with SLI produced more leap-frog narratives compared with children with typical development. Lee (2003) analyzed the narrative organization of Mandarin-speaking children with Language Learning Disability (LLD) in Taiwan. The results indicated that the children with LLD used fewer components of story grammar than children with typical language ability. However, Graybeal's (1981) study found children with typical development and children with language impairment exhibited very similar patterns in the narrative components of story grammars. Kaderavek and Sulzby's (2000) study showed that the narrative structure of children with and without language impairment was comparable in that both groups frequently marked middles and ends of stories in personal narratives. Due to contradictory results, more studies across different cultures and ethnic groups are needed in regard to the narrative structure competence of children with SLI.

Narrative evaluation abilities of children with SLI

As a primary means of cognition and communication, narrative represents not only an important communicative tool but also an essential mechanism for making sense of experiences and relationships, which carries the point of the story (Bamberg & Damrad-Frye, 1991; Chang, 2004; Labov, 1972; Peterson & McCabe, 1983). By examining the evaluative ability of children at older ages (preadolescents, adolescents and adults), Labov (1972) suggested a variety of evaluative devices available at phonological, lexical, syntactical, and discourse levels. Peterson and McCabe (1983) later developed a detailed classification of evaluation and they

were the first to examine evaluative devices used by younger children. They divided evaluation into twenty-one categories based on the narratives of American children aged four to nine years. Other research showed English-speaking children were able to use limited linguistic means to convey the significance of the reported event when they were two and half years old (Miller & Sperry, 1988). At forty months, children were able to tell relatively long personal narratives including both orientation and evaluation (Fivush et al., 1995). Chang (2004) found that Mandarin-speaking children in Taiwan included more vocabulary and evaluative devices expressing their attitude and the meaning of the narrated events with increasing age.

For the evaluative ability of children with language impairment, previous studies showed their narratives are absent of the protagonist's internal responses to events (Klecan-Aker & Kelty, 1990; Merritt & Liles, 1987), which is congruent with Lee's (2003) analyses of the Taiwanese Mandarin-speaking children's narrative. The children with LLD expressed fewer "internal responses" in their stories than the children with normal language ability. Tsai (2006) used the Narrative Assessment Profile (McCabe & Bliss, 2003) to assess the narrative ability of children in Taiwan and found that evaluation in the narratives of children with language impairment was just one half of the evaluation employed by children with normal language development.

Narrative temporality abilities of children with SLI

Temporality is another main element in the organization of a narrative. Cohesive devices are used to keep narratives coherent and follow a time line. Cohesive devices involve semantic as well as pragmatic devices that link utterances and events. The semantic devices that link utterances include coordination, temporal links, causality, enabling and disjuncture. Pragmatic functions of connectives are to denote the beginning or ending of a narrative, change of focus or chronology violations (McCabe & Bliss, 2003). This study only focuses on conjunctive cohesion at the semantic level.

Based on 1,100 personal narratives, Peterson and McCabe (1991) found that children as young as three and half years old used connectives such as *then*, *and*, *so*, *because* and *but* in their narratives. Causality appears in stories produced by children between ages five and seven (Owens, 1995). By age ten, children have mastered the ability to tell causally well-formed stories (Kemper, 1984). A longitudinal study of the narrative abilities of Mandarin-speaking children in Taiwan found the following words were used to express chronological order: *ran2hou4* 'then', *jie1xia4lai2* 'and then', *yi3jing1* 'already'. These connectives are found in the

narratives of preschool children and occurrence of these words increases between the ages of six to seven years (Chang, 1998, 2004).

For children with language impairment, Kaderavek and Sulzby (2000) found that preschool children with SLI used fewer connectives than age-matched children with typical development in both oral personal narratives and retellings of stories and demonstrated difficulties in cohesion in their narratives, which is in line with the findings of Paul and Smith (1993). Liles, Duffy, Merritt, and Purcell's (1995) factor analyses of school-age children with language impairment also showed that textual cohesion is one of three narrative microstructural variables (the other two are grammatical sentence structure and frequency and length of subordinate clauses), which can effectively distinguish children with language impairment from children without language impairment. Miranda et al.'s (1998) study showed children with SLI produced more connectives than the children matched for language age but fewer than the children matched for chronological age.

Lee (2003) found the frequency of accurate connectives of Mandarin-speaking children with LLD was significantly lower than children with normal language ability. Tsai's (2006) study indicated that the mean score of Taiwanese children with language impairment on conjunctive cohesion in their personal narratives was lower than that of children with normal language development.

In summary, most studies revealed children with typical development produce more elaborated, more evaluative and more coherent personal narratives while children with SLI have often shown difficulties in both micro and macro elements of narrative production. However, the above-mentioned studies all involve English-speaking children with SLI, children with SLI in Taiwan or Cantonese-speaking children with SLI. To date, no empirical study has ever been done on the narrative skills of Mandarin-speaking children with SLI in Mainland China. The present study aims to investigate the development of narrative language in Chinese children with specific language impairment aged four to six years in Mainland China in three dimensions: narrative structure, evaluation, and temporality. The research questions are as follows:

1. What are the overall characteristics, specific features and the developmental path of narrative structure in young Chinese children with SLI aged four to six years? Are they consistent with children with typical development?
2. What are the overall characteristics, the specific features and the developmental path of narrative evaluation in young Chinese children with SLI aged four to six? Are they consistent with children with typical development?
3. What are the overall characteristics, specific features and developmental path of narrative temporality in young Chinese children with SLI aged four to six? Are they consistent with children with typical development?

Method

Participants

Children with SLI. Six children at age four (\pm three months) who had specific language impairment were selected based on parent report and teachers' referral. Taking age four as the onset of study was due to the fact that it is difficult to identify a child with SLI before the age of four.

Those 6 children were assessed according to current criteria for diagnosing children with SLI (Leonard, 1998; Stark & Tallal, 1981; Watkins, 1994). They were assessed regarding their non-verbal intelligence and level of language development. Tests included the McCarthy Scale of Children's Abilities Chinese-Revised (Cheng & Li, 1994). Those children who obtained a non-verbal IQ standard score below 80 were excluded from the study. A hearing test was also administered. According to Chinese criteria for the classification of hearing impairment, an average hearing loss of more than 41 DB is regarded as hard of hearing. Each child passed a hearing screening for each ear (25 dB at 500, 1000, 2000 and 4000 Hz).

Language ability was assessed by using standardized and nonstandardized language tests (MLU in the latter case). The standardized language tests included one subtest of comprehensive language skills and one subtest of expressive language skills from the Scale of Preschool Children with Language Impairment (Lin & Lin, 1994), the Chinese version of Peabody Picture Vocabulary Test-Revised (Lu & Liu, 1998). Children who had scores of at least -1.25 standard deviations below the mean or below the tenth percentile in two or more language tests were identified as children with SLI. Moreover, the MLU of language profiles based on transcripts of spontaneous conversations was calculated (Dunn, Flax, Slivinski, & Aram, 1996). Those children whose MLU was so much lower than their age-matched peers that it indicated a delay of at least 1 year (Bishop, 1997) got included in the study. After all testing, three children (1 girl, 2 boys) were selected as participants in the present study (called SLI1, SLI2 and SLI3) and have been followed for up for 20 months. Their teachers were asked to determine that none of the children had sensory disabilities, oral motor problems, neurological problems, or socio-emotional difficulties. Consent forms were signed by parents of each child.

Children with typical development. There were cross-sectional and longitudinal data with typically developing children. The cross-sectional data came from 60 children with typical development ranging in age from four to six years old (20 children for each age group with a balance of gender). All children were recruited from a kindergarten affiliated with a university. Teachers were asked to confirm that they showed normal language development for their age (See Table 1).

Table 1. Basic information about children with typical development aged four to six

Age group	Gender (boys/girls)	Age range (months)	Mean age (months)
age four	8/12	45–51	47.90
age five	11/9	57–63	61.70
age six	10/10	69–75	72.75

The longitudinal data were collected from three children with typical development who were equivalent in age and gender (1 girl, 2 boys) to their counterparts in the SLI group. The children selected also came from the same kindergarten as children with SLI and were named as TDC1, TDC2 and TDC3. They also were confirmed by their teachers to have normal language abilities and no history of speech or psychological therapy. These 3 children have also been followed for up for 20 months starting at the age of four.

The next step involved standardizing the variables of MLU5 (Mean Length of five Longest Utterances), CTTR (Corrected Type-Token Ratio), MLT (Mean Length of Turns) of these 3 children at age four, five and six to test whether the children with typical development to be followed longitudinally would be grammatically, lexically and pragmatically equivalent to children with typical development of each age group in cross-sectional data. In order to accomplish this, we converted all scores to *z*-scores. The independent sample *t*-test showed that in all dependent variables, there was no significant difference between the 3 children who were followed up and other children of each age group, indicating that these 3 children were a representative typical sample.

All participants of the study were recruited from kindergartens in Shanghai and were the only child of the family. Table 2 shows basic information on the 3 children with SLI and the 3 age-matched children with typical development.

Table 2. Basic information about children with SLI and their age controls

	Child type	Gender	Age
First pair	SLI1	Girl	3;11
	TDC1	Girl	3;11
Second pair	SLI2	Boy	3;10
	TDC2	Boy	3;9
Third pair	SLI3	Boy	4;1
	TDC3	Boy	4;1

Procedure

Before and after the interactions, the experimenter took great care to develop an interactive relationship with each of the subjects. All the children grew increasingly familiar with the experimenter, viewed her as a special friend, and seemed to look forward to the conversation as a special event.

The major types of narrative that have been analyzed in research and practice with children are scripts, movie or story retellings, fictional narratives and personal narratives. Among these different types of narratives, personal narratives are integral to all cultures and ages (McCabe & Bliss, 2003). They require a narrator to organize and sequence events without having a prior structure provided by, for example, a wordless picture book. This is a task that might reveal difficulties in children with SLI who have discourse impairment (McCabe & Bliss, 2003). Therefore, personal narratives were chosen to be collected and analyzed in this study.

The same experimenter interviewed children in their kindergarten (or sometimes in their homes) to elicit narratives following the procedure developed by Peterson and McCabe (1983). The experimenter first made sure children were comfortable and then introduced the topics based on the phone interviews with children's main caregivers (mostly mothers, some grandparents). If the child responded with a narrative, the experimenter would just echo what the child said to show their interest or say relatively neutral things like "Umm hmm," "Yeah," or "anything else?" to minimize the possibility of experimenter effects because children's stand-alone skill in narrating was to be examined. When a child indicated there was nothing to say about a topic, the experimenter would move to the next topic. Stickers were given to children as rewards at the end of the conversation. Longitudinal data were collected every 2 months for 20 months. All interactions were audio- and video-taped. Each child's two most sophisticated examples of narrative were used for analysis by referring to McCabe and Rollins (1994) classification system for preschool narratives.

Transcription, coding and reliability procedures

The language samples were transcribed from videotapes in Chinese characters following the guidelines for Codes for Human Analysis of Transcripts (CHAT), part of the Child Language Data Exchange System (CHILDES; MacWhinney, 2000), parsed at the clause level (Berman & Slobin, 1994). The number of clauses marked as [^c] was tallied to quantify story length. A clause was defined as a verb and its arguments, for example, the utterance, *ta1 song4 wo3 qu4 yi1yuan4* 'He sent me to the hospital' was coded as one clause, whereas *mei2gui1hua1 ci4zha2 dao4 wo3de0 shou3, zha2de0 wo3 hao3tong4* 'The rose thorns hurt my hand, and it's really hurt'

was coded as two clauses. To objectively examine the child's grammatical and independent narrative abilities, utterances such as fillers (ums, ahs, etc.), imitations, self-repetitions and utterances which were supported by the experimenter were excluded from analysis.

The transcripts were completed by four university students trained in the transcription process but unfamiliar with the details of the study and then checked a second time by the author, who had conducted all the interactions with the subjects and was familiar with the children's speech patterns. After being transcribed and checked, the coding was completed by the author. Codes were entered on the computer directly below each clause line in three dimensions: narrative structure, evaluation and temporality. Fifty percent of the transcripts were checked on a line-by-line basis for coding accuracy by another researcher who was very familiar with the coding system and unaware of any hypotheses about the study. All disagreements were discussed and resolved.

Narrative structure coding. Nine types of narrative structure were categorized from the personal life stories based on the actual data and an adaptation of high point structure (Chang, 2009; Labov, 1972; Peterson & McCabe, 1983). The codes, definitions and examples are listed in the following:

1. ACT-narrative talk of action which has happened or is happening (e.g., "*He hit me.*", "*She was running after the butterfly.*").
2. DRD.POT-durative information of person, object, time or place (e.g., "*My friend and me were in the park.*").
3. DRD.ACT-durative information with inclusion of actions (e.g., "*when I was watching TV, ...*").
4. DRD.LAB-mere mention of specific names of background information (e.g. "*We went to park-Zhongshan Park.*").
5. EVA-evaluative narration: clauses that are nonevents and contain only evaluation such as description of internal states, intentions, compulsions, and so on (e.g., "*She was very upset.*"). Subtypes of evaluation are listed in the following section of evaluation coding.
6. SPE.DIR-direct speech (e.g., He said: "*Is this toy yours?*").
7. SPE.REP-reported speech (e.g., "*Then the teacher told us to bring a storybook back to school.*").
8. VEB.GES-narrative together with relevant gestures (a newly-added code): children with SLI often expressed themselves with gestures when telling a story. (e.g., A child with SLI was saying "*xxx put up his hands*". When he was saying this, he gave gestures of putting up hands. Some children with SLI can't express "*put up hands*" verbally and just gave gestures.).
9. APP.COD-codas: formalized endings of a narrative (e.g., "*That's it.*", "*That's all.*").

Evaluation coding. Evaluative devices are used to signal the point of the story from the narrator's perspective. Twenty-four types of evaluation from Chang (2009) were included:

1. ELN-elongation (e.g., “*It’s soooooo cute.*”).
2. STR-a marked emphasis in voice (e.g., “*Is it really?!*” with a marked emphasis in voice of the word “really”).
3. ONO-onomatopoeia: sound effect (e.g., “*pang pang pang*”).
4. REP-repetitions for effect (e.g., “*Then I cried I cried I cried.*”).
5. IND-intensifiers or delimiters, including comparative and superlative (e.g., “*a bit*”, “*very*”, “*super*”).
6. COM-compulsion words (e.g. “*They had to leave.*”, “*My mom made me play piano every day.*”).
7. WRD. ADJ-evaluative adjectives (e.g., “*lazy*”, “*smart*”, “*considerate*”).
8. WRD. ADV-evaluative adverbs (e.g., “*really*”, “*certainly*”, “*eventually*”).
9. WRD. NON-evaluative nouns (e.g. “*He was just a dummy.*”).
10. WRD.VEB-evaluative verbs (e.g. “*He dashed out of the classroom*”).
11. WRD.EXC-evaluative exclamations (e.g., “*Wa*”, “*Oh*”).
12. IDI-idioms (e.g., “*colorful*”- “*wu3yan2liu4se4*”).
13. SIM-similes or metaphors (e.g., “*The cloud was just like an eagle.*”).
14. EGG-exaggeration (e.g., “*I hit the ball out of the park.*”).
15. NEG-explicit negations or defeated expectations (e.g., “*I was not scared.*”).
16. INT-intentions, purposes, desires, hopes (e.g., “*I want to have a Barbie as my gift.*”).
17. GUE-hypotheses, guesses, inferences, predictions (e.g., “*If I were you, I would ...*”, “*If ... possible, ...*”).
18. JUD-judgments or comments (e.g., “*This is a nice house.*”).
19. EMO-internal emotion states (e.g., “*The girl was mad with me.*”).
20. PHY-physical condition (e.g., “*She was having a high fever.*”).
21. FAC-fact per se (e.g., “*The boy was born in the year of dragon.*” Chinese people have special opinion of kids who are born in the year of dragon, which is evaluative.)
22. TAN-tangential information (e.g., “*She gave me ten dollars for going in there.*” Ten dollars is a lot of money when you’re little.)
23. ATT-attention getter (e.g., “*listen*”, “*you know what?*”).
24. CAU-causality (e.g., “*Because the moment I think of it, I feel scared.*”).

Temporality coding. Seven types of temporality (marked by use of connectives) were included from Chang (2009) as presented in the following:

1. SIM-simple connectives (e.g., “*and*”, “*or*”).
2. ADD-additive connectives (e.g., “*not only...but also...*”).

3. SEQ-sequential connectives (e.g., “then”, “and then”, “later”).
4. TEM-temporal connectives (e.g., “when”, “before”, “afterwards”, “as soon as”, “finally”).
5. ADV-adversative connectives (e.g., “but”, “however”, “though”).
6. CAU-causal connectives (e.g., “because”, “so”, “therefore”, “as a result”).
7. OPT-optional connectives (e.g., “if”).

Statistical analyses

First, to examine the overall characteristics of narrative performance in young Chinese children with SLI aged from four to six, a one-way analysis of variance (ANOVA) was conducted to test for group differences (without control of age) on each dimension of narrative performance (the total number of narrative structures, the variety of types of narrative structure; the total number of evaluations, the variety of types of evaluation; the total number of temporal connectives, the variety of types of temporality). Significant differences ($p < .05$) were followed by a Turkey post hoc analysis.

Then to probe the specific features of narrative performance in young Chinese children with SLI aged from four to six, a one-way ANOVA was conducted to test for group differences on subtypes of each dimension at each age. The data of children with SLI at age four, five and six were sampled from their 20-month longitudinal data. Finally we got nine data points for age four and five and six data points for age six. Absolute and relative frequency data were obtained as both kinds of data are important (Hoff-Ginsberg, 1992).

Finally, the individual growth model was used to examine the developmental rate, the difference in the rate of change and the developmental tendency of each narrative dimension among 3 children with SLI and 3 age-matched children with typical development (Willett, 1994).

Results

Narrative structure

In Table 3, the means, standard deviations and group comparisons for the total number of and the variety of types of narrative structure are presented for all children in two groups (with age and gender controlled).

A significant difference in the total number of narrative structures ($p = .000$) was found between the group with SLI ($M = 14.93$, $SD = 8.15$) and the group with TD ($M = 28.05$, $SD = 16.25$). The narrative length (represented by the total number

Table 3. Means, Standard Deviations and Comparison of SLI and TD groups on the narrative structure

Variable	SLI (<i>N</i> = 30)		TD (<i>N</i> = 60)		<i>df</i>	<i>t</i> value	<i>p</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Total no. of narrative structures	14.93	8.15	28.05	16.25	1	-4.16**	.00
Variety of types of narrative structure	6.20	1.90	6.43	1.94	1	.55	.59

** $p < .01$.

of narrative structures) of children with SLI was just about half of the length of children with typical development. Children with SLI ($M = 6.20$, $SD = 1.90$) did not differ significantly from children in the TD group ($M = 6.43$, $SD = 1.94$) on the variety of types of narrative structure ($p = .59$), though children with SLI used fewer types of narrative structure comparatively.

The specific features of narrative structure of children with SLI at age four, five and six in comparison with children with TD (Mean and SD scores) are presented in Tables 4, 5 and 6.

Table 4. Means, Standard Deviations and Comparison of SLI and TD groups on narrative structure at age four

Narrative structure	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t</i> value	<i>p</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Talk of action which has happened or is happening	4.58	4.10	9.80	5.16	1	-2.98**	.01
Information of person, object, time or place	2.83	1.53	3.95	2.40	1	-1.44	.16
Evaluative narration	1.00	0.74	2.70	2.27	1	-2.50*	.02
Narrative together with relevant gestures	0.58	0.90	0.20	0.52	1	1.53	.14
Codas	0.50	0.91	0.45	0.67	1	0.18	.86
Durative information with inclusion of actions	0.42	0.79	1.30	1.38	1	-2.02*	.04
Direct speech	0.25	0.87	0.25	0.55	1	.000	1.00
Specific names of background information	0.00	0.00	0.50	0.89	1	-1.94	.06
Reported speech	0.00	0.00	0.20	0.62	1	-1.12	.27

* $p < .05$. ** $p < .01$.

