



Section 2: **Applied linguistics, translation, and health**

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Chapter 3

Children learning about dementia in Taiwan: Using gist translations to clarify adult opinions

1 Introduction

As the global aging population increases, so does the increase in projections of dementia. The United Nations (www.un.org) projects that one out of every six persons will be 65 or older by 2050. By that same date, the World Health Organization (www.who.int) expects the number of people with dementia to triple. Knowledge of and understanding about dementia vary in different countries and cultures. Studies of the impact of disseminating knowledge about dementia typically focus on adults or on adolescents. Little is known regarding the effects of increasing dementia knowledge in pre-adolescent children in Asian countries or its impact on combating the stigma of dementia still prevalent in many societies.

This chapter explores adult reactions in interviews in a small, exploratory study of elementary-school Taiwanese children formally learning about dementia in their classrooms. We begin with features of the context that provides the rationale for our focus. The context explains several critical features in the discourse offered by adult participants who consented to an interview, and suggests wider sociocultural issues to which the study points. Next, we briefly display the results from the two exploratory surveys given to the elementary-school children and move to look at 29 adult interviews from the perspective of interpersonal pragmatics (Locher 2013).

Interviews were conducted in the Taiwanese variety of Mandarin Chinese by the second author who speaks both Mandarin and English. Because neither the first nor the third author is competent in Mandarin, we used post-edited automatic machine translations of the adult interviews. Such translations enable the researcher to understand the gist of the interviews but not nuances of expression, or shades of meaning arising from the way the ideas were phrased and presented

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verbally and nonverbally by the interviewees. This gisting forms a second, underlying context of technological adaptation. We briefly discuss issues inherent in using machine translations and finally analyze the gists of the conversational interviews from the adults who were connected to the children's schools in various roles.

2 Context

2.1 Demographics

The twenty-first century has seen Taiwan's constantly increasing industrialization and profitability which, combined with population shifts in both location and density, have contributed to major social changes, including demographic shifts affecting aged care. Economic growth began in the twentieth century in the 1960s, reforms in the health system were underway in the 1980s and studies of the various dementias had already begun to appear in the late 1980s and early 1990s. Healthcare has been a priority for the government: between 2003 and 2008, Taiwan's government presented twelve plans for healthcare and long-term care, leading eventually to the Ministry of Health's 2017 *Act for Long-Term Care 2.0* updated in 2018 and currently offering three tiers of care (<https://www.mohw.gov.tw/cp-4344-46546-2.html>).

Demographic statistics, as interpreted by researchers of sociocultural trends, underlie many efforts for the development of care for Taiwan's ageing population. The annual Survey of Social Development Trends, sponsored by Academia Sinica, Taiwan's national research academy, makes its data available to researchers and to collaborating data archives in the social sciences. For example, the 2002 survey noted a decrease from 1998 in those families including grandparents (<https://eng.stat.gov.tw/ct.asp?xItem=9368&ctNode=1644&mp=5>). Keyed to information in the 2011 Survey, Poston and Zhang stated that in 2000, a senior citizen was supported by a little over 8 people, but given the dropping birthrate, their available support would drop to 2.11 people by 2060 (2014: 276). Taiwan's population is aging rapidly. The aging share of the population is currently a little over 16 per cent and is expected to be as much as 40 per cent in another twenty years (<https://statistica.com>), while the birthrate in 2021 is reported as the lowest in the world (<https://www.taiwannews.com.tw/en/news/4180941>). Currently, 78.5% of Taiwan's population is urban and the average age for first-time mothers is now 31, as shown in figures released by the Ministry of the Interior in 2020.

2.2 Present issues

Two immediate effects of this demographic shift will be key to understanding future care for the ageing in Taiwan and particularly for those ageing with dementia or disabilities. The first effect is economic: it is created by the rise in projections for dementia care, the falling birthrate and the changing family structure, often assumed to be the result of urbanization, together with a concomitant increase in one-parent households (see Hsueh 2014: 199). These factors have led to the new Dementia Care 2.0 (Ministry of Health and Welfare, Taiwan 2018) which in turn entails a needed expansion for education about dementia and in the caregiving workforce. Dementia Care 2.0 states ‘Education and training should be available to the professionals as well as the public. . . . Besides training for the professionals, dementia awareness campaigns should be provided to police officers, village chiefs, **elementary school students** and the public’ [emphasis ours] (Ministry of Health and Welfare, Taiwan 2018: 30). The second effect may be termed sociocultural, as it is reflected in how current assumptions about civic and familial virtue, or filial piety, are affected.