Table 5. Means, Standard Deviations and Comparison of SLI and TD groups on narrative structure at age five

Narrative structure	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Talk of action which has happened or is happening	7.83	4.39	12.05	5.74	1	-2.18*	.04
Information of person, object, time or place	5.50	2.81	4.30	3.83	1	.94	.35
Evaluative narration	0.67	0.98	2.35	2.18	1	-2.51*	.02
Narrative together with relevant gestures	1.33	1.56	0.40	1.57	1	1.63	.11
Codas	1.00	1.04	0.60	0.68	1	1.32	.20
Durative information with inclusion of actions	0.50	0.90	2.60	2.06	1	-3.32**	.00
Direct speech	0.00	0.00	0.70	1.69	1	-1.43	.16
Specific names of background information	0.00	0.00	0.35	0.88	1	-1.38	.18
Reported speech	0.00	0.00	0.20	0.41	1	-1.68	.10

p* < .05. *p* < .01.

Table 6. Means, Standard Deviations and Comparison of SLI and TD groups on the narrative structure at age six

Narrative structure	SLI (<i>N</i> = 6)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Talk of action which has happened or is happening	9.33	6.25	18.75	9.63	1	-2.24*	.04
Information of person, object, time or place	6.33	2.58	9.25	6.05	1	-1.14	.27
Evaluative narration	1.67	2.07	5.70	3.63	1	-2.58*	.02
Narrative together with relevant gestures	0.33	0.82	1.25	2.57	1	-.85	.40
Codas	1.33	0.82	0.30	0.47	1	3.96**	.00
Durative information with inclusion of actions	0.67	0.52	3.35	2.76	1	-2.34*	.03
Direct speech	1.00	2.45	1.60	2.01	1	-.61	.55
Specific names of background information	0.00	0.00	0.20	0.70	1	-.69	.49
Reported speech	0.00	0.00	0.85	1.23	1	-1.67	.11

p* < .05. *p* < .01.

Table 4 shows that at age four, children with SLI didn't use mere mention of specific names of background information or reported speech among nine types of narrative structure. There were significant differences between the two groups on narrative talk of action which has happened or is happening ($t = -2.98, p < .01$), evaluative narration ($t = -2.50, p < .05$) and durative information with inclusion of actions ($t = -2.02, p < .05$). The group with TD scored significantly higher than the group with SLI on these three types. As indicated in Table 4, there were no other significant differences on other types of narrative structure. But the group with SLI had a higher mean score than the group with TD on narrative together with relevant gestures and codas.

Table 5 shows at age five, children with SLI didn't use mere mention of specific names of background information, direct speech or reported speech among nine types of narrative structure. There were still significant differences between the two groups on narrative talk of action which has happened or is happening ($t = -2.18, p < .05$), evaluative narration ($t = -2.51, p < .05$) and durative information with inclusion of actions ($t = -3.32, p < .01$). The group with TD scored significantly higher than the group with SLI on these three types of narrative structure. No significant difference was found with other types. Consistent with the SLI group at age four, five-year-old children with SLI also had a higher mean score than TD group on narrative together with relevant gestures and codas.

Table 6 shows at age six, children with SLI still haven't used mere mention of specific names of background information or reported speech among nine types of narrative structure. Significant differences were found between two groups not only on narrative talk of action which has happened or is happening ($t = -2.24, p < .05$), evaluative narration ($t = -2.58, p < .05$) and durative information with inclusion of actions ($t = -2.34, p < .05$) – where the TD group scored significantly higher than the SLI group – but also on codas ($t = 3.96, p < .01$). The SLI group scored significantly higher on codas than the TD group. As indicated in Table 6, no significant differences were found on other types.

To probe the main types of narrative structure employed by children with SLI and their comparison with children with typical development, the proportions of each type of narrative structure used by both groups were analyzed at age four, five and six. The results are presented in Table 7.

Table 7 shows across three ages, narrative talk of action which has happened or is happening and durative information of person, object, time or place were the top two types of narrative structure used by both SLI and TD groups; these two types constituted more than 70% of all narrative structure in their narratives. A detailed study of other types of narrative structure revealed that children with SLI used evaluative narration and durative information with inclusion of actions proportionately less frequently than children with typical development at three ages while their use of codas was more frequent at each age.

Table 7. Proportion of each type of narrative structure for SLI and TD group at age four, five and six

Narrative structure	Age four		Age five		Age six	
	SLI	TD	SLI	TD	SLI	TD
Talk of action which has happened or is happening	45.08	50.65	46.53	51.17	45.16	45.45
Information of person, object, time or place	27.87	20.41	32.67	18.26	30.65	22.42
Evaluative narration	9.84	13.95	3.96	9.98	8.06	13.82
Narrative together with relevant gestures	4.92	2.33	5.94	2.55	6.45	0.73
Codas	5.74	1.03	7.92	1.70	1.61	3.03
Durative information with inclusion of actions	4.10	6.72	2.97	11.04	3.23	8.12
Direct speech	2.46	1.29	0.00	2.97	4.84	3.88
Specific names of background information	0.00	2.58	0.00	1.49	0.00	0.48
Reported speech	0.00	1.03	0.00	0.85	0.00	2.06

Individual growth modeling on the total number of narrative structures as shown in Figure 1 was used to examine the growth trajectory, the developmental rate and differences in the rate of change in narrative structure among 3 children with SLI and 3 age-matched children with typical development. The score at zero months (Y intercept) represents the predicted narrative structure ability for each child at the onset of study. The sign * or ** indicates that the child's development is significant or very significant, respectively.

As shown in Figure 1, both SLI1 and TDC1 were not developing significantly on the total number of narrative structures. At the onset of study, there was a great difference on the predicted narrative structure score between SLI1 and TDC1 (SLI1 = 2.60; TDC1 = 5.20). During the 20-month follow up, the developmental rate of SLI1 and TDC1 was not much different (SLI1 $\hat{\beta}_1 = 0.15$; TDC1 $\hat{\beta}_1 = 0.11$). Their similarity on the developmental rate couldn't be accounted for due to their big gap on the predicted narrative structure score at the beginning. However, we can see the predicted narrative structure score of SLI1 was still far lagging behind TDC1 at the end of study.

For the second pair SLI2 and TDC2, both of them were developing significantly on the total number of narrative structures. At the beginning, their predicted narrative structure scores were comparable (SLI2 $\hat{Y} = 2.20$, TDC2 $\hat{Y} = 2.70$), but the developmental rate of SLI2 was very low, just about one third of that of

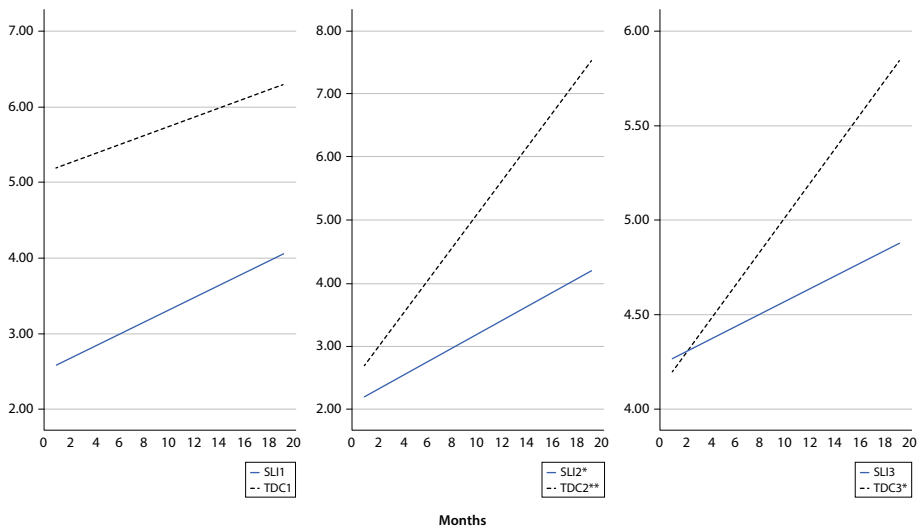


Figure 1. The predicted growth model of the total number of narrative structures of 3 children with SLI and 3 age-matched children with typical development

TDC2 (SLI2 $\hat{\beta}_1 = 0.20$; TDC2 $\hat{\beta}_1 = 0.60$). At the end of study, a great difference was found between SLI2 and TDC2 on the predicted score of the total number of narrative structures (SLI2 $\hat{Y} = 4.20$; TDC2 $\hat{Y} = 7.53$). We can see that although both SLI2 and TDC2 were developing significantly on narrative structure from four to six, the developmental trajectory of SLI2 was obviously different from that of TDC2, revealing great developmental differences between them.

As shown in Figure 1, SLI3 was not developing significantly on the total number of narrative structures while TDC3 was developing significantly. At the beginning, their predicted narrative structure scores were similar (SLI3 $\hat{Y} = 4.27$; TDC3 $\hat{Y} = 4.20$). As with SLI2, the developmental rate of SLI3 on the narrative structure was only about one third of that of TDC3 (SLI3 $\hat{\beta}_1 = 0.06$; TDC3 $\hat{\beta}_1 = 0.16$). At the end of study, their difference in predicted narrative structure score was quite large (SLI3 $\hat{Y} = 4.88$; TDC3 $\hat{Y} = 5.84$). There was also great developmental difference between SLI3 and TDC 3 on narrative structures.

Narrative evaluation

In Table 8, the means, standard deviations and group comparisons for the total number of and the variety of types of evaluation are presented for all children in two groups (with age and gender controlled).

Table 8. Means, Standard Deviations and Comparison of SLI and TD groups on narrative evaluation

Variable	SLI (<i>N</i> = 30)		TD (<i>N</i> = 60)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Total no. of narrative evaluations	3.73	3.13	9.70	7.03	1	-4.43**	.00
Variety of types of narrative evaluation	2.40	1.45	5.42	2.79	1	-5.55**	.00

** $p < .01$.

A significant difference in the total number of narrative evaluations ($p = .00$) was found between the SLI group ($M = 3.73$, $SD = 3.13$) and TD group ($M = 9.70$, $SD = 7.03$). There was also a significant difference in the variety of types of evaluation ($p = .000$) between children with SLI ($M = 2.40$, $SD = 1.45$) and children in the TD group ($M = 5.42$, $SD = 2.79$). Compared with children with typical development, children with SLI not only expressed their evaluation less frequently but also used fewer devices for expressing evaluation in their narratives.

The specific features of narrative evaluation in children with SLI at age four, five and six and their comparison with TD children (Mean and SD scores) are presented in Tables 9, 10 and 11. Among twenty-four types of evaluation, both SLI and TD groups never used the following six types: stressors, elongation, exclamation, facts per se, tangential information and attention-getters. These six types are therefore not shown in the tables.

Table 9 shows at age four, neither the SLI nor the TD group used exaggeration or idioms to express evaluation among eighteen types of evaluation. In addition, children with SLI didn't use the following six types: similes or metaphors; evaluative verbs; hypotheses, guesses, inferences, predictions; causality; evaluative nouns and repetitions for effect. Among ten evaluation types employed by both groups, children with SLI differed significantly from age controls on internal emotional states ($t = -3.39$, $p < .01$). The children with typical development scored significantly higher than the children with SLI on this type. As indicated in Table 9, there was no significant difference in other types.

Table 10 shows at age five, both SLI and TD groups haven't used repetitions for effect among eighteen types of evaluation. Children with SLI also didn't employ exaggeration and idioms to express evaluation. In addition, they never used the following five types: compulsion words; intentions, purposes, desires, hopes;

Table 9. Means, Standard Deviations and Comparison of SLI and TD groups on narrative evaluations at age four

Narrative evaluation	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t</i> value	<i>p</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative adjectives	1.08	1.51	1.20	1.44	1	-.22	.83
Explicit negations or defeated expectations	0.58	0.90	1.00	0.79	1	-1.37	.18
Judgments or comments	0.17	0.39	0.55	1.00	1	-1.27	.22
Intensifiers or delimiters	0.42	0.67	1.10	1.07	1	-1.98	.06
Physical condition	0.42	0.67	0.40	0.82	1	.06	.95
Evaluative adverbs	0.17	0.39	0.65	0.81	1	-1.92	.06
Internal emotion states	0.08	0.29	1.35	1.27	1	-3.39**	.00
Onomatopoeia	0.08	0.29	0.05	0.22	1	.37	.72
Compulsion word	0.08	0.29	0.00	0.00	1	1.31	.20
Similes or metaphors	0.00	0.00	0.05	0.22	1	-.77	.45
Evaluative verbs	0.00	0.00	0.25	0.44	1	-1.94	.06
Intentions, purposes, desires, hopes	0.08	0.29	0.00	0.00	1	1.31	.20
Hypotheses, guesses, inferences, predictions	0.00	0.00	0.15	0.49	1	-1.06	.30
Exaggeration	0.00	0.00	0.00	0.00	1		
Causality	0.00	0.00	0.20	0.52	1	-1.32	.20
Evaluative nouns	0.00	0.00	0.05	0.22	1	-.77	.45
Idioms	0.00	0.00	0.00	0.00	1		
Repetitions for effect	0.00	0.00	0.05	0.22	1	-.77	.45

p* < .05. *p* < .01.

hypotheses, guesses, inferences, predictions; causality and evaluative nouns. Among ten evaluation types employed by both groups, children with SLI were also significantly different from children with typical development on internal emotional states ($t = -2.95$, $p < .01$). The children with typical development scored significantly higher than the children with SLI on this type. As indicated in Table 10, there was no other significant difference in other types.

Table 11 shows at age six, both SLI and TD group still haven't used idioms to express evaluation among eighteen types of evaluation. In addition, children with SLI didn't use the following ten types: physical condition; onomatopoeia; similes or metaphors; evaluative verbs; intentions, purposes, desires, hopes; hypotheses, guesses, inferences, predictions; exaggeration; causality; evaluative nouns and repetitions for effect. Among seven evaluation types employed by both groups, children with SLI differed significantly from age controls on internal emotional states

Table 10. Means, Standard Deviations and Comparison of SLI and TD groups on narrative evaluations at age five

Narrative evaluation	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t</i> value	<i>p</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative adjectives	0.58	1.17	1.15	1.63	1	-1.05	.30
Explicit negations or defeated expectations	1.33	1.44	1.35	1.27	1	-.03	.97
Judgments or comments	0.17	0.58	0.45	0.69	1	-1.20	.24
Intensifiers or delimiters	0.25	0.62	0.55	1.00	1	-.93	.36
Physical condition	0.17	0.58	0.20	0.41	1	-.19	.85
Evaluative adverbs	0.17	0.39	0.50	0.61	1	-1.70	.10
Internal emotion states	0.25	0.45	1.30	1.17	1	-2.95**	.01
Onomatopoeia	0.17	0.39	0.05	0.22	1	1.08	.29
Compulsion word	0.00	0.00	0.10	0.31	1	-1.12	.27
Similes or metaphors	0.08	0.29	0.35	0.59	1	-1.46	.15
Evaluative verbs	0.08	0.29	0.35	0.59	1	-1.46	.15
Intentions, purposes, desires, hopes	0.00	0.00	0.15	0.37	1	-1.41	.17
Hypotheses, guesses, inferences, predictions	0.00	0.00	0.20	0.70	1	-.99	.33
Exaggeration	0.00	0.00	0.10	0.31	1	-1.12	.27
Causality	0.00	0.00	0.25	0.55	1	-1.56	.13
Evaluative nouns	0.00	0.00	0.15	0.37	1	-1.41	.17
Idioms	0.00	0.00	0.05	0.22	1	-.77	.45
Repetitions for effect	0.00	0.00	0.00	0.00	1		

* $p < .05$. ** $p < .01$.

($t = -3.11$, $p < .01$) and guesses, hypotheses, inferences, predictions ($t = -2.13$, $p < .05$). The children with SLI scored significantly lower than the children with typical development on these two types. As indicated in Table 11, there was no other significant difference in other types.

To probe the main types of evaluation employed by children with SLI and their comparison with children with typical development, the proportions of each type of evaluation were analyzed at age four, five and six. The results are presented in Table 12.

Table 12 shows at age four, five and six, among the top five types of evaluation, evaluative adjectives; explicit negations or defeated expectations and intensifiers or delimiters were three types which the SLI group and TD group used in common.

Table 11. Means, Standard Deviations and Comparison of SLI and TD groups on narrative evaluations at age six

Narrative evaluation	SLI (<i>N</i> = 6)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Evaluative adjectives	2.00	1.10	1.70	1.26	1	.53	.61
Explicit negations or defeated expectations	1.00	0.89	2.75	2.67	1	-1.56	.13
Judgments or comments	1.50	1.98	1.10	1.29	1	.59	.56
Intensifiers or delimiters	0.67	0.82	1.25	1.29	1	-1.04	.31
Physical condition	0.00	0.00	0.60	0.88	1	-1.64	.11
Evaluative adverbs	0.33	0.52	1.90	2.10	1	-1.79	.09
Internal emotion states	0.17	0.41	2.60	1.88	1	-3.11**	.01
Onomatopoeia	0.00	0.00	0.35	0.67	1	-1.26	.22
Compulsion word	0.17	0.41	0.10	0.31	1	.43	.67
Similes or metaphors	0.00	0.00	0.25	0.44	1	-1.36	.19
Evaluative verbs	0.00	0.00	0.55	0.69	1	-1.94	.07
Intentions, purposes, desires, hopes	0.00	0.00	0.20	0.41	1	-1.18	.25
Hypotheses, guesses, inferences, predictions	0.00	0.00	0.45	0.51	1	-2.13*	.04
Exaggeration	0.00	0.00	0.15	0.37	1	-.99	.33
Causality	0.00	0.00	0.25	0.72	1	-.84	.41
Evaluative nouns	0.00	0.00	0.05	0.22	1	-.54	.59
Idioms	0.00	0.00	0.00	0.00			
Repetitions for effect	0.00	0.00	0.35	0.81	1	-1.04	.31

p* < .05. *p* < .01.

These three types accounted for about 65% of all evaluation used by children with SLI but only 43% for children with typical development. Apart from these three types of evaluation, children with typical development also used internal emotional states and evaluative adverbs more frequently in their narratives. As indicated in Table 12, children with typical development have employed all eighteen types of evaluation across three ages while children with SLI have only used twelve types. There were six types – hypotheses, guesses, inferences, predictions; exaggeration; causality; evaluative nouns; idioms; repetitions for effect that children with SLI never employed in their narratives across three ages.

Table 12. Proportion of each type of evaluation for SLI and TD group at age four, five and six

Narrative evaluation	Age four		Age five		Age six	
	SLI	TD	SLI	TD	SLI	TD
Evaluative adjectives	34.17	17.02	17.95	15.86	34.31	11.64
Explicit negations or defeated expectations	18.40	14.18	41.03	18.62	17.15	18.84
Judgments or comments	5.26	7.80	5.13	6.21	25.73	7.53
Intensifiers or delimiters	13.14	15.60	7.69	7.59	11.44	8.56
Physical condition	13.14	5.67	5.13	2.76	0.00	4.11
Evaluative adverbs	5.26	9.22	5.13	6.90	5.72	13.01
Internal emotion states	2.63	19.15	7.69	17.93	2.86	17.81
Onomatopoeia	2.63	0.71	5.13	0.69	0.00	2.40
Compulsion word	2.63	0.00	0.00	1.38	2.86	0.68
Similes or metaphors	2.63	0.00	0.00	2.07	0.00	1.37
Evaluative verbs	0.00	0.71	2.56	4.83	0.00	1.71
Intentions, purposes, desires, hopes	0.00	3.55	2.56	4.83	0.00	3.77
Hypotheses, guesses, inferences, predictions	0.00	2.13	0.00	2.76	0.00	3.08
Exaggeration	0.00	0.00	0.00	1.38	0.00	1.03
Causality	0.00	2.84	0.00	3.45	0.00	1.71
Evaluative nouns	0.00	0.71	0.00	2.07	0.00	0.34
Idioms	0.00	0.00	0.00	0.69	0.00	0.00
Repetitions for effect	0.00	0.71	0.00	0.00	0.00	2.40

Individual growth modeling of the total number of narrative evaluations, as shown in Figure 2, was used to examine the growth trajectory, the developmental rate and differences in the rate of change in narrative evaluation among 3 children with SLI and 3 age-matched children with typical development. The score at zero months (Y intercept) represents the predicted evaluation ability for each child at the onset of study. The sign * or ** indicates that the child's evaluation development is significant or very significant, respectively.

As shown in Figure 2, SLI1 was not developing significantly in the total number of narrative evaluations while TDC1 was developing very significantly. At the onset of study, the predicted evaluation scores of SLI1 and TDC1 were comparable (SLI1 \hat{Y} = 1.33; TDC1 \hat{Y} = 1.47). However, during the 20-month follow up, the developmental rate of SLI1 was just about one fifth of that of TDC1 (SLI1 $\hat{\beta}_1$ = 0.12; TDC1 $\hat{\beta}_1$ = 0.61). At the end of the study, as indicated in Figure 2, there was a large difference in the predicted evaluation score between SLI1 and TDC1 (SLI1 \hat{Y} = 2.54; TDC1 \hat{Y} = 7.53). The obvious difference on the developmental trajectory of narrative evaluation between SLI1 and TDC1 could be observed.

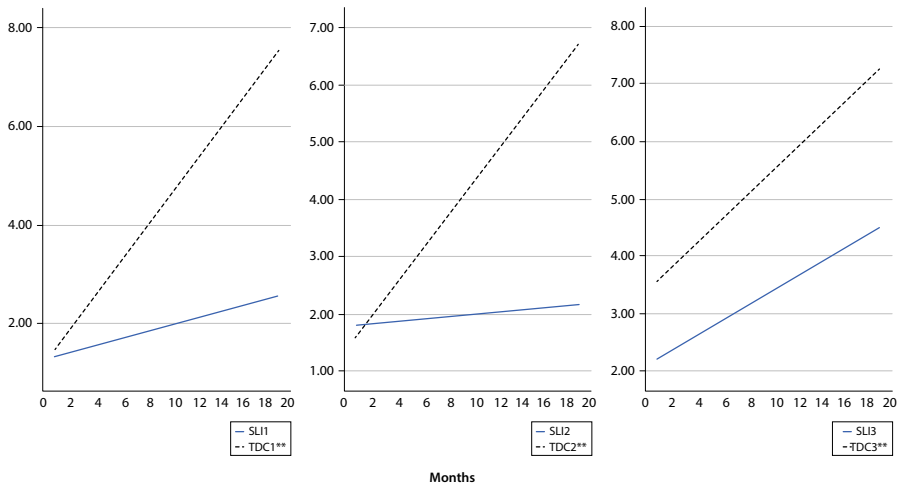


Figure 2. The predicted growth model of the total number of narrative evaluations of 3 children with SLI and 3 age-matched children with typical development

For the second pair SLI2 and TDC2, Figure 2 shows SLI2 was developing very slowly in the total number of evaluations while TDC2 was developing very significantly. At the beginning, the predicted evaluation score of SLI2 was comparable to that of TDC2 (SLI2 $\hat{Y} = 1.80$; TDC2 $\hat{Y} = 1.59$), but the developmental rate of SLI2 was far lower than that of TDC2 (SLI2 $\hat{\beta} = 0.04$; TDC2 $\hat{\beta} = 0.73$). Great difference was found between SLI2 and TDC2 on the predicted evaluation score (SLI2 $\hat{Y} = 2.16$; TDC2 $\hat{Y} = 6.73$) at the end of study. As with the first pair SLI1 and TDC1, there was great developmental difference between SLI2 and TDC2 in narrative evaluation.

As shown in Figure 2, SLI3 was not developing significantly in the total number of narrative evaluations while TDC3 had significant growth. At the onset of study, the predicted evaluation score of SLI3 was lower than that of TDC3 (SLI3 $\hat{Y} = 2.22$; TDC3 $\hat{Y} = 3.57$). The predicted evaluation developmental rate of SLI3 was also lower than that of TDC3 (SLI3 $\hat{\beta} = 0.29$; TDC3 $\hat{\beta} = 0.53$). At the end of study, a large difference in the predicted evaluation score was found between SLI3 and TDC3 (SLI3 $\hat{Y} = 4.47$; TDC3 $\hat{Y} = 7.29$). The 20-month longitudinal study revealed that SLI3's performance on evaluation was lower than TDC3 with age.

Narrative temporality

In Table 13, the means, standard deviations and group comparisons for the total number of and the variety of types of temporality are presented for all children in two groups (with age and gender controlled).

Table 13. Means, Standard Deviations and Comparison of SLI and TD groups on narrative temporality

Variable	SLI (<i>N</i> = 30)		TD (<i>N</i> = 60)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Total no. of narrative temporality connectives used	3.57	2.93	12.07	6.76	1	-6.57**	.00
Variety of types of narrative temporality	1.77	1.14	2.88	0.98	1	-4.84**	.00

** $p < .01$.

A significant difference in the total number of narrative temporal connectives ($p = .00$) was found between the SLI group ($M = 3.57$, $SD = 2.93$) and the TD group ($M = 12.07$, $SD = 6.76$). There was also significant difference in the variety of types of temporality ($p = .00$) between the SLI group ($M = 1.77$, $SD = 1.14$) and the TD group ($M = 2.88$, $SD = 0.98$). Children with SLI not only expressed temporality less frequently but also used fewer types of temporality in their narratives than children with typical development.

The specific features of the narrative temporality in children with SLI at age four, five and six and their comparison with TD children (Mean and SD scores) are presented in Tables 14, 15 and 16.

Table 14 shows that at age four, neither group used additive connectives and optional connectives among seven types of temporality. In addition, children with SLI didn't use causal connectives or adversative connectives. Among the three temporality types employed by both groups, children with SLI differed significantly from age controls on sequential connectives ($t = -4.69$, $p < .01$).

Table 14. Means, Standard Deviations and Comparison of SLI and TD groups on narrative temporality at age four

Narrative temporality	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Sequential connectives	0.50	0.80	3.95	2.46	1	-4.69**	.00
Temporal connectives	0.75	1.71	1.75	1.97	1	-1.46	.16
Simple connectives	0.42	0.67	1.25	1.55	1	-1.77	.09
Causal connectives	0.00	0.00	0.25	0.55	1	-1.56	.13
Adversative connectives	0.00	0.00	0.35	0.93	1	-1.29	.21
Additive connectives	0.00	0.00	0.00	0.00	1		
Optional connectives	0.00	0.00	0.00	0.00	1		

* $p < .05$. ** $p < .01$.

Table 15. Means, Standard Deviations and Comparison of SLI and TD groups on narrative temporality at age five

Narrative temporality	SLI (<i>N</i> = 9)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Sequential connectives	2.17	1.59	6.20	3.86	1	-3.43**	.00
Temporal connectives	1.25	1.14	3.40	2.58	1	-2.72*	.01
Simple connectives	0.75	0.75	1.05	1.19	1	-.78	.44
Causal connectives	0.00	0.00	0.20	0.41	1	-1.68	.10
Adversative connectives	0.00	0.00	0.10	0.31	1	-1.12	.27
Additive connectives	0.00	0.00	0.05	0.22	1	-.78	.45
Optional connectives	0.00	0.00	0.00	0.00	1		

* $p < .05$. ** $p < .01$.

Table 16. Means, Standard Deviations and Comparison of SLI and TD groups on narrative temporality at age six

Narrative temporality	SLI (<i>N</i> = 6)		TD (<i>N</i> = 20)		<i>df</i>	<i>t value</i>	<i>p value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Sequential connectives	3.17	1.47	9.55	5.82	1	-2.63*	.02
Temporal connectives	2.00	1.10	4.85	3.03	1	-2.23*	.04
Simple connectives	0.83	0.98	2.25	2.20	1	-1.52	.14
Causal connectives	0.17	0.41	0.25	0.72	1	-.27	.79
Adversative connectives	0.00	0.00	0.55	1.00	1	-1.33	.20
Additive connectives	0.00	0.00	0.10	0.45	1	-.54	.59
Optional connectives	0.00	0.00	0.10	0.45	1	-.54	.59

* $p < .05$.

Children with typical development scored significantly higher than children with SLI on this type. As indicated in Table 14, there was no significant difference in temporal connectives and simple connectives.

Table 15 shows that at age five, neither group used optional connectives among seven types of temporality. In addition, children with SLI didn't use additive connectives, causal connectives or adversative connectives. Regarding the three temporality types employed by both groups, children with SLI differed significantly from age controls on sequential connectives ($t = -3.43$, $p < .01$) and temporal connectives ($t = -2.72$, $p < .05$). Children with typical development scored significantly higher than children with SLI in these two types. As indicated in Table 15, there was no significant difference in other types.

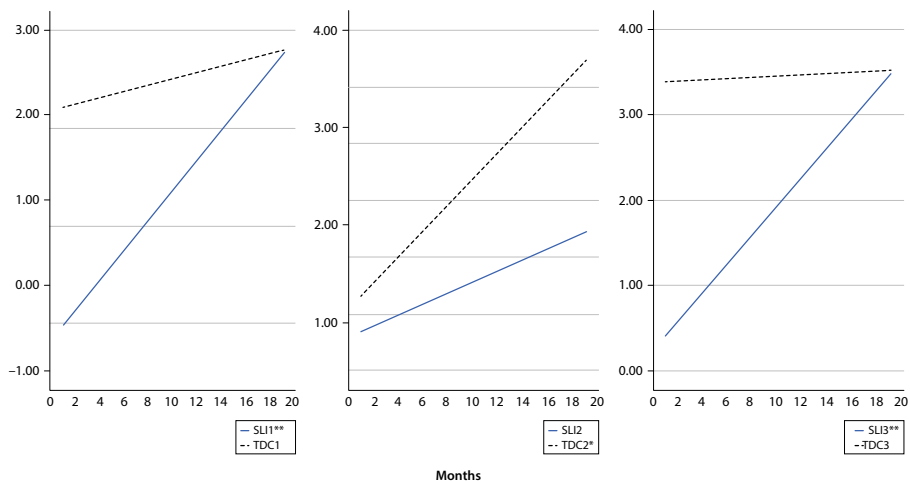


Figure 3. The predicted growth model of the total amount of narrative temporality of 3 children with SLI and 3 age-matched children with typical development

As shown in Figure 3, SLI1 was developing very significantly on the total amount of narrative temporality while TDC1 was not. At the onset of study, the predicted temporality score of SLI1 was much lower than that of TDC1 (SLI1 $\hat{Y} = -0.47$; TDC1 $\hat{Y} = 2.09$). However, during the 20-month follow-up, the developmental rate of temporality of SLI1 was higher than that of TDC1 (SLI1 $\hat{\beta}_1 = 0.32$; TDC1 $\hat{\beta}_1 = 0.11$). At the end of study as indicated in Figure 3, SLI1 was catching up with TDC1 on the total amount of temporality (SLI1 $\hat{Y} = 2.74$; TDC1 $\hat{Y} = 2.76$).

For the second pair SLI2 and TDC2, SLI2 was not developing significantly on the total amount of temporality while TDC2 was. At the beginning, the predicted temporality score of SLI2 was lower than that of TDC2 (SLI2 $\hat{Y} = 0.90$; TDC2 $\hat{Y} = 1.27$), and so was the developmental rate (SLI2 $\hat{\beta}_1 = 0.17$; TDC2 $\hat{\beta}_1 = 0.24$). At the end of study, the gap between SLI2 and TDC2 on the predicted temporality score was expanding.

As shown in Figure 3, SLI3 was developing very significantly on the total amount of narrative temporality while TDC3 had slow growth. As with SLI1, the predicted temporality score of SLI3 at the beginning was much lower than that of TDC3 (SLI3 $\hat{Y} = 0.40$; TDC3 $\hat{Y} = 3.39$). However, during the 20-month study, the predicted developmental rate of temporality of SLI3 was much higher than that of TDC3 (SLI3 $\hat{\beta}_1 = 0.31$; TDC3 $\hat{\beta}_1 = 0.02$). At the end of the study, SLI3 caught up with TDC3 on the total amount of temporality (SLI3 $\hat{Y} = 3.49$; TDC3 $\hat{Y} = 3.53$).

Discussion

The present study aimed to investigate the narrative development of Chinese children with SLI aged from four to six years in three dimensions – structure, evaluation and temporality.

The group with SLI's narrative structure was lower than that of their peers with typical development in length and components. Across three ages, the narrative length of children with SLI was shorter than that of their age controls. In particular, at age four and six, their narrative length was just about half of the length of children with typical development. The narrative length of children with SLI at age six was only comparable to the length of four-year-old children with typical development. Specifically, Chinese children with SLI across three ages reported fewer events, less evaluation talk, less durative description with actions and did not include specific names of background information or reported speech, which made their narrative structure less complete. In contrast, children with typical development at age four could present complete narrative structure; they included all nine types of narrative structure in their personal narratives. Past research has also shown that children with SLI produced less mature narrative structures than age-matched children (Andreu, Sanz-Torrent, Olmos, & MacWhinney, 2011; Miranda et al., 1998; Manhardt & Rescorla, 2002). They produced fewer essential plot components than age-matched controls, resulting in reporting fewer events and less complete episodes (Liles, 1985a, 1985b; Merritt & Liles, 1987; Roth & Spekman, 1986). The relative incompleteness and disorganization of their narratives may put a considerable burden on their listeners (Roth & Spekman, 1986). The fact that our results show that Chinese children with SLI produced incomplete components further supports the processing deficit account of this population, especially their limited capacity in working memory (Cheung, 2003; Montgomery, 2000a, 2000b, 2003). Dodwell and Bavin (2008) found a significant correlation between performance on narratives and memory tasks for both children with typical development and children with specific language impairment. Children with SLI may not be able to remember detailed information about past events. Andreu et al. (2011) did an eye movement study on the narrative comprehension and production of children with SLI. Eye movements revealed that children with SLI looked at the most semantically relevant areas of the scene fewer times than age-matched controls during the production task. As a result, they omitted more information and failed to mention important story elements.

But the finding in the present study that indicated Chinese children with SLI made less frequent mention of past events and durative description with actions may also be attributed to their difficulty with verb usage (Fletcher & Peters, 1984; Watkins, et al., 1993). Zhang (2010) made a case study of the lexical abilities of a

three-year-old Chinese child with SLI and found that the child was particularly delayed in using verbs. Xu's (2007) study indicated that Chinese children with SLI were especially lacking in verbs when they took part in play narratives.

Chinese children with SLI didn't include reported or direct speech in their narratives. As we know, narrative is a kind of decontextualized language skill, referring to children's independent ability to narrate a story by making clear references and explanations that do not rely on the context of here and now. Sulzby and Zecker's (1991) study observed that children's use of reported and direct speech can reflect their internalization of this decontextualized language skill. The finding that Chinese children with SLI haven't used any reported speech in their narratives across three ages suggested that they lack full mastery of this skill.

Chinese children with SLI aged from four to six used more codas in their narratives than their age controls. Labov (1972) argued that codas were devices located at the end of narratives that the narrator uses to signal the narrative is finished. In this view, the narrator who uses codas would be assumed to have greater pragmatic abilities by taking the listener's needs into consideration. However, detailed study of the narrative data revealed more bail-outs than genuine codas in the narratives of children with SLI compared to children with typical development. The narrative task appeared to be beyond the language and cognitive abilities of children with SLI. When narrating personal stories, children with SLI were struggling and showing great lack of confidence. They would rather give up and bail out, which was evidence of their pragmatic deficiency (Miranda et al., 1998).

Though Chinese children with SLI had poorer performance in narrative structure than children with typical development, they showed constant growth in narrative structure from the age of four to six as indicated by growth modeling. Their narratives were getting longer and the content was getting richer. However, children with SLI didn't show signs of catching up with children with typical development in narrative structure due to their generally lower developmental rate. Individual differences were also observed in the narrative structural competence in the three children with SLI.

Second, in comparison with narrative structural competence, study of narrative evaluation revealed far lower evaluation ability in Chinese children with SLI aged from four to six than their age controls. At age four, five and six, the total number and types of evaluation that children with SLI employed was only half of that of children with typical development. The total amount of and types of evaluation of six-year-old children with SLI did not reach the level of four-year-old children with typical development. Children with SLI across three ages mainly used evaluative adjectives, negatives, and intensifiers or delimiters to express evaluation, which amounted to 65% of all evaluation in their narratives. In addition to these three types, children with typical development also employed many other

devices such as exaggeration, repetition, idioms, evaluative nouns, causal explanations, guesses and inferences to express evaluation, which were not seen in the narratives of children with SLI.

Of note, there was a significant difference in the expression of internal emotional states between the two groups. Children with typical development often referred to characters' or their own inner emotions and feelings in their narratives while children with SLI did not. Previous studies of English-speaking and Taiwanese children with SLI found similar results (Klecan-Aker & Kelty, 1990; Lee, 2003; Merritt & Lies, 1987). On the one hand, children with SLI may have limited vocabulary in this aspect. Zhang's (2010) study of a preschool Chinese child with SLI indicated that the child's vocabulary regarding emotional states was very limited. Furthermore the speaker detaches himself from the narrative context when expressing emotions or feelings (Bamberg, 1997), which is more cognitively complex and challenging for children with SLI.

From age four to six, the evaluation ability of Chinese children with SLI was developing very slowly while that of age-matched children with typical development was developing significantly. Past research indicated five-year-old children provided evaluation in their narratives and also showed fast growth after age five in this regard (Bamberg & Damrad-Frye, 1991; Peterson & McCabe, 1983). Sah's (2006) study found there was a significant main effect of age on the evaluative language of preschool Taiwanese children between the age of five years and five months and five years and eleven months. As mentioned above, the language development of children with SLI was slower and their language competence was similar to that of younger children. From age four to six, Chinese children with SLI revealed a much slower developmental rate in producing evaluation than did children with typical development.

Third, study of narrative temporality indicated that the overall ability to signify temporality in Chinese children with SLI aged from four to six was lower than that of their peers with typical development. At age four, five and six, the total amount of temporality employed by children with SLI in their narratives was just about one third of that of children with typical development. The variety of types of temporality used by six-year-old children with SLI was only comparable to that of four-year-old children with typical development. This finding is consistent with past research (Kaderavek & Sulzby, 2000; Liles et al., 1995; Paul, Hernandez, Taylor, & Johnson, 1996, Roth & Spekman, 1986; Strong & Shaver, 1991; Tsai, 2006). Chinese children with SLI and their age controls both mainly used sequencers (*ran2hou4* 'then' and *jiu4* 'and then'), temporal connectives (*zhi1qian2* 'before', *zhi1hou4* 'after' and *shi2hou4* 'when' etc.) and simple connectives (*he2*, *hai2you3* 'and', *huo4* 'or') to convey narrative order, of which sequencers accounted for 50% of all temporality in their narratives. Tsai (2006) had similar findings from

children with language impairment in Taiwan. Wang (1998) also found typically-developing Taiwanese children aged from four to five more often used sequencers than other conjunctions to indicate the chronological order of events. Lee (2003) argued that Mandarin-speaking children with language impairment used sequential connectives repeatedly to increase the length of sentences and texts, which was not found in this study.

Chinese children with SLI did not make use of cause-and-effect linking words in their narratives until they were six years old while children with typical development used them at four years old. Apart from causal connectives, children with typical development also used additive connectives (*bu4jin3...er2qie3* 'not only... but also', *chu2ci3...zhi1wai4* 'besides'), adversative connectives (*ke3shi4* 'but', *sui1ran2* 'though') and optional connectives (*ru2guo3* 'if', *ke3neng2* 'probably') to convey narrative order, which were not found in the narratives of children with SLI. Hudson and Shapiro (1991) found that only by mastering the structure of a certain narrative genre, children would use more advanced cohesive ties. As mentioned above, children with SLI showed poorer performance in narrative structure. In addition, without a pre-determined structure provided by, for example, narrating a wordless picture book, the telling of personal narratives is more cognitively demanding for children with SLI, which may make their narrative disorganized and incoherent. And in preschool years, children with SLI may not be able to understand the causal, adversative or optional relationship among events.

Earlier studies indicated that children with SLI had difficulty in the appropriate use of linking words. They made more semantic errors in linking narrative clauses (Merritt & Liles, 1987). The present study showed Chinese children with SLI had no problem in semantic use of connectives, which are congruent with the findings of Miranda et al. (1998) and Pearce, James, and McCormack (2010). The differences between children with SLI and age-matched typical peers were only found in the use of total number of temporal words and types of temporality.