Hiring immigrant care workers has been one attempted solution for older people needing long term care: Wang asserts that by 2010, with other family members often working outside the home, immigrant workers were caring for 60 per cent of the seniors in Taiwan (2010: 766–67). Wang and Chen (2017: 122) state that by 2016, 15% of families with older persons needing care were using day care services or daily home care migrant workers, and 25% of the families had hired a worker to live in the home. An analyst for Taiwan *Business Topics* asserted that by 2018, the National Immigration Agency reported that there were over 250,000 foreign caregivers (Ferry 2018). Reporting in 2020 for *News Lens*, another business news publication, Fahey explained that the part of the Taiwanese population available to work was projected to drop to under 50% by 2065, adding, “Simply put, there will not be enough young people working and paying taxes to support a large population of retired people” (2020: 3). And, as reviewed by Chen and Fu (2020) and summarized by Wu et al. in 2021, new payment policies for the home care system, “intended to be a supplementary system grounded in the traditional Confucian care model” (Yeh 2020: 85) whereby adult children are expected to care for their aging parents, have resulted in changes both in home care services and in the number of persons receiving them.

Lan Pei Cha, perhaps still best known for her explosive 2006 *Global Cinderellas: Migrant Domestic Workers and Newly Rich Employers in Taiwan*, had earlier called attention in 2002 to the language issues implicit in the establishment and maintenance of class boundaries for foreign domestic workers. Such issues are expanded in interactions between foreign care workers who speak neither Mandarin nor Taiwanese, who may lack training as culturally competent care workers (Davis and

Smith 2013) and who have been hired to care for older Taiwanese with disabilities and dementias. Munkejord et al. (2021: 2) note that by 2020, there were more than 260,000 registered live-in migrant caregivers. As reported by Yang (2020), Chen Cheng Fen, 2020 President of the Taiwan Association for Family Caregivers, has found that 96.9 per cent of migrant domestic caregivers face major problems with language barriers, training in caregiver skills, and instruction in food preparation. The Association had previously begun work with these problems by, for example, mounting 38 videos for Vietnamese caregivers on YouTube (外籍勞工照護技巧## 2017).

The “traditional Confucian care model” referenced above refers to the cultural construct of *filial piety*, in which the oldest surviving son (although more commonly his wife) cares for the parents who had cared for him. That sentence is a greatly oversimplified description of a major tenet of thought about civic and individual virtue which has been both familial and sociopolitical in its influence for at least two thousand years. One question before many countries throughout the world is this: with the increasing number of aging people and the declining birthrate, will families “be expected to provide both childcare and aged care?” (Ping and Chun 2019: 1914) Such a question has immediate force in Taiwan, as its birthrate is now the lowest in the world (*Taiwan News* 2021–04–19). Payette and Chien assert that Taiwan’s expansion of its long-term care system has shifted “elder care responsibilities from the traditional familial care model to a more socialized one” (2020: 228). However, as Farrell and Yi note (2019: 1893) “. . . in a changing society like Taiwan, neither traditional nor modern norms and roles provide adequate guidelines for interaction in families. Both traditional and modern norms receive varying degrees of support and resistance from family members, and often they conflict with one another.”

The emphasis on traditional cultural norms can be seen in the 2017 speech to the Ministry of Education by Sophie Chang, Chair of the Taiwan Semiconductor Manufacturing Company’s Charity for “the trigger of revival of filial piety” (https://esg.tsmc.com/csr/en/update/socialParticipation/content/charity_2/). Since then, the TSMC charity has established a website in a well-regarded high school, given prizes, and worked with the Ministry to list filial piety as one of the core values in guidelines for schools to facilitate moral culture (<https://english.moe.gov.tw/cp-116-24161-390e9-1.html>).

2.3 Relationships of children giving care to older persons with dementia

Assumptions about some features of filial piety and changes in family structure are often embedded in sociocultural discussions of children’s relationships with

older persons or even as their caregivers. Such discussions entail identifying whether the child is living in a three-generation home or the older person is living outside the child's home, either alone or in a care facility. For example, Assaf et al. (2016: 327) report that in the US in 2005 there were roughly 1.3 million young caregivers providing help to seniors or persons with disabilities, adding that this could make the caregivers vulnerable to later stress. According to the ongoing survey by the National Alliance for Caregiving and the American Association of Retired Persons (AARP), the number of children offering caregiving in the US had increased by 2020. The AARP estimate 3.4 million (or more) children below 18 are providing care to adults, with more non-Whites than Whites providing this care.

Based on a long-term study of Chinese older adults in the Chicago area of the US, those whose families expected filial piety from younger family members were “vulnerable” to stress as they aged (Dong and Zhang 2016). This is partially explained by a conference abstract by Xu, Li and Zhang (2016), published by the Gerontological Society of America, and keyed to 500 interviews with persons in Xu et al.'s study. They found that 43.8% of the respondents explained that older and younger citizens now held differing views of filial piety. Hall and Sikes have published a series of studies about young people living in families with dementia, particularly if the person with dementia is a parent. They report a sizeable number of grieving and even hostile reactions from the younger persons (Hall and Sikes 2017, Sikes and Hall 2018). Such reactions were echoed in questionnaires from a little over 900 British adolescents in Farina et al. (2020) who explained the young people learned about dementia from the media or on the internet, rather than in school.

2.4 Previous work in Taiwan to investigate children's attitudes toward and understanding of dementia

In the mid to late 1990s, a small team of Taiwanese researchers in neurology, whose studies focused on brain disorders, began a lifetime's publishing on dementia which continues today. In early articles from studies often led by Dr. Jong Ling Fuh, they looked at screening tools (Fuh et al. 1995) and caregiver depression (Fuh et al. 1999), behavioral disorders (Fuh et al. 2001), agitation (Fuh et al. 2002), differing features among types of dementia including Alzheimer's dementia (Fuh, Wang and Cumkings 2005), and community understanding of how dementia – called senile dementia throughout the community – might be seen by children and adolescents (Fuh, Wang and Juang 2005). Fuh had begun community surveys as part of a larger team which had surveyed 5297 persons in Taiwan to begin to identify dementia prevalence (Liu et al. 1995). They report that at that time, there

were few if any nursing homes as Chinese elders lived with their families who protected them. The elders also had a shorter life span than seniors in the West.

Fuh, Wang and Juang (2005) conducted a 10-question survey, with 5515 students out of 5825 returning the questionnaire. The students, all aged 10–15, attended one of seven schools. The Attitude Toward Dementia Questionnaire created by the authors had 5 yes-no questions and 5 Likert-scale type questions, as displayed in their Table (Fuh, Wang and Juang 2005: 140). Their 5 Yes/No questions included the following: have you heard about senile dementia? 93% responded yes. Will you worry about your parents/grandparents getting it? 70 % yes. The Likert scale was used to respond to whether it was normal to get dementia when one grew old: 44.8% disagreed and 22.4% strongly disagreed; there were similar percentages for whether it was incurable and ‘embarrassing’; however, 86% thought dementia was preventable.

Younger students thought dementia was a normal part of aging, a hereditary kind of psychosis, and probably contagious; they would feel “embarrassed” to bring home a friend (Fuh, Wang and Juang 2005: 140). Older students knew more about dementia and were more likely to believe it was preventable. The study’s authors called for dementia education since none was available in schools, and few teachers had responded to the questionnaire.