The temporality ability of Chinese children with SLI is undergoing pronounced growth from the age of four to six. Their use of temporal words and types of temporality got much better with age. Some children with SLI showed a higher developmental rate than paired children with typical development and also showed a trend to catch up with peers with typical development. In all, the temporality ability of children with SLI greatly improved with age, though their starting point was low.

Given the heterogeneity of SLI symptoms, it is unlikely that a single root cause of SLI will be identified. The reasons for the narrative deficits of children with SLI are complex. Research with more samples, research across different narrative genres, research including language-age matched controls and more cross-cultural studies are needed to clarify this.

Clinical implications

Based on the outcomes reported here, the future clinical intervention with Chinese children with SLI should focus on the following directions.

For narrative structure, teachers can focus on teaching verbs, adverbials (for the provision of detailed background information) and memory training. For verbs, teachers can teach with pictures, let children show and tell, and then teach relevant vocabulary. For adverbs, teachers can ask children questions related to time or location when they are doing book reading and then encourage them to describe the story with the information. Memory training involves training of phonological and functional memory. To improve phonological memory, teachers can let children do naming games and listen to rhymes, songs and stories. For functional memory, teachers can ask children to tell impressive events at home or in the kindergarten.

Evaluation is the primary area of difficulty in narration for Chinese children with SLI. In pedagogical practice, teachers can concentrate on expanding the scope of vocabulary for children with SLI, especially regarding evaluative words and words expressing inner emotions and feelings. Other types of evaluation can be imparted and repeated by exemplary demonstration, and children should be always encouraged to express their views and opinions.

Among three dimensions of narrative, Chinese children with SLI have the least difficulty in temporality. They can use sequencers, simple and temporal connectives quite well. Intervention can focus on consciously helping them sort out the logical relations between events, such as causality, transition, addition or hypothesis, which can be integrated into every detail of daily life. Then children can learn those relevant linking words naturally.

Acknowledgements

I would like to extend my sincere gratitude to my mentor-Professor Jing Zhou, Professor Chien-ju Chang, Professor Allyssa McCabe, my family – my parents, my brothers, my husband and my daughter – and my friends.

References

- Andreu, A., Sanz-Torrent, M., Olmos, J. G., & MacWhinney, B. (2011). Narrative comprehension and production in children with SLI: An eye movement study. *Clinical Linguistics & Phonetics*, 25(9), 767–783.

- Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competence. *Journal of Child Language*, 18, 689–710.
- Bamberg, M. (1997). *Narrative development: Six approaches*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Berman, R. A., & Slobin, D. I. (1994). *Relating events in narrative: A crosslinguistic developmental study*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bishop, D. V. M. (1997). *Uncommon understanding: Development and disorders of language comprehension in children*. Hove, UK: Psychology Press.
- Chang, C. (1998). The development of autonomy in preschool Mandarin Chinese-speaking children's play narratives. *Narrative Inquiry*, 8 (1), 77–111.
- Chang, C. (2004). Telling stories of experiences: Narrative development of young Chinese children. *Applied Psycholinguistics*, 25, 83–104.
- Chang, C. (2009). *Taiwan yu dalu ertong xushi nengli zhi fazhan: jiaoben, shenghuojingyan, yuxiangxianggushi (3/3)*. [The narrative development of Chinese children in Taiwan and Mainland China: scripts, personal and fantasy stories]. NSC96-2413-H-003-001
- Cheng, G. P., & Li, D. (1994). maikaxi ertong zhineng liangbiao de xiuding. [The revision of the Chinese norm of McCarthy Scale of Children's Abilities]. *Journal of Chinese Clinical Psychology*, 2 (3), 135–143.
- Cheung, H. (2003). Memory capacity in school-age Mandarin-speaking children with specific language impairment. *Taiwan Journal of Linguistics*, 1 (1), 111–120.
- Copmann, K. S. P., & Griffith, P. L. (1994). Event and story structure recall by children with specific learning disabilities, language impairments, and normally achieving children. *Journal of Psycholinguistic Research*, 23, 231–248.
- Craig, H. K. (1991). Pragmatic characteristics of the child with specific language impairment: An interactionist perspective. In T. M. Gallagher (Ed.), *Pragmatics of language: Clinical practice issues* (pp. 163–198). San Diego, CA: Singular publishing Group.
- Dodwell, K., & Bavin, E. L. (2008). Children with specific language impairment: An investigation of their narratives and memory. *International Journal of Language and Communication Disorders*, 43(2), 201–218.
- Dunn, M., Flax, J., Slivinski, M., & Aram, D. (1996). The use of spontaneous language measures as criteria for identifying children with specific language impairment: An attempt to reconcile clinical and research incongruence. *Journal of Speech and Hearing Research*, 39, 643–654.
- Fivush, R., Haden, C., & Adam, S. (1995). Structure and coherence of preschoolers' personal narratives over time: Implications for childhood amnesia. *Journal of Experimental Child Psychology*, 60, 32–56.
- Fletcher, P., & Garman, M. (1988). Normal language development and language impairment: Syntax and beyond. *Clinical Linguistics and Phonetics*, 2, 97–113.
- Fletcher, P., & Peters, J. (1984). Characterizing language impairment in children: An exploratory study. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 44). Cambridge, MA: The MIT Press.
- Fletcher, P., Stokes, S., & Wong, Anita M. Y. (2006). Specific language impairment in Chinese. In P. Li (Ed.), *The handbook of East Asian psycholinguistics* (pp. 296–307). Cambridge, UK: Cambridge University Press.
- Graybeal, C. M. (1981). Memory for stories in language-impaired children. *Applied Psycholinguistics*, 2, 269–283.
- Griffin, T. M., Hemphill, L., Camp, L., & Wolf, D. P. (2004). Oral discourse in the preschool years and later literacy skills. *First Language*, 24(2), 123–147.

- Hoff-Ginsberg, E. (1992). Methodological and social concerns in the study of children's language-learning environments: a reply to Pine. *First Language*, 12, 251–254.
- Hsu, Y. C. (2000). *taibeishi wusui ertong tedingxing yuyan zhangai zhi diaocha yanjiu*. [A Survey on prevalence of specific language impairment in 5-year-old preschool children]. Unpublished master's thesis. National Taiwan Normal University, Taipei, Taiwan.
- Hudson, J. A., & Shapiro, L. R. (1991). From knowing to telling: The development of children's scripts, stories, and personal Narratives. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 89–136). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Johnston, J., & Kamhi, A. (1984). Syntactic and semantic aspects of the utterances of language-impaired children: The same can be less. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 54). Cambridge, MA: The MIT Press.
- Kaderavek, J. N., & Sulzby, E. (2000). Narrative production by children with and without specific language impairment: Oral narratives and emergent readings. *Journal of Speech, Language, and Hearing Research*, 43, 34–49.
- Kemper, S. (1984). The development of narrative skills: Explanations and entertainments. In S. A. Kuczaj (Ed.), *Discourse development: Progress in cognitive development research* (pp. 451–463). Oxford: Clarendon Press.
- Klecan-Aker, J., & Kelty, K. (1990). An investigation of the oral narratives of normal and language-learning disabled children. *Journal of Childhood Communication Disorders*, 13, 207–216.
- Klee, T., Strokes, S. F., Wong, A., Fletcher, P., & Gavin, W. (2004). Utterance length and lexical diversity in Cantonese-speaking children with and without specific language impairment. *Journal of Speech, Language, and Hearing Research*, 47, 1396–1410.
- Labov, W. (1972). *Language in the inner city: Studies in the black English vernacular*. Philadelphia, PA: University of Pennsylvania Press.
- Lee, W. C. (2003). *yuyan xuexi zhangai ertong kouyu shushuo nengli: gushi jiegou fenxi*. [The narrative skill of children with language-related learning disabilities: story grammar analysis] (Unpublished master's thesis). Taipei Municipal Teachers College, Taipei, Taiwan.
- Leonard, L. B. (1986). Conversational replies of children with specific language impairment. *Journal of Speech and Hearing Research*, 29, 114–119.
- Leonard, L.B. (1998). *Children with specific language impairment*. Cambridge, MA: The MIT Press.
- Liles, B. Z. (1985a). Cohesion in the narratives of normal and language disordered children. *Journal of Speech and Hearing Research*, 28, 123–133.
- Liles, B. Z. (1985b). The production and comprehension of narrative discourse in normal and language disordered children. *Journal of Communication Disorders*, 18, 409–427.
- Liles, B. Z., Duffy, R. J., Merritt, D. D., & Purcell, S.L. (1995). Measurement of narrative discourse ability in children with language disorders. *Journal of Speech and Hearing Research*, 38, 415–425.
- Lin, B. G., & Lin, M. X. (1994). *xueqian ertong yuyan zhangai liangbiao* [The scale of preschool children with language impairment]. National Taiwan Normal University Special Education Center, Taipei, Taiwan.
- Lu, L., & Liu, H. (1998). *xiuding Bibaode tuhua chuei ceyan*. [Peabody Picture Vocabulary Test-revisited]. Taipei: Psychology Press.
- MacWhinney, B. (2000). *The CHILDES project: Tools for analyzing talk*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Manhardt, J., & Rescorla, L. (2002). Oral narrative skills of late talkers at ages 8 and 9. *Applied Psycholinguistics*, 23, 1–21.

- McCabe, A., & Bliss, S. L. (2003) *Patterns of narrative discourse: A multicultural, life span approach*. Boston, MA: Pearson Allyn & Bacon.
- McCabe, A., & Rollins, P. R. (1994). Assessment of preschool narrative skills. *American Journal of Speech-Language Pathology*, 3, 45–56.
- Merritt, D. D., & Liles, B. Z. (1987). Story grammar ability in children with and without language disorder: Story generation, story retelling, and story comprehension. *Journal of Speech and Hearing Research*, 30, 539–552.
- Miller, P. J., & Sperry, L. L. (1988). Early talk about the past: The origins of conversational stories of personal experience. *Journal of Child Language*, 15, 293–315.
- Minami, M. (1996). Japanese preschool children's narrative development. *First Language*, 16, 339–363.
- Miranda, A. E., McCabe, A., & Bliss, Lynn S. (1998). Jumping around and leaving things out: A profile of the narrative abilities of children with specific language impairment. *Applied Psycholinguistics*, 19, 647–667.
- Montgomery, J. W. (2000a). Relation of working memory to off-line and real-time sentence processing in children with specific language impairment. *Applied Psycholinguistics*, 21, 117–148.
- Montgomery, J. W. (2000b). Verbal working memory and sentence comprehension in children with specific language impairment. *Journal of Speech Language and Hearing Research*, 43, 293–308.
- Montgomery, J. W. (2003). Working memory and comprehension in children with specific language impairment: What we know so far. *Journal of Language & Communication Disorders*, 36, 221–231.
- Morley, C., & Miller, G (1955). Delayed speech and developmental aphasia. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 43). Cambridge, MA: The MIT Press.
- Owens, R. R. (1995). *Language disorders: A functional approach to assessment and intervention*. Boston, MA: Allyn & Bacon.
- Paul, R., & Smith, R. L. (1993). Narrative skills in 4-year-olds with normal, impaired, and late-developing language. *Journal of Speech Hearing Research*, 36, 592–598.
- Paul, R., Hernandez, R., Taylor, L., & Johnson, K. (1996). Narrative development in late talkers: Early school age. *Journal of Speech Hearing Research*, 39, 1295–1303.
- Pearce, W., James, D., & McCormack, P. (2010). A comparison of oral narratives in children with specific language and non-specific language impairment. *Clinical Linguistics & Phonetics*, 24(8), 622–645.
- Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative*. New York, NY: Plenum Press.
- Peterson, C., & McCabe, A. (1991). Children's connective use and narrative macrostructure. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 29–53). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Roberts, J., Rescorla, L., & Boeneman, A. (1994). Morphosyntactic characteristics of early language errors: An examination of specific expressive language delay. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 51). Cambridge MA: The MIT Press.
- Roth, F. P., & Spekman, N. J. (1986). Narrative discourse: spontaneously generated stories of learning-disabled and normally achieving student. *Journal of Speech and Hearing Disorders*, 51, 8–23.

- Sah, W. H. (2006). *ertong xushu zhong pingjia yuyan fazhan* [The study on the evaluative language development in children's narratives]. Unpublished Doctoral thesis. National Taiwan Normal University, Taipei, Taiwan.
- Scott, C. M., & Windsor, J. (2000). General language performance measures in spoken and written narrative and expository discourse of school-age children with language learning disabilities. *Journal of Speech, Language, and Hearing Research*, 43, 324–339.
- Sleight, C., & Prinz, P. M. (1985). Use of abstracts, orientations, and codas in narration by language-disordered and non-disordered children. *Journal of Speech and Hearing Disorders*, 50, 361–371.
- Snow, C., Porsche, M., Tabors, P., & Harris, S. (2007). *Is literacy enough? Pathways to academic success for adolescents*. Baltimore, MD: Paul H. Brookes.
- Snow, C. E., Tabors, P., Nicholson, P., & Kurland, B. (1995). SHELL: Oral language and early literacy skills in kindergarten and first-grade children. *Journal of Research in Childhood Education*, 10, 37–48.
- Stark, R. E., & Tallal, P. (1981). Selection of children with specific language deficits. *Journal of Speech and Hearing Disorders*, 46, 114–122.
- Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing* (pp. 53–120). Norwood, NJ: Ablex.
- Strong, C. J., & Shaver, J. P. (1991). Stability of cohesion in the spoken narratives of language-impaired and normally developing school-aged children. *Journal of Speech and Hearing Research*, 34, 95–111.
- Sulzby, E., & Zecker, L. B. (1991). The oral monologue as a form of emergent reading. In A. McCabe & C. Peterson (Eds.), *Developing narrative structure* (pp. 175–213). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Tabors, P. O., Snow, C. E., & Dickinson, D. K. (2001). Homes and schools together: Supporting language and literacy development. In D. K. Dickinson & P. O. Tabors (Eds.), *Beginning literacy with language* (pp. 313–334). Baltimore, MD: Paul H. Brookes.
- Trauner, D., Wulfeck, B., Tallal, P., & Hesselink, J. (1995). Neurologic and MRI profiles of language impaired children. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 43). Cambridge, MA: The MIT Press.
- Tsai, W.Y. (2006). *yuyan zhangai ertong xushi nengli zhi yanjiu* [A study on the narrative competence of children with language impairment]. Unpublished master's thesis. Taipei Municipal Teachers College, Taipei, Taiwan.
- Wang, X. P. (1998). A developmental study of acquisition of narrative skills by children in Taiwan. Unpublished master's thesis. Fu-Jen Catholic University, Taipei, Taiwan.
- Watkins, R. (1994). Specific language impairments in children: An introduction. In A. R. Watkins & M. L. Rice (Eds.), *Specific language impairments in children* (pp. 1–15). Baltimore, MD: Paul H. Brookes.
- Watkins, R., Rice, M., & Molz, C. (1993). Verb use by language-impaired and normally developing children. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 43). Cambridge, MA: The MIT Press.
- Weeks, T. (1974). The slow speech development of a bright child. In L. B. Leonard (Ed.), *Children with specific language impairment*. (p. 43). Cambridge, MA: The MIT Press.
- Werner, L. (1945). Treatment of a child with delayed speech. In L. B. Leonard (Ed.), *Children with specific language impairment* (p. 43). Cambridge, MA: The MIT Press.

- Willett, J. B. (1994). Measuring change more effectively by modeling individual growth over time. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education* (pp. 1–9). Oxford: Pergamon Press.
- Xu, Y. (2007). *Tedingxing yuyan zhagai ertong xushixing yuyan de dongci shiyong yanjiu*. [The Verb-usage in the Narratives of Children with Specific Language Impairment]. Unpublished master's thesis. East China Normal University, Shanghai, China.
- Yeh, L. L. (2004). *3,7 zhi 4,1 sui tedingxing yuyan zhagai Haitong zhi muzi hudong de yuyong xingtai chutan*. [The pragmatic characteristics of the 3;7 to 4;1 years old children with specific language impairment in mother-child dyads: A preliminary study]. Unpublished master's thesis. Taipei Nursing College, Taipei, Taiwan.
- Zhang, L. (2010). *sansui tedingxing yuyan zhagai ertong shici gaimao de gean yanjiu*. [A Case Study on the Lexical Abilities of Three-year-old Children with Specific Language Impairment]. Unpublished master's thesis. East China Normal University, Shanghai, China.

Narratives of Mandarin-speaking patients with schizophrenia

Ning Hsu^a, Hintat Cheung^b, En-Nan Wang^c and Tai-Li Chou^d

^aUniversity of Illinois at Urbana-Champaign, ^bHong Kong Institute of Education, ^cShin Kong Wu Ho-Su Memorial Hospital and ^dNational Taiwan University

Schizophrenia is characterized by abnormalities in perception and expression. The traditional view of their disordered speech as a reflection of their disorganized thinking (Bleuler, 1950; Kraepelin, 1919/1992) has been questioned for the reason that language and thought are not in total isomorphic relationship. The disordered speech observed in individuals with schizophrenia could be more than a mere thought disorder or a mere language disorder (Harvey & Neale, 1983; McKenna & Oh, 2005). The present study investigated the narrative ability of Mandarin-speaking patients with schizophrenia. A group of 22 patients with schizophrenia as well as 20 normal controls participated in a story-telling task. Participants were asked to narrate three picture-books and their performance was evaluated by a Mandarin version of Narrative Assessment Profile (Tsou, Chang, & Cheung, 2009), which examines eight dimensions of a narrative: topic maintenance, event sequencing, reasonableness, referential skill, background information, evaluation, conjunctive cohesion, and the overall narrative pattern. Lexical choices of connectives (causal connectives and contrastive connectives) as well as verbal predicates (perceptual verbs, psychological verbs, and mental verbs) were also analyzed. Results showed that participants in the schizophrenic group preserved an intact ability to produce basic elements in narratives, performing comparatively well in dimensions of event sequencing and referential skill. However, their performance in the other six dimensions was significantly weaker than the controls. It is proposed that individuals with schizophrenia display an overall lack of structure in narratives, as reported in previous literature (Chaika & Alexander, 1986; Lysaker et al., 2005). They seemed to have difficulties in coping with the communication needs of their listeners, as revealed by lower scores in reasonableness, background information, and evaluation. Further evidence came from lexical analyses which also showed that the group with schizophrenia used fewer contrastive connectives and

mental verbs when telling their stories. Discussions of the implications of these findings are considered.

Keywords: narrative, Chinese, schizophrenia, narrative assessment, connectives, verbs

Introduction

Background

Schizophrenia is a mental disease characterized by abnormalities in perception and expression. It involves multiple abnormalities in thought, language and communication. Major symptoms of schizophrenia include auditory hallucinations, delusions, unusual or disorganized speech, and significant social dysfunctions (van Os & Kapur, 2009). The onset of schizophrenia usually occurs in late adolescence, and the communication capacity of patients with this disorder can degrade from a fully-developed state to incomprehensible, disorganized speech. These disorganized speech patterns are also known as “thought-disordered symptoms”, a term that reflects the original perspective of early psychopathologists who had treated the disorganized language output as simply a result of disorganized thought. Though not all patients diagnosed with schizophrenia display language abnormalities, thought-disordered symptoms are among the representative characteristics of schizophrenia (Chaika, 1974; Covington et al., 2005; Goldberg & Weinberger, 2000; Kuperberg, 2010; Rochester, Martin, & Thurston, 1977). In addition, these symptoms are not confined to those with psychosis. When tired or stressed, individuals with typical functioning may show thought-disordered symptoms, failing to speak coherently or producing irrelevant, incomprehensible speech (McKenna & Oh, 2005). Therefore, the investigation of thought-disordered symptoms, or schizophrenic language disturbances, allows us to understand human language processing from a new perspective.

In contrast to psychopathological assumptions that attributed schizophrenic language disturbances solely to disorganized thought patterns, Chaika (1974) advocated the importance of separating language and thought when investigating schizophrenic speech. Since individuals with schizophrenia are believed also to display abnormalities in perception and expression, researchers should first conduct a linguistic analysis by considering all possible interpretations of the patient’s speech. Otherwise, it can never be determined whether the disorganized speech pattern is a result of an hallucinatory experience or a diminished competence in language production. In other words, it is necessary to separate the content and

the form of speech, and only by having an accurate description of the linguistic ability of individuals with schizophrenia can researchers be in a position to discuss the interface between language and thought (Chaika 1982a; Chaika & Lambe, 1985). Due to this concern, in the present study thought-disordered symptoms simply refer to impairments in verbal communication that can be identified in speech data (Kuperberg, 2010). We made no further assumption that individuals with schizophrenia suffered from a mere thought disorder, or from a language disorder.