3 Present work in Taiwan to investigate children’s attitudes toward and understanding of dementia

3.1 Background and methods

In 2020, Kuo, a geriatric counselor and former elementary school teacher who had completed preliminary PhD studies abroad, initiated an attitudinal study with 299 students in grades three through six in eight small schools in Southern Taiwan. The students were aged from 8 to 11. The schools had been recently incorporated into two sizeable cities and are considered suburban rather than rural. An ethics review was conducted, and approval was given by the National Cheng Kung University in Tainan, Taiwan. The study was sponsored by Kaohsiung Women’s Work Association, a non-profit organization including outreach to the aged in Kaohsiung. Schools were contacted for permission through Kuo’s relatives and a local politician who was a family friend. In each school, the principal read the proposal and authorized Kuo to administer two short, pencil-paper surveys to school-selected classes of students before and after she delivered a Power Point presentation to them about dementia. Parents in each selected class filled out a consent

form allowing their children to take part. There was also a consent form for the children, and since they are considered vulnerable, consented children also gave verbal assent to being recorded at the start of each child interview. The original proposal included a second post-test with the surveys two weeks later, but that was not fully possible with several of the schools. Accordingly, our report does not include data for schools whose students could not take the second post-test. Following the first post-test, focused conversations were held with 19 students and 29 adults in various roles connected to the schools.

The study was designed to elicit what students in grades three through six might know in advance about dementia and what they might gain from the presentation. It was also designed to ascertain what empathy they might have in advance towards people with dementia or what they might gain through the presentation. Two surveys were selected, and permission obtained for their translation. The first survey was *KIDS*, the acronym for the *Kids Insight into Dementia Survey* (Baker 2018a; Overgaauw et al. 2017; see Baker et al. 2018b for a review of its psychometric properties). This Australian study was designed “as a tool to measure children’s insight into dementia, and to evaluate dementia education initiatives targeting the youth” (Baker et al. 2018a: 953). The tool includes a brief scenario about a 75-year-old woman with dementia and uses a 5-point Likert scale designed to measure in fourteen questions if and how strongly the respondent aligns with assigning personhood to a person with dementia, stigmatizes the person, or understands/has knowledge about several aspects of the condition. The second survey, *EmQue-CA*, or Empathy Questionnaire for Children and Adolescents, presents respondents with a series of statements and asks them to rate each statement as not true – somewhat true – or true (Overgaauw et al. 2017: 3). Statements fall into three areas: affective empathy, such as when you feel happy or sad keyed to another’s feelings; cognitive empathy or understanding why someone acts or feels the way they do; and intention to offer comfort. Different versions of the *EmQue-CA* contain different numbers of items; the version used in the present study contained 18 statements.

After greeting students, the two surveys were administered. The educational component was a roughly 40-minute, thirteen-slide Power Point presentation, emphasizing medical information. Its contents were: Introduction [with video a “Grandpa forgot about me”]; Differences between dementia and aging; The story of dementia; Drawings of brain with and without dementia; Brain Sickness; Dementia Diagnosis; Early Symptoms [with video b]; Treatment [video c]; and Closing video “I’m Still Me” [video d]. The links to the four short videos in Mandarin can be found here:

- (a) <https://www.youtube.com/watch?v=xF4PPM8yDSw> Taiwan Alzheimer's Disease Association 2012, 4.37 minutes;
- (b) <https://www.youtube.com/watch?v=HtPl-TgTmdw> 2018 Understanding Dementia in 1 Minute-Episode 2. 1.29 minutes;
- (c) https://www.youtube.com/watch?v=mqSLXFfy_Jw 2020 Wise Series [video channel], 1.38 minutes; and
- (d) <https://www.youtube.com/watch?v=9fJ0OmlRQtI> 2020, 4.45 minutes, reposted from shuj.shu.edu.tw/blog/2020/05/25.

Next, the two surveys were re-administered, after which volunteering consented students and adults participated in dementia-focused, semi-structured interviews (Smith 1995) lasting between six and twenty minutes about dementia (students) or teaching about dementia (adults) which Kuo recorded (see Table 1). The second post-test of the two surveys was administered in 6 of the 8 schools after two weeks. The adults represented a range of roles: principals, teachers, school nurses, volunteer moms (a third of whom were foreign brides) and a crossing guard. The results from the KIDS survey presented here are preliminary; any further analysis will be carried out by the second author, Kuo.

Table 1: Questions and prompts for semi-structured interviews.

Questions for children representing grades 3–6	Q1: Who in your family has dementia? Q2: Who told you/when and how did you learn about it? Q3: Describe what the person with dementia does.
Conversational prompts for adults representing varied school-related roles	Q1: What do you think, from the school's standpoint, of seeing students learning about dementia? Q2: How do you think parents will react to this information? Will they be OK with children learning about dementia? Q3: How do we prepare these children to face the coming of a super-high aged society?

The semi-structured interviews, recorded on an Android cellphone, were transcribed using *Transcribear* (transcribear.com) with follow-up review of each transcript against the sound file by a native speaker of Mandarin. To assist analysis by the English-speaking collaborators on the project, whose spoken/written Mandarin was insufficient and because no professionally trained Chinese translator was available, each interview was translated using two automatic machine translation programs. These were DeepL (www.deepl.com), a machine translation program launched in 2017 and Google Translate (translate.google.com), originally launched in 2006: see Croes (2019) for a useful comparison of the two, and

our discussion below. The second author, a native speaker of Mandarin, who has studied at the graduate level in the US, reviewed all the English translations for topical accuracy. The English-speaking collaborators harmonized the versions through post-editing (see Figure 3, below for an example). For adults, the subject of the present discussion by the English-speaking collaborators, the gisted translation of questions and responses was analyzed qualitatively using thematic analysis (Braun and Clarke 2006; Kiger and Varpio 2020). The initial harmonized versions of the Google and DeepL transcripts were produced by the third author. The first and third authors separately read both versions of each of the transcripts through several times and the post-editing process continued until both authors were satisfied with the final harmonized version. Any disagreements were discussed and settled to the satisfaction of all authors. We discuss issues involved with the use of machine translation and gisted interviews below.

3.2 Findings: How the children responded to each survey

3.2.1 Responses to KIDS survey

This survey was administered once before and twice after the brief educational intervention to see if the children changed how they assigned personhood to a person with dementia, stigmatized the person, or understood/had knowledge about several aspects of the condition. Although 301 children completed parts of the tests, only 276 completed the pre-test and both post-tests. Data was removed from the analysis if the child failed to answer more than 3 out of the 14 questions.

The three sections of the KIDS survey had different numbers of questions. The section on *personhood* included questions like ‘I would be happy to be friends with a person with dementia’ (Baker et al. 2018a: 957). There were 5 questions in this section. The section on *stigma* contained 6 questions that covered possible negative reactions to meeting or spending time with someone with dementia. The section on *knowledge* contained 3 questions that covered basic aspects of dementia and its care. Children responded to the questionnaire by marking a 5-point scale with ‘agree a lot’ at one end and ‘disagree a lot’ at the other end: the higher the score the more positive the child’s attitude to a person with dementia (Baker et al. 2018a: 954). An option ‘don’t know/unsure’ was included at the mid-point on the scale to lower the likelihood that children who did not know about dementia would make random guesses (Baker et al. 2018a). If a child ‘agreed a lot’ with all questions the maximum possible score would be 70.

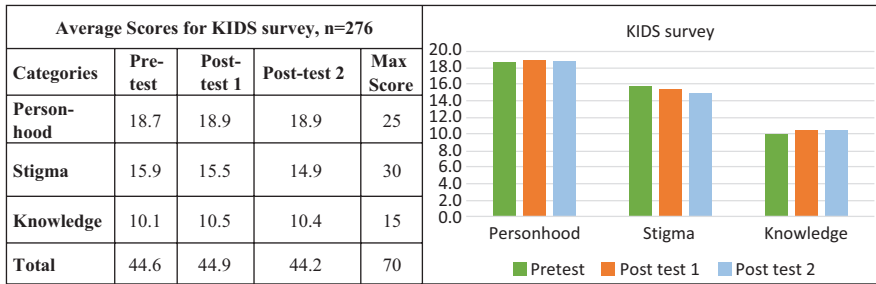


Figure 1: Average scores for KIDS surveys from 276 children.

Figure 1 shows that the Power Point presentation on dementia had little effect on the attitudes measured by the KIDS survey. There were initially very small improvements in two of the categories assessed by the KIDS. After the presentation, in the first post-test, children were slightly more willing to assign personhood to the person with dementia and their knowledge about dementia improved. However, the extent to which they felt dementia attracted Stigma dropped minutely and dropped slightly further in the second post-test. The results for the children's willingness to assign personhood and their knowledge about dementia remained just above initial levels, but the improvements were so small they would not be meaningful in the real world.