Characteristics of schizophrenic speech

Schizophrenic language disturbances involve dysfunctions in almost all levels of language use, among which discourse level abnormalities are the most noticeable (Chaika & Alexander, 1986; McGrath, 1991). Derailment and tangentiality are two traits of schizophrenic language (Andreasen, 1979a; Ditman & Kuperberg, 2010; Kuperberg, 2010). Derailment refers to spontaneous speech that tends to slip off the track of a main idea while tangentiality is most observable in question-answering situations in which patients tend to reply in an oblique or irrelevant manner. The two phenomena are considered to be results of association problems. Patients operate with ideas or concepts that have few connections with the main idea, and hence lose sight of the normal goal-directed functions of language (see Andreasen 1986, p.476 for further illustrations).

Previous studies have demonstrated that patients with schizophrenia exhibit an overall weakness in narrative structure (Chaika & Alexander, 1986; Lysaker et al., 2005). Yu (1999) examined the pause patterns of Mandarin-speaking patients with schizophrenia and remarked that discourse abnormalities such as abrupt topic shifting and irrelevant answers to questions were found. Leroy, Pezard, Nandrino, and Beaune (2005), using a story recall task, found that schizophrenic patients revealed a deficit in maintaining a proper discourse plan and some atypical use of cohesive devices such as references and conjunctions (Chaika & Alexander, 1986; Rochester, Martin, & Thurston, 1977). Furthermore, patients with schizophrenia seemed to be less attentive to communication needs, providing fewer details and context-related information (Chaika & Alexander, 1986; Gruber & Kring, 2008; Lysaker & Lysaker, 2004; Tavano et al., 2008). Their ability to predict upcoming words in discourse was significantly poorer than controls with typical functioning (de Silva & Hemsley, 1977). Some individuals with schizophrenia had difficulties interpreting sentences that violated Grice's maxims but were comprehensible using pragmatic knowledge (Tenyi, Herold, Szili, & Trixler, 2002). Event related potential studies also found that patients, unlike healthy controls, failed to show the robust brain activities responding to the detection of words that violated

or were unrelated to the context (Ditman & Kuperberg, 2007). These problems point towards a deficit in processing language exchanges within a normal discourse framework.

Some patients with schizophrenia also developed abnormalities at the lexical level, such as neologisms and word approximations, though such were not as common as discourse-level abnormalities (Andreasen, 1979a; Kuperberg, 2010). In their narratives, patients with schizophrenia also sometimes made unusual word choices (Chaika & Alexander, 1986). Patients were reported to use completely new words that no one understood, or to use words in an idiosyncratic or bizarre manner, such as “handshoes” for gloves and “paperskate” for a ballpoint pen (Andreasen, 1986). In severe cases, patients produced word strings that made no discernable sense at all (Chaika, 1982b; McKenna & Oh, 2005). Studies of semantic knowledge revealed that individuals with schizophrenia tended to activate different semantic networks or to use different lexical retrieval strategies. In verbal fluency tasks, patients with schizophrenia produced fewer words and made more mistakes (Elvevag, Fisher, Guad, & Goldberg, 2002). Studies adopting semantic priming paradigms also reported a different pattern of semantic priming. Though evidence was not entirely consistent, individuals with schizophrenia tended to show similar priming effects in processing tasks compared to controls (Manschreck et al., 1988; Moritz et al., 2001) but a reduced priming effect when asked to execute controlled strategies such as prediction and selection (Barch et al., 1996). They also showed difficulties in pragmatic speech comprehension as well as in using proverbs, ironies, and metaphors (Brüne & Bodenstein, 2005; Harrington, Siegert, & McClure, 2005; Langdon, Coltheart, Ward, & Catts, 2002; Tavano et al., 2008). Kuperberg (2010) further concluded that individuals with schizophrenia display an inefficiency in controlling lexico-semantic retrieval and selection.

An abundant body of evidence has demonstrated that patients with schizophrenia performed poorly in communication tasks that require Theory of Mind (ToM) ability (Harrington et al., 2005; Mazza, de Risió, Surian, Roncone, & Casacchi, 2001; Pickup & Frith, 2001; Randall, Corcoran, Day, & Bentall, 2003; Sarfati & Hardy-Baylé, 2005), the ability to conceive mental states of oneself or others in order to make sense of or predict behaviors (Premack & Woodruff, 1978). The diminishment of ToM is considered an influential factor contributing to language disturbances in schizophrenia. Patients were reported as speaking less of the internal states or interpersonal cues when asked to comment on photographs of facial expressions or videotapes of social situations (Cutting, 1981; Pilowsky & Bassett, 1980).

From the above literature review, it is very clear that language disorder is a significant problem in individuals with schizophrenia, regardless of whether it is independent of thought disorders. In our review, very little has been done to date

to understand the language use of Mandarin-speaking individuals with schizophrenia, despite the fact that Mandarin has the largest group of native speakers in the world. In addition to demographic concerns, the study of language use in Mandarin-speaking individuals with schizophrenia can also be revealing in that Mandarin, as one member of the Chinese language family, is widely recognized as a language with extensive pragmatic rules for its frequent ellipsis of nouns and the variations in word order without case markers. These two characteristics require a heavy reliance upon the use of contextual and pragmatic knowledge in producing language, even for conducting everyday conversations. With such language specific properties, it is interesting to see whether the speech produced by individuals with schizophrenia can be considered less incomprehensible by Mandarin listeners than their western counterparts since Mandarin listeners have been accustomed to fill in gaps in everyday conversations. Alternatively, the Chinese reliance on contextual and pragmatic knowledge may impose a higher threshold for producing well-selected and well-formed speech and thus narratives of Mandarin-speaking schizophrenic patients could be more difficult to comprehend.

For ease of comparison, this study employs a story-telling task so that our analysis can focus on the narrative structure exclusive of possible interactions from story content. The Mandarin-version of Narrative Assessment Profile (M-NAP) (Tsou, Chang, & Cheung, 2009), which was adapted from Bliss, McCabe, and Miranda (1998), was used as the major means of characterizing the overall structure of narratives produced by individuals with schizophrenia in Mandarin. Lexical analysis was also conducted to examine differences in lexical choices between the individuals with schizophrenia and individuals with typical functioning. As a preliminary study, we did not explore clinical aspects of narrative analysis in schizophrenia nor did we address etiology of the disorder.

Method

Participants

The group with schizophrenia consists of 22 individuals (13 females, 9 males) between the age of 19 and 49. They were recruited from the SOPAS Project (A Study on Pathogenesis of Schizophrenia: Genetic, Neurobiological and Cognitive Science Approaches) conducted by National Taiwan University (Liang, Hwu, & Fu, 2011). All patients were outpatients, under medication, and they met criteria for schizophrenia listed in the Diagnostic and Statistical Manual of Mental Disorders (fourth edition [DSM-IV]; American Psychiatric Association, 1994). Patients with a history of severe head trauma, stroke, neurological disease, current mood

disorder, or substance abuse were not included. The control group consists of 20 undergraduates from National Taiwan University (11 females, 9 males). The students were between the age of 19 and 23, and none of them had any history of brain injury or speech therapy.

Elicitation task

Materials. Three picture-stories were used in the narrative elicitation task: (1) the Couple Story (Nicholas & Brookshire, 1993), (2) the Old Man and the Dog Story (Huber & Gleber, 1982), and (3) a modified version of the popular Frog Story (Mayer, 1969). The Couple Story is about a quarrel between a man and a woman. The woman left the room after the quarrel but then came back. The story ended in the couple's embrace, with a car crashed onto a tree outside the room. The Old Man and the Dog Story started with a man and a dog walking along the street. During the walk, a vase falling from the nearby building hit the old man. The old man was angry. He then tried to find the person who was responsible for the event. The story eventually ended in reconciliation. Both the Couple Story and the Old Man and the Dog Story consist of six pictures. The Frog Story is an adaptation of *Frog, Where are you?* (Mayer, 1969). The original 24-paged storybook was shortened to a 12-page version to lower the task demands of memory. The modified version has retained the major plotline, depicting the adventure of a boy and his dog while they were searching for a lost frog.

Elicitation procedure. Subjects were asked to generate narratives of the three wordless picture-books. The sequence of the three stories was counter-balanced. Subjects were asked to preview one of the stories first. They were then asked to narrate the story twice. In the first round, subjects told the story with the presence of pictures, while in the second round they re-told the story without pictures so that pointing to the picture as a strategy of referencing was avoided. The examiner offered neutral prompts such as "uh-huh" or "and then" when subjects paused during the task.

Narrative coding and scoring

Transcription. Each narrative was transcribed in verbatim in Chinese characters using ELAN (EUDICO Linguistic Annotator) (Hellwig, van Uytvanck, & Hulsbosch, 2007). We followed the guidelines of Codes for the Human Analysis of Transcripts (CHAT) of the Child Language Data Exchange System (CHILDES) (MacWhinney, 2006) for text format.

The basic unit in this study is utterance. Utterances were separated based on prosodic markers such as a falling intonation or pauses. As for word segmentation

and tagging, we adopted the segmentation and tagging standard of the Taiwan Corpus of Child Mandarin. (Cheung, Chang, Ko, & Tsay, 2011), which is a modification of the standard developed by the CKIP group (Chinese Knowledge and Information Processing) of Academia Sinica¹.

Narrative Assessment Profile (NAP). The present study adopted the Mandarin version of NAP constructed by Tsou et al. (2009), examining eight dimensions of narrative performance. They are topic maintenance, event sequencing, reasonableness, background information, evaluation, referential skill, conjunctive cohesion, and the overall narrative pattern. To standardize the rating procedure and to control the rating reliability, a rating protocol was first developed. Twelve randomly-selected transcripts were used for developing the protocol, with four trained raters participating in the validation process. Criteria for scoring were listed and cross-checked by the four raters. Each of the eight dimensions was scored on a scale from 0 to 4 and the total points of all eight measures was 32. The scoring criteria of the eight dimensions will be explained in the following section.

(1) *Topic maintenance*

This dimension examines whether a narrative has a central theme to which all utterances in the narrative are related. Two critical events were identified from each of the picture-books, and they formed the locus of plotline advancement. Narratives that appropriately arrange theme-related utterances get higher scores in this dimension, while those that lack critical events or include loosely-associated utterances get lower scores.

(2) *Event sequencing*

This dimension examines whether events within narratives are ordered either chronologically or logically. Violation of temporal relation without notification tends to result in confusion. This dimension is rated by counting how events are sequenced.

(3) *Reasonableness*

This dimension is related to the sense-making process of a discourse. Sufficient information should be provided for listeners to make sense of actions and responses associated with story characters, as well as the causal relations between events. Omitting linking words on causality or crucial details poses difficulties in understanding. Narratives that arrange adequate information and details in an efficient way get higher scores, while narratives that include too much or too little information end in lower scores.

1. For further information: < <http://ckipsvr.iis.sinica.edu.tw/>>

(4) *Background information*

This dimension involves the scene-setting process. To set up the “stage” for narratives, narrators have to speak about the place and time of the story, as well as the relationship between characters. In addition, illustrations of possible events (which did not really happen in the story) or hypothetical situations are also counted as background information. Though background information does not help to push forward the major plotline, it serves as the anchor for listeners to quickly get the setting of the story.

(5) *Evaluation*

This dimension examines whether the narrators express their opinions about the narrative. The narrators’ feelings about the story are often presented in their expressions of the internal states of the story characters. Linguistic devices such as adjectives, hedges, mental state verbs, and other sound-related devices (e.g. onomatopoeia or repetition) that are not captured by the pictures shown in the task are included in rating evaluation.

(6) *Referential skill*

This dimension considers narrators’ ability to adequately identify individuals, locations, and events. A good narrator is capable of interchanging between nouns and pronouns following the conventions of the target language. Improper referencing includes inappropriate omissions of the reference, ambiguous referencing, erroneous uses of pronouns (e.g. a singular pronoun for a plural nominal reference) or the absence of proper antecedents. Repeating nouns when pronouns are expected also dampens the score of referential skill.

(7) *Conjunctive cohesion*

Connectives are used to tie utterances together, serving the role of linking concepts or discourse functions. They help to express coordination (e.g. *er2qie3* ‘and’), temporal relations (e.g. *ran2hou4* ‘and then’), causal relations (e.g. *yin1wei4* ‘because of’, and *jie2guo3* ‘as a result of’), contrastive ideas (e.g. *ke3shi4* ‘but’), and hypothetical statements (e.g. *ru2guo3* ‘if’). We rate conjunctive cohesion by examining the number of types and meanings of connectives, as well as whether they are used appropriately.

(8) *Overall narrative pattern*

Evaluation of this dimension considers the integration between different elements of narratives, such as chronological descriptions of events, high-point action descriptions, responses of protagonists’ to story conditions, as well as their goal-oriented activities and outcomes (Peterson, 1994; Tsai, 2006; Tsou et al., 2009).

A rating protocol was prepared for researchers who intend to use the Mandarin version of NAP. According to this protocol, two raters who were blind to the group assignments rated all narrative samples independently. When inter-rater discrepancy was bigger than one point, the sample was re-checked and resolved by discussion. For samples that had one point difference, the average of the two was considered the final score. Total re-checked items were 49 out of 1008², arriving at an acceptable inter-rater agreement estimated to be higher than 95 percent.

Lexical analysis. Lexical analysis here helped complement NAP results by providing data from a different dimension of language. Two categories of connectives and three categories of verbal predicates were coded. Uses of connectives were converted into the ratio of total number of tokens to total number of utterances, while uses of specific verbal predicates were converted into total number of certain verbal predicates to total number of all verbal predicates.

Types of connectives examined

1. Causal connectives: conjunctions or adverbs that link causal or mutually influential events, such as *yin1wei4* 'because', *suo3yi3* 'so', *jie2guo3* 'as a result', etc.
2. Contrastive connectives: conjunctions or adverbs that indicate unexpected or undesired events, such as *bu2guo4* 'however', *dan4shi4* 'but', *ke3shi4* 'but', etc.

Types of verbal predicates examined

1. Perceptual verbs: predicates that indicate story characters' perception of the outside world during the narrative, such as *kan4dao4* 'to see', *ting1dao4* 'to hear', *wen2dao4* 'to smell', etc.
2. Psychological verbs: predicates that indicate the story characters' emotional states during the narrative, such as *kuai4le4* 'happy', *nan2guo4* 'sad', *fen4nu4* 'angry', etc.
3. Mental verbs: predicates that indicate the story characters' mental cognitive processing, such as *xiang3* 'to think', *zhi1dao4* 'to know', *ren4wei2* 'to consider', etc.

The analysis of the three specific types of verbal predicates further sheds light on how narrators portray the mental state of story characters. We adapted the three-level actor-agent-person character representation by Nicolopoulou and Richner (2007). "Actor" characterization involves the pairing of a subject noun and an action-denoting verb. It simply answers the question of who, without further elaboration of the figure. Perceptual verbs such as 'hear' and 'see' and psychological verbs such as 'happy' as well as 'angry' and were considered characterizations of "agent" since sensory

2. We had 42 subjects (20 typical controls and 22 individuals with schizophrenia) and each of them told three stories. Each narrative sample received 8 scores in 8 dimensions. Hence, there are 1008 (42x3x8) dimensional scores in total.

level activities of the person who performed the action are depicted. Mental verbs such as ‘think’ and ‘consider’ were considered to be “person” characterization since the uses of these words are clear indications of the narrator’s intention to encode the story characters as having beliefs, desires, or intentions that govern their behaviors.

Results

Overall performance

Narratives of the group with schizophrenia contained fewer utterances and were significantly shorter than those of the control group (see Table 1) (control group (hereafter TC) = 41.07; schizophrenia group (hereafter SZH) = 27.18) [$t(40) = 2.64, p < .05$]. The mean length of utterance (MLU) of the group with schizophrenia was also significantly shorter than that of the control group (TC = 5.90; SZH = 4.93) [$t(40) = 3.03, p < .05$]. There were no group differences in the two lexical measurements: type-token ratio and noun-verb ratio. That is, schizophrenic patients provided less information but had a comparable lexical ability when compared to controls with typical functioning.

Narrative assessment profile (NAP)

Results of the M-NAP showed that the group with schizophrenia performed significantly weaker than the control group on six dimensions: topic maintenance, reasonableness, background information, evaluation, conjunctive cohesion, and overall narrative pattern. Their total score in NAP was also lower than that of their peers with typical functioning (TC = 28.25; SZH = 23.29) [$t(40) = 4.11, p < .001$]. They not only displayed a generally weaker narrative ability but also showed bigger variations in each dimension, suggesting a diversified narrative profile of this group. Even though most subjects with schizophrenia in this study had a weaker narrative performance, some of them were spared from this impairment. Four narrators with

Table 1. The mean scores and standard deviations (numbers in the parentheses) of basic measures of narrative samples of typical controls (TC) and patients with schizophrenia (SZH)

	TC (N = 20)	SZH (N = 22)	<i>t</i> value	<i>P</i>
Mean length of Utterances (MLU)	5.90 (1.27)	4.93 (0.76)	3.03	< .05*
Total No. of Utterances	41.07 (21.83)	27.18 (11.12)	2.64	< .05*
Type-token ratio	0.50 (0.04)	0.52 (0.08)	-1.24	.222
Noun-verb ratio	1.11 (0.12)	1.20 (0.19)	-1.66	.104

* $p < .05$

schizophrenia had a total narrative score that reached the average score of the control group, which is 28.25. Table 2 reports the mean scores and score ranges of the eight dimensions examined.

Three narratives from the two groups were selected and presented here for an illustration of M-NAP and also for comparing the strengths and weaknesses of individual subjects' performance. Examples (1) and (2) were produced by narrators with schizophrenia, whereas example (3) was produced by an individual with typical development. They were elicited by the Couple Story. M-NAP scores of the three examples are provided in Table 3 and discussions of each of the eight dimensions will follow.

Table 2. The mean scores and score ranges of NAP of narrative samples of typical controls (TC) and patients with schizophrenia (SZH)

	TC (N = 20)			SZH (N = 22)			<i>t</i> value	<i>p</i>
	Mean	SD	Range	Mean	SD	Range		
Topic maintenance	3.86	0.18	3–4	3.45	0.66	0–4	2.696	< .05*
Event sequencing	3.78	0.38	1–4	3.45	0.67	0–4	1.924	.061
Reasonableness	3.32	0.56	2–4	2.42	0.74	0.5–4	4.407	< .001**
Background information	3.33	0.56	1.5–4	2.41	0.88	0.5–4	3.991	< .001**
Evaluation	3.22	0.65	1–4	2.17	0.98	0–4	4.022	< .001**
Referential skill	3.33	0.34	1.5–4	3.05	0.56	1–4	1.874	.068
Conjunctive cohesion	3.87	0.26	2.5–4	3.34	0.84	0–4	2.686	< .05*
Narrative pattern	3.48	0.42	2.5–4	2.90	0.59	0–4	3.577	< .001**
Total	28.25	2.50	21.5–32	23.29	4.84	9.5–32	4.112	< .001**

* $p < .05$ ** $p < .001$

Table 3. The NAP profile scores of example (1), example (2) and example (3)

	Example (1) SZH017	Example (2) SZH002	Example (3) TC006
Topic maintenance	4	2	4
Event sequencing	4	4	4
Reasonableness	0.5	1	3.5
Background information	0.5	1.5	4
Evaluation	0.5	2	3
Referential skill	1.5	2.5	3.5
Conjunctive cohesion	1	3.5	4
Narrative pattern	2	2.5	4
Total	14	19	30

Example 1: Narrator with Schizophrenia (SZH017)

- 01 *ta1men0 liang2 ge0 chao3jia4.*
They two had a fight.
- 02 *nu3 de0 pao3 chu1qu4.*
The female went out.
- 03 *nan2 de0 bu4 jiang3hua4.*
The male did not speak.
- 04 *ran2hou4.*
And then.
- 05 *nu3 de0 hui2lai2 le0.*
The female went back.
- 06 *ta1men0 you4 he2hao3 le0.*
They reconciled.
- 07 *nan2 de0 fa1xian4 shi4 zhuang4che1.*
The male discovered that it was a car accident.