3.2.2 Responses to the EmQue-CA survey

This survey was also administered once before and twice after the brief educational intervention to see if the children changed their empathy toward or shared feelings with the person who might have the condition, their knowledge of dementia, or their intention to offer some comfort to the person. The UK version of the EmQue-CA used in this study (<https://www.focusonemotions.nl/empathy-questionnaire>) contained 18 questions divided into three sections: *affective empathy*, *cognitive empathy* and *intention to comfort*. Seven questions assessed the children's affective empathy, 5 assessed their cognitive empathy and 6 assessed their intention to comfort. In this initial analysis, statements that were coded as not true received one point, those that were somewhat true received 2 points and those that were true received three points. The maximum possible score if a child marked all 18 statements as true was 54. Although 301 children completed parts of the tests, only 272 completed the pre-test and both post-tests. Data was removed from the analysis if the child failed to answer more than 3 questions.

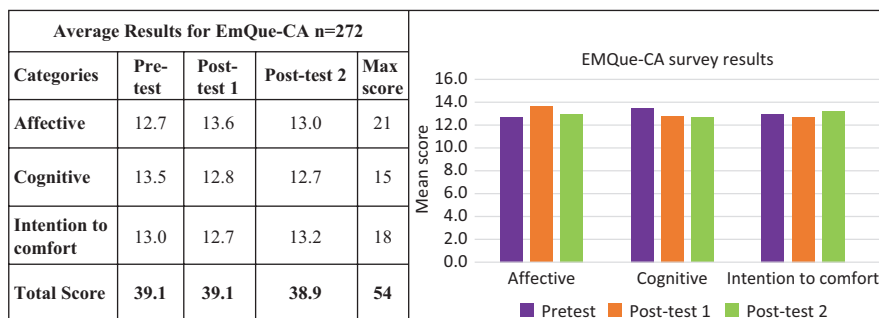


Figure 2: Average results for EmQue-CA surveys from 273 children.

Figure 2 tells a similar story to Figure 1. The children’s scores for affective empathy on the EmQue-CA rose minutely after the Power Point presentation, while the children’s cognitive knowledge and the intention to comfort dropped fractionally. By the time of the second post-test, their affective empathy was still slightly above the initial level and their intention to comfort had risen so it also was slightly above the initial levels. Their cognitive understanding showed a further minute decrease. However, as with the results from the KIDS, both the gains and the subsequent losses are too small to be meaningful. We assume that since the original surveys are designed to be administered to children, the cognitive abilities of children in Taiwan would not be below those of the children from Europe, North and South America, Africa, Asia and Australia on whom the survey was validated (Overgaauw et al. 2017: 4). Such details should be included in proposed analysis (by Kuo) of the children’s interviews. Since the English-speaking authors have not worked directly with Taiwanese grade-schoolers, they chose instead to work exclusively with interviews of adults, and to report only the outcome of the adult surveys.

4 Findings: The use of automatic machine translation (MT)

In choosing to work with the adult interviews as automatically translated, we knew we would be missing some of the Taiwanese sociocultural and sociopragmatic interpersonal context that could surface, for example, in the length of question-prompts or responses, the choices of one or another lexical item, or in their syntactically and culturally cued arrangement of topic elements within utterances.

Because the first and third authors are not competent in Chinese, our analysis can only go so far, as we can only read and post-edit these interviews that

have been automatically or machine translated (MT) into English, using Google Translate and DeepL. Both programs are freely available on the Internet and each is seen as not fully reliable as a translation vehicle for a full transmission of ‘meaning’ when compared to the work of a trained human translator, according to the American Translators Association (ATA 2018). Recent studies of potential uses for MT in the medical field are expanding, such as Soto et al. (2019) on translating clinical texts and health records in Basque and Spanish or Taira et al. (2021) on translating discharge instructions from Emergency Care. However, physician-patient interaction, such as described by Randhawa et al. (2013) and Davis et al. (2019) on discharge instructions is seen as needing supplemental work from professional human translators.

In tracing the relevant history of the development of such translation programs, particularly to keep up with rapid developments in science and technology since the early 1930s, Hutchins (2010) comments that by the time of the first MT conference held at MIT in 1952, scientists assumed that “full automation of good quality translation was a virtual impossibility, and that human intervention either before or after computer processes (known from the beginning as pre- and post-editing respectively) would be essential; some hoped this would be only an interim measure, but most expected that it would always be needed” (Hutchins 2010: 2).