Example 2: Narrator with Schizophrenia (SZH002)

- 01 *jiu4shi4 ma0.*
That is.
- 02 *fu1qi1 liang3 ge0 ren2 na0*
The two people that are a couple.
- 03 *yi1 ge0 zuo4 zai4 sha1fa1*
lao3gong1 zuo4 zai4 sha1fa1shang4 kan4 yi3zi0 a1.
The husband was sitting on the sofa watching the chair.
- 04 *yi1 ge0 zuo4 zai4 yi3zi0 shang4 kan4 bao4zhi3 a1.*
One (of them) was sitting on the chair reading the newspaper.
- 05 *a1 nu3 de0 lao3po2 ne1.*
And the female wife.
- 06 *zhi3 zhi3 zhe0 ta1 de0 tou2 a1 na4ge0.*
(The wife) pointed to his head and.
- 07 *zhi3dong1zhi3zi1 hai2 da4sheng1 ma4 ta1 a1.*
(The wife) pointed to everywhere and loudly condemned him.
- 08 *na4 di4er4 ge0 tu2pian4 ne1.*
And the second picture.

- 09 *di4er4...di4er4 ge0 tu2pian4 ta1 jiu4 ji4xu4 lao3gong1 ji4xu4 kan4 ta1 de0 bao4zhi3.*
In the second picture, the husband kept reading his newspaper.
- 10 *a1 nu3 de0 ne1.*
And the female.
- 11 *jiu4 ti2 zhe0 xiang1zi0
zhun3bei4 yao4 chu1 men2 le0.*
(She) carried the suitcase and was ready to go out.
- 12 *ran2hou4 zai4 lai2 jiu4shi4...*
Then it came...
- 13 *ei4 nu3 de0 yi3jing1 chu1men2 le0.*
The female has already gone out.
- 14 *ran2hou4 ne1.*
Then.
- 15 *na4 nan2 de0 jiu4 xx xx shou3 cheng1 zhe0 tou2.*
The male then supported his head with the hand.
- 16 *jing4mo4 bu4 yu3.*
(He) was silent and did not speak.
- 17 *hen2 di1zhe0 tou2 zhe4yang4zi0 jing4jing4 de0.*
(He) lowered his head and was silent.
- 18 *ran2hou4zai4lai2 jiu4shi4 ...*
Then furthermore...
- 19 *ei4.*
“...”
- 20 *na4 nu3 de0 ne1.*
And the female.
- 21 *ti2 zhe0 xing2li3 ne1.*
(She) carried the suitcase.
- 22 *jin4 kai1men2.*
(She) opened the door.
- 23 *nu3 de0 kai1men2 ti2 zhe0 xing2li3 a1.*
The female opened the door while carrying the suitcase.
- 24 *a1nan2 de0 jiu4 hui2 guo4 tou2 kan4 ta1.*
Then the male turned back and looked at her.
- 25 *ran2hou4 zai4lai2 liang3 ge0 ren2jiu4...*
Then the two people thereby...

- 26 *liang3 ge0 ren2 ne1.*
The two people then.
- 27 *na4ge0 liang3 ge0 ren2 ne1 jiu4 xiang1 yu4 ma0.*
Then the two people met each other.
- 28 *hen3 xi4ju4 xiang1yu4 ma0.*
It was a dramatic meeting.
- 29 *nan2 de0 jiu4 pai1 shou3 peng2zhe0na4 ge0 huan1ying2.*
The male welcomed (the female) with a hand gesture.
- 30 *shi4 zen3mo0 de0.*
What was that.
- 31 *yi1ding4 shi4 wen4 ta1 she1mo0 hui2 shi4.*
(He) must be asking her what happened.
- 32 *liang3 ge0 ren2 jiu4 bao4 zai4 yi1qi3.*
The two people then hugged together.
- 33 *jie2guo3 ne1.*
As a result.
- 34 *yuan2lai2 che1zi0... bu4 zhi1dao4 shi4 zen3mo0 hui2 shi4.*
In fact, something happened to the car (one does not know what).
- 35 *zhuang4shang4 yi1ke1 shu4.*
(The car) bumped into a tree.

Example 3: Control with typical functioning (TC006)

- 01 *en0 you3 yi1 dui4 fu1qi1.*
There was a couple.
- 02 *nan2 de0 jiao4 yue1han4 nu3 de0 jiao4 ma3li4.*
The male was called John and the female was called Mary.
- 03 *you3 yi1tian1 you3 yi1 tian1*
ta1men0 chao3jia4 le0.
One day they had a fight.
- 04 *ta1men0 chao3 de0 fei1chang2 de0 xiong1.*
They fought very furiously.
- 05 *ma3li4 xiang3 le0 hen3 ma3li4 xiang3 le0 yi1xia4.*
Mary thought for a while.
- 06 *jue2ding4 li2kai1li2jia1 chu1zou3.*
(She) decided to leave the house and go away.

- 07 *yi1 kai1shi3.*
At the beginning.
- 08 *yue1han4 jue2de0 mei2 she1mo0.*
John did not feel any difference (John considered it unimportant).
- 09 *dan4shi4 guo4 le0 yi1xia4zi0*
ta1 jiu4 gan3dao4 fei1chang2 de0 ao4hui3.
But after a while he then felt very regretful.
- 10 *ta1men0 ping2chang2 fei1chang2 de0 hao3.*
They usually got along pretty well.
- 11 *mei2you3 xiang3 mei2you3 xiang3dao4 zai4*
zhe4 ge0 shi2hou4 hui4 fa1sheng1 zhe4 zhong3 shi4qing2.
(He) was not aware that such things could have happened at this time.
- 12 *jiu4 zai4 zhe4 ge0 shi2hou4.*
Right at this time.
- 13 *ma3li4 hui2lai2 le0.*
Mary went back.
- 14 *ma3li4 dai4 zhe0 shang1.*
Mary was hurt.
- 15 *ta1gan3dao4 en0 yue1han4 gan3dao4*
fei1chang2 de0 # nan2guo4.
John felt very sad.
- 16 *yu2shi4 ta1men0 liang3 ge0...*
ta1men0 liang3 ge0 yong3bao4 zai4 yi1qi3.
Hence they hugged together.
- 17 *zhe4 shi2 yue1han4 cong2 wang4ji4 guan1 zhe0*
wang4ji4 guan1 qi3lai2 de0 men2 wang3 wuai4 kan4.
At this time John looked outside from the unclosed door.
- 18 *fa1jue2 yuan2lai2 shi4 ma3li4.*
(He) discovered that it was Mary.
- 19 *ba3 che1 kai1 chu1qu4 de0 shi2hou4.*
When (she) was driving the car out.
- 20 *zai4 lu4 shang4 zhuang4dao4 le0 shu4.*
(She) bumped into a tree on the road.
- 21 *ta1 xin1xiang3 huo4xu3you3 yi1 tian1*
ma3li4 hai2shi4 hui4 li2kai1 ba0.
He thought that maybe Mary will still leave someday.

Topic maintenance. The group with schizophrenia performed significantly less well than the control group in the dimension of topic maintenance (TC = 3.86; SZH = 3.45) [$t(40) = 2.70, p < .05$]. Many patients lost focus on the topic when narrating stories. Some of them failed to utilize critical events as the anchor of the topic. Others successfully identified critical events but failed to form a link with other events to form a plotline. Example (2), which was rated as 2 in topic maintenance, is a typical case of such weakness in topic maintenance. In example (2), although the narrator spoke of the two critical events, i.e., the fight between the couple in utt. 06 and utt. 07 and the final hug in utt. 32, other events in the narrative failed to link up as a whole. Events such as the woman's leaving (utt. 10 and utt. 11), her return (from utt. 20 to utt. 23), and the car crashing (utt. 34 and utt. 35) were not properly attached to the topic. Connections between these events can be inferred but no clear effort was made by the narrator to unite them as a whole, coherent story.

Example (1) and (3) both received 4 points in topic maintenance, but the two narratives are produced by subjects in different groups. Example (1), produced by a patient with schizophrenia, contains only seven utterances, with the two critical events (the fighting between the couple in utt. 01 and the final reconciliation in utt. 06) clearly indicated. All utterances in example (1) are crucial for developing the topic of the Couple Story. In contrast to example (1), Example (3) is a more comprehensive narrative, which also includes the two critical events (the fight between the couple in utt. 03 and utt. 04 and the final hugging in utt. 16). All utterances were appropriately linked to the central idea of the Couple Story, which is the argument between the couple.

Event sequencing. As is shown in Table 2, there was no difference between the groups in the dimension of event sequencing (TC = 3.78; SZH = 3.45) [$t(40) = 1.92, p = .061$], indicating that the patients were able to present a series of logically-ordered events as the individuals with typical functioning did. In the examples above, all individuals scored 4 on this dimension, as is shown in Table 3.

Reasonableness. The schizophrenic group performed significantly less well than the control group in the dimension of reasonableness (TC = 3.32; SZH = 2.42) [$t(40) = 4.41, p < .001$]. Patients did not elaborate on the causal relations, motifs, and logical flow of the plot, with few illustrations of the goal or intention of the story characters. In addition, while individuals with typical functioning tended to link neighboring events with certain relations (generally causal relations), patients with schizophrenia less frequently mentioned relationships between events. For example, in example (3), relations between the events (i.e. the fight in utt. 03 and utt. 04, the woman's leave and her return in utt. 06 and utt. 13, and the final hug in utt. 16) were provided, including the husband's regret (from utt. 08 to utt. 11) and

the inferred reason for the wife's return (from utt. 18 to utt. 20). In addition, the husband's internal state was illustrated, enabling listeners to understand the story character as a person. The story received a score of 3.5 in reasonableness.

On the other hand, one can easily observe the weakness in the dimension of reasonableness in example (1) and (2) when compared with example (3). Example (1) literally contains no other information except a chain of events. The patient spent no effort on illustrating possible relationships between events. Listeners may find utt. 07 in example (1) unreasonable since the patient did not provide any clue to link the previous argument with the later car accident other than implicit chronology. This narrative was rated as 0.5 in reasonableness. Example (2) contains more information, such as the reaction of the husband after his wife's leave (from utt. 15 to utt. 17) and a brief conversation between the couple in the final reconciliation scene (utt. 30 and utt. 31). However, such linkage was still insufficient for listeners to form a whole picture of the story. For example, there was no account of the reason for the wife's return, and the narrator did not attempt to link up the final car crash with the major plotline. Thus, example (2) was rated as 1 in reasonableness.

Background information. The group with schizophrenia performed significantly less well than the control group in the dimension of providing background information (TC = 3.33; SZH = 2.41) [$t(40) = 3.99, p < .001$]. Patients' ability to set the stage for narratives, such as by indicating place and time or the relationship between characters, was not as good as that of the controls. For example, in example (1) and (2), which were produced by patients with schizophrenia, the use of generic terms *nan2de0* 'the male' (example (1), utt. 03; example (2), utt. 15), *nu3de0* 'the female' (example (1), utt. 02; example (2), utt. 10) or *yi1ge0* 'the one' (example (2), utt. 04) suggested that the narrators did not attempt to account for possible relationships of the story characters, and nominal expressions for these characters are merely for referential usage; that is, they merely indicated the gender for the purpose of identifying the character referred to. In contrast, the narrator of example (3) not only gave the two characters names but also stated their relationship as husband and wife in utt. 01, utt. 02, utt. 10, and utt. 11. In addition, time and space are not specified clearly in example (1); for example the mere use of *hui2lai2* 'go back' in utt. 05 without any remark about the goal of the return or the source of the event is a limitation. Locative expressions in example (2) and (3) allow listeners to construct the scene by using phrases such as *zai4sha1fa1shang4* '(sit) on the sofa' (example (2), utt. 03), *chu1men2* 'go out' (example (2), utt. 11), *li2jia1* 'leave the house' (example (3), utt. 06), or *zai4lu4shang4* 'on the road' (example (3), utt. 20). Hence, example (3) was rated as 4 in background information, while examples (1) and (2) were rated as 0.5 and 1.5 respectively.

Evaluation. The group with schizophrenia performed significantly less well than the control group in the dimension of evaluation (TC = 3.22; SZH = 2.17) [$t(40) = 4.02, p < .001$]. Patients often did not speak of the emotions of story characters, nor did they mark high-point actions. While the subjects with typical functioning elaborated final critical events, trying to give more details to help listeners to form a wrap-up of their stories, schizophrenic patients seldom did so. In example (3), the narrator used terms such as *ao4hui3* ‘to be regret’ (utt. 09), or *nan2guo4* ‘to be sad’ (utt. 15) to offer his interpretation of the characters’ emotions, and he also illustrated the uncertainty of the husband in the final reconciliation scene (utt. 21). Example (3) was rated as 3 in the dimension of evaluation. On the contrary, the two schizophrenic samples, example (1) and (2), contain few, if any, evaluative remarks. In example (1), the only word that is related to the emotional statuses of story characters is *he2hao3* ‘to reconcile’ (utt. 06). This narrative was rated as 0.5 in evaluation. As for example (2), although the narrative includes no information about the emotions of story characters, the narrator highlighted the final reconciliation by specifying the content of the conversation between the couple. Therefore, the narrative received a score of 2 in evaluation.

Referential skill. There was no group difference between the group with schizophrenia and the control group in the dimension of referential skill (TC = 3.33; SZH = 3.05) [$t(40) = 1.87, p = .068$]. Patients’ performance was comparable to that of individuals with typical functioning. They were capable of properly using referential strategies, interchanging nouns and pronouns fluently.

Conjunctive cohesion. The group with schizophrenia performed significantly less well than the control group in the dimension of conjunctive cohesion (TC = 3.87; SZH = 3.34) [$t(40) = 2.69, p < .05$]. They used fewer types, as well as fewer tokens, of connectives when compared to the performance of individuals with typical functioning. Conjunctive cohesion is further examined by the analysis of lexical choices.

Overall narrative pattern. The group with schizophrenia performed significantly less well than the control group in the dimension of overall narrative pattern (TC = 3.48; SZH = 2.90) [$t(40) = 3.58, p < .001$]. Patients’ narratives were not as integrative as those of the individuals with typical development. When narrating stories, most control subjects offered well-sequenced events, high-point actions, and other important details together to form a structurally well-patterned narrative. However, only a small fraction of the narrators with schizophrenia did so. Patients failed to produce well-structured narratives for several reasons. They either narrated few sequential events, resulting in short narratives, or had little elaboration of high-point actions as well as other important details.

Lexical analysis

In this section, we report the difference in lexical choices between the control group and the group with schizophrenia. The focus is on the use of two types of connectives and three types of verbal predicates.

Connectives. The frequencies of two types of connectives were counted: causal connectives and contrastive connectives. Token frequencies of these connectives were converted into ratios with total number of utterances as the denominator. Table 4 shows that the two groups did not differ in the usage of causal connectives (TC = 0.05; SZH = 0.03) [$t(40) = 1.40, p = .169$] while the patient group used significantly fewer contrastive connectives than did the control group (TC = 0.06; SZH = 0.02) [$t(40) = 2.79, p < .05$].

Verbal predicates. The frequencies of three character-related verbal predicates were counted: perceptual verbs, psychological verbs, and mental verbs. Token frequencies of these three types of predicates were converted into ratios with tokens of total verb predicates as the denominator. Table 5 shows that the group with schizophrenia used as many psychological verbs in character representation as did the control group (TC = 0.06; SZH = 0.05) [$t(40) = 0.91, p = .370$]; yet these patients used fewer mental verbs when portraying story characters (TC = 0.09; SZH = 0.04) [$t(40) = 4.79, p = .000$]. Also, the group with schizophrenia used slightly more perceptual verbs in character representation (TC = 0.04; SZH = 0.06) [$t(40) = -2.10, p < .05$]. The group with schizophrenia, in contrast to previous research, did not make unusual lexical choices when narrating stories.

Table 4. The mean scores of specific connectives of narrative samples of typical controls (TC) and patients with schizophrenia (SZH)

	TC (N = 20)	SZH (N = 22)	<i>t</i> value	<i>p</i>
Causal C/Total utt	0.05	0.03	1.40	.169
Contrastive C/Total utt	0.06	0.02	2.79	< .05*

* $p < .05$

Table 5. The mean scores of specific verbal predicates related with character representations of narrative samples of typical controls (TC) and patients with schizophrenia (SZH)

	TC (N = 20)	SZH (N = 22)	<i>t</i> value	<i>p</i>
Perceptual V/Total V	0.04	0.06	-2.10	< .05*
Psych V/Total V	0.06	0.05	.91	.370
Mental V/Total V	0.09	0.04	4.79	.000**

* $p < .05$ ** $p < 0.1$

Discussion and conclusion

Two tiers of analysis have been conducted in this study: the discourse and the lexical levels. The group with schizophrenia performed significantly poorer on the discourse level (i.e., poorer on six out of the eight dimensions of NAP assessment). Results from lexical analysis also showed that the patient group lagged behind the typical group. The patient group did not use as many contrastive connectives or mental verbs, and they also used more general terms such as *nan2de0* 'the male', *nu3de0* 'the female', or *yi1ge0* 'the one' instead of terms that convey specific semantic features (such as *fu1qi1* 'husband and wife' or literal names of story characters). Their expressions of time and location were also not as concrete as those provided by the control group. In sum, the narrators with schizophrenia examined in this study were considered compromised in their ability to utilize their semantic knowledge when producing narratives.

Findings of this study echoed past studies in schizophrenic speech such as Chaika and Alexander (1986), Leroy et al. (2005), Lysaker et al. (2005), and Yu (1999). Mandarin-speaking patients with schizophrenia in this study had difficulties maintaining discourse. While schizophrenic speech has long been notorious for being loosely associated, manifested by derailment and tangentiality (Andreasen, 1979a), it is quite unexpected to find a weaker performance in dimensions of topic maintenance, conjunctive cohesion, and the overall narrative pattern in NAP assessments of the patient group. Since the story-telling task in the present study has a built-in control over topic variance and the performance of individuals with schizophrenia was the same as controls in event sequencing (i.e., presenting a sufficient number of logically-ordered events), it was very likely that the patients were capable of understanding the story in ways such as the controls with typical functioning did. Therefore, the difference between the two groups involved mainly an impaired ability to maintain the discourse topic.

The individuals with schizophrenia in this study produced significantly shorter narratives than the control group did, a phenomenon that has been observed in previous studies (Gruber & Kring, 2008; Tavano et al., 2008). Patients with schizophrenia were not as informative when narrating stories, in dimensions of reasonableness, background information, and evaluation. From time to time, important details or causal relations between events were omitted. Time and location expressions were also rare; or if they did exist, they were not as concrete as those provided by normal subjects. Such limitations can be interpreted as an outcome of a deficiency in the awareness of communicative needs (Lysaker & Lysaker, 2004; Tavano et al., 2008). Patients failed to match the needs of listeners, as their narratives are less elaborated, and contain less context-appropriate information (Chaika & Alexander, 1986; Gruber & Kring, 2008).

Although narratives of schizophrenia in this study were impaired on the discourse level, we did not observe any severely disorganized patterns of speech as reported in past literature (Andreasen, 1979b; Ditman & Kuperberg, 2010). Patients' narratives were simply shorter in length and not as rich in information. Thus, the weaker performance on the discourse level seemed to result from not saying enough rather than saying the unexpected. The outcome could be related to the task itself. The story-telling task has its own constraint: derailment and tangentiality can hardly be found due to the binding power of the picture story, preventing digressions to completely unrelated topics. The picture-books depicted a series of events and it was the simplest strategy to follow the presentation sequence of these pictures. If these patients were asked to tell personal experiences, we may well have very different stories and findings.