Research in cognitive linguistics, artificial intelligence and especially the development of very large corpora in multiple languages has reinvigorated the field: of current interest is the appropriation for human translators of tools such as Interactive Neural Machine Translation which is a way “to incrementally feed output to translators from neural networks trained on parallel corpora. . . . The translator generates the translation, starts writing, and the NMT system suggests the next fragment” (ATA 2019: 6; see, for example <https://microsoft.github.io/inmt/>). To oversimplify, both this technique and MT plus post-editing work well within most of the Western Indo-European languages, such as English-Spanish/Spanish-English (see Cabrera 2017), but as both Turner et al. (2019) and Jia, Carl and Wang explain, English-Chinese pose “great challenges” (2019: 10). And there is more than one way to handle machine translation: Forcada et al. (2018: 192) explain “Machine translation (MT) applications fall in two main groups: assimilation or **gisting**, and dissemination. Assimilation refers to the use of the raw MT output to make sense of foreign texts. Dissemination refers to the use of the MT output as a draft translation that can be post-edited into a publishable translation.” (**Emphasis** ours.)

Using House’s revised model (House 2015: 65) for comparing a translation with the original text, we can, in our post-edited machine translations, identify the genre (oral interviews), and the field (the elementary education cur-

riculum) and some degree of social interaction. However, we can only infer tenor, or participant relationship, author's provenance and stance, social role relationship, or social attitude. Mode is even more complicated in that we may know the medium to be oral exchange primarily in Mandarin, but we cannot be assured of our analysis of participation. Studies report that in Chinese workplace discourse (Wang 2019: 341) "small talk" is expected as part of developing rapport and establishing positioning in social interactions. And as we demonstrate below, it is used to varying degrees with persons having different relationships to their school and to the interviewer. However, we do not have access by ear or eye to knowing if there are specific Chinese terms of address that were used to signal the interviewer's social equality or superiority of status vis à vis the interviewee, which honorifics might have been used to suggest status of the recipient or which instances of local variation might have signalled something about their relationship.

We were primarily conscious that, in this initial analysis, we needed to be content to work with the gist of what was said, as obtained through machine translation, since we did not know Mandarin well enough to pre-edit the interviews for translation. To illustrate the complexities inherent in any automatic machine translation, we show in Figure 3 the first section of an interview with a teacher, translated automatically by DeepL, and by Google. In order to arrive at the final version we analyzed, we used a two-step process: first we harmonized the DeepL and Google versions and then smoothed the result so that we arrived at the final 'lightly post-edited' version (Shih 2018: 512) which we used for our own gisting. Translation researchers and teachers offer many suggestions on how best to handle post-editing when pre-editing is not possible (see, for example, Koponen et al. 2021). In our own post-editing we followed several of the rules listed in Shih (2018: 512–513). In particular we used the following:

- Use of upper case for the first letter of proper nouns or specialized terms
- Correction of grammatical disagreements (e.g., singular/plurals) and semantic errors
- Change in the word sequence; for example, moving a prepositional phrase from the post-noun position to the pre-noun position
- Restoration of omitted articles
- Use of active voice
- Addition of some words for fluency
- Alteration of incorrect punctuation

We underline some of the main differences between the machine translated versions and our final version in Figure 3. We emphasize again, that it would have

been impossible for the current analysis to have been carried out by the first and third authors without using post-edited gisted machine translation.

The well-known translator, Juliane House (2014: 1) explains two key features in what she sees as the multidisciplinary and intercultural act of translation