Though patients with schizophrenia were considered relatively weak in their production of narratives, they seemed to preserve an intact ability to identify basic elements and organize them temporally. These findings are very different from the report made by Rochester et al. (1977), but similar to those of Chaika and Lambe (1989). The discrepancy between our findings, which concern Mandarin speakers, and those of Rochester et al. (1977), which concern English speakers, further reminds us to be careful not to automatically generalize narrative performance across languages. The discrepancy between our findings and those of others could have resulted from typological differences between Mandarin and Indo-European languages. Speakers of Mandarin may adopt strategies so that they are not as vulnerable to language disturbances as other affected speakers of Western languages. Although we did not directly study the crosslinguistic issue of narratives, it is nevertheless worth mentioning. If verbal abnormalities are to be considered a hallmark of schizophrenia, further efforts must be made to tease apart impairments that are universal from those that are language specific.

Lexical analysis revealed that patients with schizophrenia used significantly fewer contrastive connectives, but they did not differ from subjects with typical functioning in their use of causal connectives. Usage of perceptual verbs and psychological verbs were also similar between the two groups. However, the patient group used significantly fewer mental verbs, suggesting a weaker presentation of inter-subjectivity in their speech, not using adequate measures in drawing hearers' attention to the mental state of the figures depicted (Iwasaki, 2010). Further analysis of verbal predicates in character representation also showed that the individuals with schizophrenia used more perceptual verbs but fewer mental verbs when portraying human figures. According to the three-level character representation process (Nicolopoulou & Richner, 2007), narrators with schizophrenia were more likely to characterize story characters as "agents" instead of "persons". Actions were depicted at the story characters' sensory level, without elaborations

on the knowledge and beliefs about their own actions that are usually expressed via mental verbs. This finding corresponded to suggestions that link schizophrenic language disturbances to the diminished Theory of Mind (ToM) ability (Harrington et al., 2005). The individuals with schizophrenia might suffer from a weaker ability to conceive the mental states of themselves as well as others, and thus overlooked the emotions of story characters. The same reason also accounted for the significantly poorer performance in the NAP assessment of evaluation. In addition, Lysaker and his colleagues (Lysaker & Lysaker, 2004; Lysaker et al., 2005; Lysaker, Wickett, Wilke, & Lysaker, 2003), investigating personal narratives of psychotherapy sessions, proposed that it was the diminishment of the sense of the self that led to narrative impoverishments in schizophrenia. Patients were considered to be unable to organize different self-positions and had a difficult time selecting the right self-positions or shifting between self-positions. While ToM ability and the “sense of self” addressed by Lysaker and his colleagues could have involved similar mechanisms, it is evident that narratives of schizophrenia in this study revealed a relative inability to predict or make sense of behaviors according to the mental states of oneself or others.

Using the multi-dimensional NAP assessment and the lexical analysis, this study has contributed to the research in schizophrenic speech and narrative analysis in three aspects. First and foremost, it demonstrated the differences in narratives produced by individuals with schizophrenia and the controls with typical functioning on two different levels: (1) the discourse level and (2) the word level. The consideration of both levels is unique. Secondly, this study linked diminished language ability to diminished ToM ability. Schizophrenic narrators were more likely to characterize story characters as “agents,” not “persons.” The tendency to not portraying characters as having certain cognitive inner states might reflect an impairment of ToM ability. Thirdly, the study highlights potential typological issues that need to be considered when comparing narrative studies across different languages. Further research must be devoted to separating cross-language impairments from discrepancies due to the particular languages compared, with the former believed to be the core of schizophrenic language disturbances.

Nevertheless the present study has certain limitations. First, our control group consists of undergraduate students who probably perform better in a variety of cognitive tasks compared to individuals who were typically hospitalized in their adolescence for treatment of schizophrenia, missing the chance of receiving formal education. While schizophrenic language disturbances are considered to involve some higher-order cognitive processes, it is quite hard to sort out all possible accounts of the verbal impairments with such a control group. Therefore, a group matched in age and education level would serve as a more apt comparison group in future studies. Second, though the verbal impairment in communication is

considered characteristic of schizophrenia, not all patients exhibit such difficulty. Hence, it is necessary to propose tasks that probe into individual differences. Third, most current studies of schizophrenic speech are based on personal narratives, and it is difficult to find comparable studies that also used the story-telling task we used. Though the story-telling task helped to limit the range of speech content, it also limited the range of possible discussion and comparison. Findings of the present study may serve as the basis for further investigation of personal narratives produced by Mandarin-speaking patients with schizophrenia. While the controversy on the relationship between language and thought in schizophrenic speech remains, our study here has advanced our understanding of interrelationships between the two.

Overall, findings of this study showed that Mandarin-speaking patients with schizophrenia had difficulties in producing well-established narratives. Narratives produced by schizophrenic patients were compromised relative to those produced by the individuals with typical development in both discourse level and word level. Patients' impaired narrative ability possibly exemplified concerns similar to their other constraints reported in Theory of Mind studies in schizophrenia literature. Variations of narrative performance between studies based on Mandarin and other languages are also noteworthy.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Andreasen, N. C. (1979a). Thought, language, and communication disorders: I. Clinical assessment, definition of terms, and assessment of their reliability. *Archives of General Psychiatry*, 36(12), 1315–1321.
- Andreasen, N. C. (1979b). Thought, language and communication disorders: II. Diagnostic significance. *Archives of General Psychiatry*, 36(12), 1325–1330.
- Andreasen, N. C. (1986). Scale for the assessment of thought, language, and communication (TLC). *Schizophrenia Bulletin*, 12(3), 473–482.
- Barch, D. M., Cohen, J. D., Servan-Schreiber, D., Steingard, S., Steinhauer, S. S., van Kammen, D. P. (1996). Semantic priming in schizophrenia: An examination of spreading activation using word pronunciation and multiple SOAs. *Journal of Abnormal Psychology*, 105(4), 592–601.
- Bleuler, E. (1950). *Dementia praecox or the group of schizophrenias*. New York, NY: International Universities Press.
- Bliss, S. L., McCabe, A., & Miranda, A. E. (1998). Narrative assessment profile: Discourse analysis for school-age children. *Journal of Communication Disorders*, 31(4), 347–363.
- Brüne, M., & Bodenstein, L. (2005). Proverb comprehension reconsidered – “theory of mind” and the pragmatic use of language in schizophrenia. *Schizophrenia Research* 75(2–3), 233–239.

- Chaika, E. (1974). A linguistic look at "schizophrenic" language. *Brain and Language*, 1(3), 257–276.
- Chaika, E. (1982a). A unified explanation for the diverse structural deviations reported for adult schizophrenics with disrupted speech. *Journal of Communication Disorders*, 15(3), 167–189.
- Chaika, E. (1982b). Thought disorder or speech disorder in schizophrenia? *Schizophrenia Bulletin*, 8(4), 587–591.
- Chaika, E., & Alexander, P. (1986). The ice cream stories: A study in normal and psychotic narrations. *Discourse Processes*, 9(3), 305–328.
- Chaika, E., & Lambe, R. A. (1985). The locus of dysfunction in schizophrenic speech. *Schizophrenia Bulletin*, 11(1), 8–15.
- Chaika, E., & Lambe, R. A. (1989). Cohesion in schizophrenic narrative, revisited. *Journal of Communication Disorders*, 22(6), 407–421.
- Cheung, H., Chang, C., Ko, H.-W., & Tsay, J. (2011). *Taiwan ertongyuyan yuliaoku zhi jianzhi*. [Taiwan child language data exchange system] (Research Report No. NSC96-2420-H-002-030.)
- Covington, M. A., He, C., Brown, C., Naci, L., McClain, J. T., Fjordbak, B. S., Semple, J., & Brown, J. (2005). Schizophrenia and the structure of language: The linguist's view. *Schizophrenia Research*, 77(1), 85–98.
- Cutting, J. (1981). Judgment of emotional expression in schizophrenics. *British Journal of Psychiatry*, 139, 1–6.
- de Silva, W. P., & Hemsley, D. R. (1977). The influence of context on language perception in schizophrenia. *British Journal of Social & Clinical Psychology*, 16(4), 337–345.
- Ditman, T., & Kuperberg, G. R. (2007). The time course of building discourse coherence in schizophrenia: An ERP Investigation. *Psychophysiology*, 44(6), 991–1001.
- Ditman, T., & Kuperberg, G. R. (2010). Building coherence: A framework for exploring the breakdown of links across clause boundaries in schizophrenia. *Journal of Neurolinguistics*, 23(3), 254–269.
- Elvevag, B., Fisher, J. E., Guad, J. M., & Goldberg, T. E. (2002). Semantic clustering in verbal fluency: Schizophrenic patients versus control patients. *Psychological Medicine*, 32(5), 909–917.
- Goldberg, T. E., & Weinberger, D.R. (2000). Thought disorder in schizophrenia: A reappraisal of older formulations and an overview of some recent studies. *Cognitive Neuropsychiatry*, 5(1), 1–19.
- Gruber, J., & Kring, A. M. (2008). Narrating emotional events in schizophrenia. *Journal of Abnormal Psychology*, 117(3), 520–533.
- Harrington, L., Siegert, R. J., & McClure, J. (2005). Theory of mind in schizophrenia: A critical review. *Cognitive Neuropsychiatry*, 10(4), 249–286.
- Harvey, P. D., & Neale, J. M. (1983). The specificity of thought disorder to schizophrenia: Research methods in their historical perspective. *Progress in Experimental Personality Research*, 12, 153–180.
- Hellwig, B., van Uytvanck, D., & Hulsbosch, M. (2007). *EUDICO Linguistic Annotator (ELAN)*. <<http://www.lat-mpi.eu/tools/elan/>>
- Huber, W., & Gleber, J. (1982). Linguistic and non-linguistic processing of narratives in aphasia. *Brain and Language*, 16(1), 1–18.
- Iwasaki, S. (2010, May). *Typology of subjectivity and its linguistic manifestations*. Paper presented at the 4th Conference on Language, Discourse and Cognition (CLDC 2010), Taipei, Taiwan.
- Kraepelin, E. (1992). Psychiatric observations on contemporary issues (E. J. Engstrom Trans). *History of Psychiatry*, 3, 253–269. Original work published 1919.

- Kuperberg, G. R. (2010). Language in schizophrenia Part 1: An Introduction. *Language and Linguistic Compass*, 4(8), 576–589.
- Langdon, R., Coltheart, M., Ward, P. B., & Catts, S. V. (2002). Disturbed communication in schizophrenia: The role of poor pragmatics and poor mind-reading. *Psychological Medicine*, 32(7), 1273–1284.
- Leroy, F., Pezard, L., Nandrino, J., & Beaune, D. (2005). Dynamical quantification of schizophrenic speech. *Psychiatry Research*, 133(2–3), 159–171.
- Liang, K.-C., Hwu, H.-G., & Fu, W.-M. (2011). *A Study on Pathogenesis of Schizophrenia: Genetic, neurobiological and cognitive science approaches*. (Research Report No. 97HM00271-7.)
- Lysaker, P. H., Davis, L. W., Eckert, G. J., Strasburger, A. M., Hunter, N. L., & Buck, K. D. (2005). Changes in narrative structure and content in schizophrenia in long term individual psychotherapy: A single case study. *Clinical Psychology and Psychotherapy*, 12(5), 406–416.
- Lysaker, P. H., & Lysaker, J. T. (2004). Schizophrenia as dialogue at the ends of its tether: The relationship of disruptions in identity with positive and negative symptoms. *Journal of Constructivist Psychology*, 17(2), 105–119.
- Lysaker, P. H., Wickett, A. M., Wilke, N., & Lysaker, J. T. (2003). Narrative incoherence in schizophrenia: The absent agent-protagonist and the collapse of internal dialogue. *American Journal of Psychotherapy*, 57, 153–166.
- MacWhinney, B. (2006). *The CHILDES project: Tools for analyzing talk* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Manschreck, T. C., Maher, B. A., Milavetz, J. J., Ames, D., Weisstein, C. C., & Schneyer, M. L. (1988). Semantic priming in thought disordered schizophrenic patients. *Schizophrenia Research*, 1(1), 61–66.
- Mayer, M. (1969). *Frog, where are you?* New York, NY: Dial Press.
- Mazza, M., de Risio, A., Surian, L., Roncone, R., & Casacchi, M. (2001). Selective impairments of theory of mind in people with schizophrenia. *Schizophrenia Research*, 47(2–3), 299–308.
- McGrath, J. (1991). Ordering thoughts on thought disorder. *British Journal of Psychiatry*, 158(3), 307–316.
- McKenna, P. J., & Oh, T. M. (2005). *Schizophrenic speech: Making sense of bathroosts and ponds that fall in doorways*. New York, NY: Cambridge University Press.
- Moritz, S., Mersmann, K., Kloss, M., Jacobsen, D., Wilke, U., Andresen, B., Naber, D., & Pawlik, K. (2001). “Hyperpriming” in thought-disordered schizophrenic patients. *Psychological Medicine*, 31(2), 221–229.
- Nicholas, L. E., & Brookshire, R. H. (1993). A system for quantifying the informativeness and efficiency of the connected speech of adults with aphasia. *Journal of Speech, Language, and Hearing Research*, 36(2), 338–350.
- Nicolopoulou, A., & Richner, E. S. (2007). From actors to agents to persons: The development of character representation in young children’s narratives. *Child Development*, 78(2), 412–429.
- Peterson, C. (1994). Narrative skills and social class. *Canadian Journal of Education*, 19(3), 251–269.
- Pickup, G. J., & Frith, C. D. (2001). Theory of mind impairments in schizophrenia: Symptomatology, severity and specificity. *Psychological Medicine*, 31(2), 207–220.
- Pilowsky, I., & Bassett, D. (1980). Schizophrenia and the response to facial emotions. *Comprehensive Psychiatry* 21(3), 236–244.
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, 1(4), 515–526.

- Randall, F., Corcoran, R., Day, J., & Bentall, R. (2003). Attention, theory of mind, and causal attributions in people with persecutory delusions: A preliminary investigation. *Cognitive Neuropsychiatry*, 8(4), 287–294.
- Rochester, S. R., Martin, J. R., & Thurston, S. (1977). Thought-process disorder in schizophrenia: The listener's task. *Brain and Language*, 4(1), 95–114.
- Sarfati, Y., & Hardy-Baylé, M. C. (2005). How do people with schizophrenia explain the behaviour of others? A study of theory of mind and its relationship to thought and speech disorganization in schizophrenia. *Psychological Medicine*, 29(3), 613–620.
- Tavano, A., Sponda, S., Fabbro, F., Perlini, C., Rambaldelli, G., Ferro, A., Cerruti, S., Tansella, M., & Brambilla, P. (2008). Specific linguistic and pragmatic deficits in Italian patients with schizophrenia. *Schizophrenic Research*, 102(1–3), 53–62.
- Tenyi, T., Herold, R., Szili, I. M., & Trixler, M. (2002). Schizophrenics show a failure in the decoding of violations of conversational implicatures. *Psychopathology*, 35(1), 25–27.
- Tsai, W. (2006). *A study of the narrative skill of children with language impairment* (Unpublished master's thesis). Fu-Jen Catholic University, Taipei, Taiwan.
- Tsou, C.-Z., Chang, C., & Cheung, H. (2009). Gaogongneng zibizheng ertong geren shen-ghuojingyan xushu yangjiu [Personal narratives of high-functioning children with autism]. *Bulletin of Special Education*, 34(2), 73–99.
- van Os, J., & Kapur, S. (2009). Schizophrenia. *The Lancet*, 374(9690), 635–645.
- Yu, Y.-J. V. (1999). *Pause in schizophrenic discourse*. (Unpublished master's thesis). Fu-Jen Catholic University, Taipei, Taiwan.

Author index

- A**
Abelson, R. 86
Adams, S. 117, 119, 146
Alexander, P. 181, 183–4, 200
Ambridge, B. 109
Andreasen, N. 183–4, 200–1
Andreu, A. 170
Aram, D. 149
Astington, J. 110
- B**
Baddeley, A. 74
Baker-Ward, L. 119
Bamberg, M. 35, 58–9, 61, 87,
89–90, 108–9, 111, 146, 172
Barch, D. 184
Bassett, D. 184
Baughn, C. 86
Bavin, E. 170
Beaune, D. 183
Bentall, R. 184
Berman, R. 3, 35, 61, 80, 86,
88–91, 93–4, 97, 99–100, 103,
107–9, 111, 122, 151
Bird, A. 12
Bishop, D. 143, 149
Bleuler, E. 181
Bliss, L. S. 66–7, 144, 147, 151, 185
Bodenstein, L. 184
Bohanek, J. 14
Bokus, B. 119
Borneman, A. 144
Boyle, P. 119
Bretherton, I. 46
Brookshire, R. 186
Brüne, M. 184
Bruner, J. 7–12, 15, 17, 26, 28, 34,
111, 115, 117
Burger, L. 119
- C**
Cai, Q. 59, 73
Camp, L. 34, 116, 144
Capps, L. 110
Carrell, P. 60
Carson, J. 60
Casacchi, M. 184
Catts, S. 184
Chafe, W. 58, 111
Chaika, E. 181–4, 200–1
Chang, C. 2, 35–6, 50, 62, 65, 88,
90–1, 107, 116, 120–2, 145–8,
152–3, 181, 185, 187
Chang, J. 35–6, 88, 108
Chang, P. 88, 108
Chao, R. 14–15, 25–7, 50
Chen, C. 118, 130
Chen, E. 9
Chen, H. F. 88
Chen, H. H. 88, 107–8
Chen, P. 59
Chen, S. 58–9, 65, 73, 79–80
Chen, Y. L. 116
Chen, Y. T. 116, 127
Chen, Y. Y. 9
Cheng, G. 149
Cheung, H. 91, 94, 96, 170, 181,
185, 187
Chou, Y. 90–1
Chu, C. 63
Chung, F. 116, 130
Clancy, P. 58–9, 65, 73
Clark-Chiarelli, N. 59
Cohen, J. 19, 40, 67, 90, 124
Coltheart, M. 184
Copmann, K. 146
Corcoran, R. 184
Covington, M. 182
Craig, H. 146
Cummins, J. 59–60, 78
Curenton, S. 118, 135
Cutting, J. 184
- D**
Damrad-Frye, R. 35, 87, 146, 172
Davies, K. 12, 50
Day, J. 184
de Risio, A. 184
de Silva, W. 183
Dickinson, D. 34, 59, 144
- Ditman, T. 183–4, 201
Doan, S. 12, 50
Dodsworth, P. 118, 123
Dodwell, K. 170
Dubé, R. 86
Dunn, J. 46
Dunn, M. 149
- E**
Edelsky, C. 59
Edelstein, W. 10
Eisenberg, A. 117
Ellis, R. 74, 78
Elvevag, B. 184
- F**
Fernandez, C. 119, 123
Fink, R. 107
Fisher, J. 184
Fivush, R. 8–9, 11–12, 14, 17, 28,
117–19, 146–7
Flax, J. 149
Fletcher, P. 144
Fox, B. 59, 73
Friedman, S. 86
Frith, C. 184
Frith, U. 205
Fromhoff, F. 117
Fu, V. 15
Fu, W. 185
Fung, H. 9, 85, 116, 132
- G**
Garside 144
Gass, S. 59, 78
Gathercole, S. 109
Gavin, W. 144
Givon, T. 58
Gleber, J. 186
Glenn, C. 86–7, 94, 146
Goldberg, T. 182, 184
Gray, J. 117
Graybeal, C. 146
Grice, H. 109
Griffin, T. 116, 121, 144–5

- Griffith, P. 146
 Gruber, J. 183, 200
 Guad, J. 184
 Gussenhoven, C. 47
 Gutiérrez-Clellen, V. 77
- H
- Haden, C. 11–12, 117, 146
 Halliday, M. 58, 65, 74, 117–18, 123
 Han, J. 13
 Happé, F. 110
 Hardy-Baylé, M. 184
 Harrington, L. 184, 202
 Harris, S. 3, 34, 116, 145
 Hart, B. 116, 129
 Hart, D. 10
 Harvey, P. 181
 Hasan, R. 58, 65, 74, 117–18, 123
 Hayward, D. 86
 Hazzard, A. 17
 Heath, S. 117, 135
 Hedberg, N. 107
 Hellwig, B. 186
 Hemphill, L. 116, 144
 Hemsley, D. 183
 Hendriks, H. 58–9, 63
 Herold, R. 183
 Hesselink, J. 144
 Hickmann, M. 58–9, 62
 Hoff, E. 117
 Hoff-Ginsberg, E. 154
 Hsia, H. 116
 Hsu, Y. 60, 144
 Huang, J. 35–6
 Huang, S. 59, 73
 Huber, W. 186
 Hudson, J. 118, 123, 173
 Hulsbosch, M. 186
 Huntsinger, C. 15
 Huntsinger, P. 15
 Hwu, H. 185
- I
- Iwasaki, S. 201
- J
- James, D. 173
 Jarvis, S. 78
 Jenkins, J. 110
 Jesso, B. 116
 Justice, L. 118, 120, 135
- K
- Kaderavek, J. 146, 148, 172
 Kang, J. 59, 61, 78
 Kapur, S. 182
 Karmiloff, A. 34
 Kelty, K. 147, 172
 Kemper, S. 147
 Klecan-Aker, J. 147, 172
 Koh, J. 1–2, 9, 50
 Kraepelin, E. 181
 Kring, A. 183, 200
 Kroll, B. 60
 Kuebli, J. 119
 Kuehn, P. 60
 Kuperberg, G. 182–4, 201
 Kurland, B. 145
- L
- Labov, W. 34, 36, 90, 117, 120, 123, 145–6, 152, 171
 Lai, W. 116, 118, 121, 123, 127, 130
 Lambe, R. 183, 201
 Langdon, R. 184
 Lapkin, S. 59
 Lee, J. 118
 Lee, W. 146–8, 172–3
 Lee, Y. 118
 Leichtman, M. 12–13, 50
 Leonard, L. 143–4, 149
 Leroy, F. 183, 200
 Li, C. 59, 62–4, 66, 73
 Li, D. 149
 Li, Y. 88, 107–8
 Liang, C. 85, 116, 132
 Liang, K. 185
 Liles, B. 146–8, 170, 172–3
 Lin, B. 149
 Lin, C. 15, 26–7
 Lin, H. 116, 130
 Lin, I. 63
 Lin, L. 88, 107
 Lin, M. 149
 Lin, S. 9
 Liu, H. 149
 Losh, M. 110
 Lu, L. 116, 127, 130, 138, 149, 176
 Lu, M. 116, 127, 130
 Luo, Y. 50
 Lysaker, J. 183, 200, 202
 Lysaker, P. 181, 183, 200, 202
- M
- MacWhinney, B. 38, 40, 62, 67, 123, 151, 170, 186
 Maes, A. 58
 Manhardt, J. 146, 170
 Manschreck, T. 184
 Marchman, V. 87, 89–90, 108–9, 111
 Marin, K. 14
 Marti, E. 100
 Martin, J. 182–3
 Mayer, M. 2–3, 89, 186
 Mazza, M. 184
 McCabe, A. 33–9, 44–6, 50, 53, 57, 66–7, 116–18, 120–3, 128, 132–3, 135, 144–7, 151–2, 172, 185
 McCarthy, M. 65
 McClure, J. 184
 McCormack, P. 173
 McGrath, J. 183
 McKenna, P. 181–2, 184
 McLean, K. 9
 Melzi, G. 119, 123
 Menard, E. 110
 Merritt, D. 146–8, 170, 172–3
 Miller, P. 9, 11–12, 28, 34–6, 46, 85, 115, 117, 119, 146–7
 Minami, M. 33, 50, 120, 146
 Miranda, A. 144, 146, 148, 170–1, 173, 185
 Molz, C. 144
 Montgomery, J. 170
 Moreton, J. 34
 Moritz, S. 184
 Morley, M. 144
 Motttron, L. 110
 Munger, M. 86
 Munn, P. 46
- N
- Nandrino, J. 183
 Neale, J. 181
 Nelson, K. 8–11, 34
 Nicholas, L. 186
 Nicholson, P. 145
 Nicolopoulou, A. 119, 189, 201
- O
- Ochs, E. 8, 13, 117
 Odlin, T. 59
 Oh, T. 181–2, 184
 Olmos, J. 170
 Olson, D. 135
 Owens, R. 147
- P
- Paul, R. 148
 Pavlenko, A. 78

- Pearce, W. 173
 Pearson, B. 61
 Peretz, I. 110
 Perner, J. 111
 Peterson, C. 3, 33–9, 44–6, 53, 57,
 67, 116–18, 120–3, 128, 132–3,
 135, 145–7, 151–2, 172, 188
 Pezard, L. 183
 Piaget, J. 111
 Pickering 109
 Pickering, S. 109
 Pickup, G. 184
 Pilowsky, I. 184
 Policastro, M. 87
 Porche, M. 3, 34, 116, 145
 Premack, D. 184
 Prinz, P. 146
 Purcell, S. 148
- R
- Randall, F. 184
 Reese, E. 11–12, 116, 121, 135
 Reilly, J. 34–5
 Rescorla, L. 144, 146, 170
 Rice, M. 144
 Richner, E. 119, 189, 201
 Ridgeway, D. 46
 Risley, T. 116, 129
 Roberts, J. 144
 Rochester, S. 182–3, 201
 Rodkin, P. 86, 90
 Rollins, P. 120, 123, 151
 Roncone, R. 184
 Roth, F. 107, 146, 170, 172
 Rudolph, D. 8
- S
- Sachs, J. 115, 117
 Sah, W. 34–6, 87–8, 91, 95, 98,
 107–8, 110–11, 172
 Sales, J. 17
 Sanz-Torrent, M. 170
 Sarfati, D. 17
 Sarfati, Y. 184
 Schank, R. 86
 Schieffelin, B. 117
 Schneider, P. 86
 Scholnick, E. 86
 Scott, C. 146
 Selinker, L. 78–9
 Shapiro, L. 118, 123, 173
 Shaver, J. 172
 Shen, Y. 99, 111
- Shiro, M. 35, 120, 127, 130
 Siegert, R. 184
 Silberstein, S. 60
 Sleight, C. 146
 Slivinski, M. 149
 Slobin, D. 3, 35, 61, 80, 86,
 88–91, 93–4, 97, 99–100,
 107–9, 111, 122, 151
 Smith, R. 8, 148
 Snow, C. 3, 34, 50, 85, 116, 121,
 135, 144–5
 Song, Q. 12, 50
 Spekman, N. 107, 146, 170, 172
 Sperry, L. 34–6, 46, 108, 115,
 146–7
 Stark, R. 149
 Stavans, A. 78
 Stein, N. 86–7, 94, 145
 Stokes, S. 144
 Strong, C. 172
 Su, I. 59, 73, 78
 Sullivan, K. 110
 Sulzby, E. 146, 148, 171–2
 Surian, L. 184
 Swain, M. 59
 Szili, I. 183
- T
- Tabors, P. 3, 34, 116, 144–5
 Tager-Flusberg, H. 110
 Tallal 144
 Tallal, P. 144, 149
 Tardif, T. 119
 Tavano, A. 183–4, 200
 Taylor, B. 79
 Taylor, C. 8
 Tekdemir, G. 90–1, 93–4, 107,
 109, 111–12
 Tenyi, T. 183
 Thompson, S. 59, 62–4, 66, 73
 Thurber, C. 110
 Thurston, S. 182–3
 Trabasso, T. 86–91, 94–9, 108–9,
 111
 Trauner, D. 144
 Trixler, M. 183
 Tsai, C. 88, 107
 Tsai, W. 147–8, 172, 188
 Tsay, J. 187
 Tseng 25
 Tseng, V. 15, 25
 Tsou, C. 91, 94, 96, 181, 185,
 187–8
- U
- Uccelli, P. 35, 120
 Ukrainetz, T. 119, 127
- V
- Van Os, J. 182
 van Uytvanck, D. 186
 Veneziano, E. 119
 Verhoeven, L. 59–60, 78
- W
- Wang, K. 116
 Wang, Q. 2, 9, 12–13, 25, 28,
 50–1
 Wang, X. 59, 61–2, 73, 88, 108,
 172
 Ward, P. 184
 Watkins, R. 144, 149, 170
 Wearing, H. 109
 Weeks, T. 144
 Weinberger, D. 182
 Wellman, H. 119
 Wellman, R. 120
 Werner, L. 144
 Wickett, A. 202
 Wigglesworth, G. 58, 61
 Wiley, A. 85
 Wilke, N. 202
 Willett, J. 154
 Windsor, J. 146
 Wolf, A. 59
 Wolf, P. 34, 116, 121, 144
 Wong, A. 144
 Woodruff, G. 184
 Wulfeck, B. 144
- X
- Xu, Y. 171
- Y
- Yeh, L. 144
 Yen, C. 116, 130
 Yu, Y. 183, 200
- Z
- Zahn-Waxler, C. 46
 Zecker, L. 171
 Zhang, L. 170, 172

Subject index

- A**
additive connectives 166–8,
173
adverbs, evaluative 49, 161–4
age effect, significant main 35,
93–5, 98, 101, 172
age-matched children 143, 148,
150, 154, 158–9, 164–5, 168–70,
172
ambiguity 67, 70–1, 73, 75–7
American children 33–4, 37,
44–5, 49, 54, 147
appropriateness and
inappropriateness 65–8, 70–1,
73, 75
autobiographical memory 2,
9, 13, 51
- B**
bare nominals 2, 58–9, 63–4, 70,
72, 74, 76–7, 79
behaviors 9, 13, 18, 27, 50, 184,
190, 202
- C**
causal connectives 166–8, 173,
181, 189, 199, 201
causal explanations 35, 39, 42,
44–8, 172
causality 147, 160–4, 174, 187
Chinese immigrant parents 1–2,
7, 14–15, 20–2, 24–8, 50
classifiers 58–9, 63
clauses 2, 35, 39–41, 43–4, 58, 62,
65, 68, 77, 117–18, 122, 125–6,
151–2
codas 4, 9, 120, 124, 141, 143,
155–8, 171
cognition 1, 3, 120, 123, 127, 146
conjunctions 3, 74, 115, 117–18,
121, 123–8, 130–2, 135, 147–8,
173, 181, 183, 189
connectives 147–8, 153, 166–8,
172–3, 181–2, 188–9, 196, 198–9
content, social 18
context 11, 26, 64–5, 69, 72, 76,
80, 171, 184
contrastive connectives 181, 189,
199–200
conversations 11–12, 16, 19–20,
22, 26, 28–9, 33–5, 38, 57, 117,
119, 144, 151, 185, 197–8
Couple Story 186, 191, 196
cross-border marriages 3,
115–16, 121–2, 127–30, 132, 135
culture-of-origin 7, 14–15, 26
- D**
delimiters 34, 47, 153, 161–4, 171
derailment 183, 200–1
determinate nominals 63–4,
70–4, 76, 79–80
determiners 2, 63–4, 67, 72, 78
developmental differences 41,
102, 109–10, 159, 165
developmental rate 154, 158–9,
164, 168–9
discourse contexts 57–8, 60,
62–3, 65–9, 71, 75, 78
discourse level 146, 200–3
- E**
elaboration 94, 97–101, 103–4,
108, 110, 189, 201
ellipsis 58, 64–5, 70, 72, 74,
76–9, 117
elongators 38, 42, 44–5, 54
emotion attribution 87–8, 95,
98, 110
emotions 12, 14, 24–5, 47, 95,
118–20, 135, 198
negative and positive 12, 119
encoding 85, 87–8, 90–3, 95,
97–100, 102, 104–5, 107–9, 111,
135, 190
English-speaking children 5,
33, 35–7, 44, 46, 97, 118, 120–1,
144–5, 147–8
European American 1–2, 7–8,
12–13, 15–17, 19–21, 24–8
evaluation coding 40, 152–3
evaluation comments 33, 41, 44,
46–7, 50
evaluation devices 33–41, 43–5,
47, 146–7, 153
evaluation strategies 34–6, 40–1,
44, 46
evaluation types 45, 160–1
evaluative adjectives 47–8,
161–4
evaluative comments 35, 50, 54,
111, 133
evaluative narration 155–8
event components 85–6, 97–9,
108
event relation 101–3, 111
events
complex 85, 88, 91, 97, 108
individual 86–7, 109, 111–12,
117
initiating 94, 96, 98, 146
link 105, 120, 132, 135
sequence of 4, 61, 85, 88, 91,
97, 101, 107–9, 111, 132, 181,
187, 191, 196, 200
exaggeration 35, 39, 42, 45–7,
160–4, 172
exclamations 39, 42, 44, 46, 160
explanations 13–14, 103, 106, 171
- F**
family reminiscing 13–15, 22, 51
foreign brides 3, 115–16, 122
Frog Story 2, 35, 60–7, 77, 88–90,
94–6, 100, 103–5, 108, 111, 186
- G**
gestures 34, 135, 152, 155–8
goals 85–8, 94–7, 109, 117, 197–8
- H**
high point action 35, 45–6
high-point analysis 120, 123, 145
hypotheses 39, 42, 44–6, 83,
160–4, 174

- I
- idioms 40, 45, 160–4, 172
- immigrant families 7–8, 14–15, 17, 20, 25–9
- immigrant mothers 116, 130
- independence 12–15, 26–7
- inferences 39, 42, 44–6, 153, 160–4, 172
- intensifiers 34, 47–9, 161–4, 171
- intentions 8–9, 39, 42, 44–6, 87, 118–20, 123, 127, 152, 160–4, 190, 197
- interdependence 12–15, 25
- internal emotional states 39, 44–6, 160–4, 172
- internal state language 115, 117–21, 123–5, 127, 130, 134
- internal states 7, 9, 11–12, 18–21, 27, 29, 50, 110, 119, 126, 152, 184, 188, 197
- interpretation, subjective 118, 120, 123, 130, 134
- J
- judgments 39, 42, 44–7, 87, 110, 161–4
- L
- landscape of action 7, 9, 11, 17, 19–20, 26, 28, 111
- landscape of consciousness 7, 9, 11, 18–20, 27–8, 111
- language ability 116, 147–50
- language acquisition, second 59–60
- language development 10, 78, 116–17, 119, 130, 135, 147–9
- language disorders 181, 183–4
- language disturbances, schizophrenic 182–3, 202
- language impairment 146–9, 172–3
- language learning 57–9, 77
- language socialization 117–18
- lexical analysis 4, 181, 185, 189, 199–202
- lexical choices 185, 198–9
- M
- memories 2, 8, 10–15, 19, 25, 27–9, 50–1, 186
- mental states 9, 32, 111, 113, 119, 184, 189, 201–2
- metaphors 34–5, 39, 42, 45–6, 153, 160–4, 184
- middle-class children 3, 115–16, 118, 122, 126–7, 129–30
- mother-child 14, 26–7, 50, 130, 145
- N
- narrative
- classic 124, 128–9, 145
- end-at-high-point 121, 124, 128–9, 141
- leapfrog 121, 124, 128, 132, 140
- narrative abilities 88–9, 108, 116, 147, 181
- narrative clauses 40–1, 54, 173
- narrative development 61, 88, 107–8, 117–18, 120–1, 123–4, 130, 134, 143, 145
- narrative discourse 58, 79, 85
- narrative mode 8–9
- narrative pattern 4, 181, 187–8, 190–1, 198, 200
- narrative performance 107, 116, 121, 125, 154, 187, 201, 203
- narratives
- Chinese 62, 68–77, 79
- English 62, 66–79
- fictional 89, 119–20, 130, 151
- oral 60, 78, 135
- personal 33–41, 43–7, 49–51, 53, 80, 115, 117–23, 125, 127, 129, 131, 135, 146–8, 151, 202–3
- sequential event 140–1
- negations, explicit 39, 161–4
- negative behaviors 18–20, 22, 27–8
- negatives 39, 42, 45–6, 171
- nominal forms 65, 67, 70, 72, 74, 76–7, 79
- nominal types 68, 70–1, 75
- nominals, indefinite 58, 63–4, 80
- noun phrases 58, 63–5, 67, 77
- nouns 2, 17, 39, 58–9, 64–7, 72, 75, 185, 188
- evaluative 160–4, 172
- optional connectives 166–8, 173
- overgeneralization 74, 77, 79
- P
- paradigmatic mode 8
- past experiences 11–13, 15, 20, 26–8, 32–3, 49–51, 80, 115, 117, 120, 122, 133–4, 170
- peers 4, 104, 143, 170, 172–3, 190
- perception 120, 127, 130, 181–2, 189
- person pronouns 64–5
- personal experiences 7, 9–10, 29, 36, 44, 51, 113, 115, 117–18, 121–3, 125, 130, 145, 171, 201
- perspectives 13–14, 46, 50, 77, 80, 100, 110, 118
- plot 9–10, 86, 90, 97, 197
- plot components 3, 86, 90–3, 108
- positive behaviors 18–20
- predicates, verbal 181, 189, 199
- predictions 139, 153, 160–4, 184
- preschool children 3, 32, 34, 86, 88, 107, 110–11, 113, 137–8, 148–9, 175–6
- Chinese 144, 172
- preschool children, Taiwanese 172
- pronouns 58–9, 64–7, 74–5, 77–8, 188, 198
- protagonists 94, 98, 100, 110–11, 147, 188
- Q
- quotations, direct 103–4
- R
- reasonableness 4, 181, 187, 190–1, 197, 200
- recounting past events 21, 26–7
- reference appropriateness 66, 68–9, 73, 75
- referent introduction 71–3, 75, 77–80
- referential appropriateness 62, 67, 69, 75
- referential forms 66, 70
- referential skill 78, 181, 187–8, 191, 198
- referential strategies 58, 60, 62, 66–76, 78, 80
- O
- objects 17, 19–20, 26, 28, 62, 106, 111, 152, 155–8
- onomatopoeia 39, 42, 44, 46, 161–4, 188

- referents 58–9, 61, 64, 66, 69–70,
72–7, 79
animate 61, 65, 67
- repetitions 35, 39, 42, 45, 160–4,
172, 188
- reported speech 120, 155–8,
170–1
- responses, internal 85, 110,
146–7
- rules, social 13, 18–20, 27–8
- S**
- schemes, goal-plan 85, 90–1, 97
- schizophrenic speech 182–3,
200, 202–3
- schools 132, 135
- self
bicultural 7–8, 14–15, 26
independent 7, 15–16, 26–8,
34, 50
- self-concept 7–8, 10, 13–14, 29
- sentences 47, 63, 75, 173
- sequential connectives 166–8
- similes 34–5, 39, 42, 45–6, 160–4
- simple connectives 166–8
- social interactionist, social
interactionism 11, 15
- social interactions 15, 25, 27,
145, 151
- socialization 7–8, 10–11, 15–16,
26, 28–9
- socialization context,
important 7–8, 14–15, 25–6
- socioeconomic status
(SES) 115–17, 119–22, 124–30,
134
- Southeast Asia 115–16
- story characters 78, 80, 87, 91,
110, 187–90, 197–8, 200–2
- story grammar 88, 145–6
- story-telling task 181, 185, 200–1,
203
- strategies 36, 45, 186, 201
- stressors 35, 39, 42, 44–7, 54, 160
- students 50, 60–2, 72, 74–5, 77,
80, 135, 186
- subject context 59, 73–4, 78
- subject position 58–9, 62, 65–7,
73
- subjects 66–7, 74–6
- symptoms, thought-
disordered 182–3
- syntax 144–5
- T**
- tangentiality 183, 200–1
- target language 57–9, 71, 74,
79–80, 188
- teachers 135, 149–50, 174
- temporal connectives 154,
166–8, 172, 174
- temporality 4, 135, 143, 145,
147–8, 152–4, 165–70, 172–4
- terms, gratuitous 35, 39, 42,
44–7
- Theory of Mind 100, 110, 184,
202
- topic maintenance 181, 187,
190–1, 196, 200
- U**
- utterances 29, 40–1, 68, 151–2,
186–7, 190, 196
- V**
- verb predicates 189, 199, 201
- verbs
evaluative 160–4
mental 181–2, 189–90,
199–200, 202
perceptual 181, 189, 199, 201
psychological 181, 189, 199,
201
- vocabulary 57, 115, 124–5, 127,
129–30, 143, 147, 149, 172, 174
- vocabulary development 124–5,
127, 129–30
- W**
- words
internal state 119–20, 126–7,
130
obligatory 127, 130
- words per se 35, 39, 44–9, 54
- working-class children 37, 122,
128–30, 132, 135
- working memory 74, 77, 85–6,
109, 170
- Z**
- zero anaphora 64–6, 70, 72–4, 76