Voice 14 DeepL	Voice 14 Google Translate	Voice 14 ‘harmonized’/lightly post-edited
<p>Researcher: I am Guo Jingyi. Thank you for accepting this interview. Can you tell us a little bit about yourself, including your teaching experience, your teaching field, and for you, why you are always on the teaching field?</p> <p>Interviewee: hi, my name is Kang Chui-hua, and I have been serving the children for 28 years. <u>The reason why I do not want to retire</u> is because this job is very attractive to me, because I can still see the smiles of many <u>lovely</u> children every day, and the “good morning’ every day is also a great help.</p> <p>That’s why I feel that I don’t want to leave <u>the field of education</u>.</p> <p>And I also work as a counselor, and I get a great sense of achievement from my counselling work. For me, teaching is not a good job, but it’s a beautiful thing. For example, when I counselled a child, I could tell from the bottom of my heart that the child had grown or changed.</p>	<p>Teacher: Hello, teacher. This is Guo Jingyi. Thank you for accepting our interview. Could you please introduce yourself to the teacher, including your teaching experience and teaching site. For you, why have you always supported the teaching site?</p> <p>Interviewee: Hello, my name is Kang <u>Cuihua</u>. I have been serving for 28 years, and the reason I have been reluctant to quit is because this ministry is very attractive to me, because I can still see the smiles of many cute children every day. Then, <u>“Teacher is morning”</u> every day, which is actually a great help. That’s why I felt that I would not want to leave <u>the current education scene</u>.</p> <p>Then, <u>I also take part in the counseling work</u>, and the sense of accomplishment I get from the counseling work is quite big. <u>So for me, actually speaking of poor teaching work has its beauty</u>. Like the last time I counseled a child, I can feel from my heart that the child has grown or changed, not that the salary you can compare.</p>	<p>Teacher: Hello, teacher. This is Kuo Ching Yi. Thank you for accepting our interview. Can you please tell us a bit about yourself, including your teaching experience and teaching field. For you, why have you always been in the teaching field?</p> <p>Interviewee: Hello, my name is Kang Chui-hua. I have been serving the children for 28 years. And the reason I don’t want to retire is because this job is very attractive to me, because I can see the smiles of many lovely children every day. Then, “Good morning, Teacher” every day, is also a great help. That’s why I feel that I don’t want to leave the field of education.</p> <p>Also, I work as a counselor, and I get a great sense of achievement from my counseling work. So for me, teaching isn’t just a good job, it’s a beautiful thing. Like the last time I counseled a child, I could feel from the bottom of my heart that the child had grown or changed. You can’t just compare the salary.</p>

Figure 3: The first section of an interview with a teacher, translated automatically by DeepL, and by Google, and the lightly post-edited version which used for gisting in this chapter. Underlining indicates some of the main differences between the versions.

<p>My feeling like this. Will I still be doing this job? I don't dare to guarantee that I will be able to continue, because we have a mother who is mentally retarded, and she may take up a lot of my thoughts. Before that, I applied for day care, but I felt that the government was not <u>cool enough</u> to set up day care. The government doesn't seem to be aware of this, so when I tried to help my mom apply for daycare, I was told no matter how many places I tried, they all turned me down because they were full. For an elderly person <u>who has just lost his or her mind</u>, if day care is available, he or she can go back to the family of origin at night and interact with the family, which <u>may alleviate his or her dementia</u>.</p>	<p>My feeling is this. Will I continue to hold this job? I don't dare to vouch for it, <u>because there is a demented mother in our family, and I can share a lot of my thoughts there</u>. Fortunately, there are nursing centers that can be entrusted, but I still think it's not enough. I hope my mother lives in Beside me. Before that, I applied for day care, and I think the government still has too few cool points on day care. My mother lives in Yancheng District, Kaohsiung City. There are mostly elderly people in Yancheng District. The government <u>doesn't seem to see this</u>. When I want to help my mother apply for daycare, <u>I have refused as many as I encountered</u>. Because it's full. For an elderly person <u>who has just demented</u>, if he can go to day care, return to his native family at night, and possibly interact with his family, <u>his dementia may slow down</u></p>	<p>My concern is this. Will I continue to hold this job? I don't dare guarantee it, because we have a mother with dementia, and she takes up a lot of my time. <u>Fortunately, there are nursing centers that can be trusted, but I still think it's not enough. I hope my mother lives in, beside me</u>. Before that, I applied for day care, but I felt the government <u>wasn't aware enough</u> to set up day care. My mother lives in Yancheng District, Kaohsiung City. There are mostly elderly people in Yancheng District. The government doesn't seem to be aware of this. When I tried to help my mother apply for daycare, no matter how many places I tried, they all turned me down because they were full. For an elderly person who is getting dementia, if they can go to day care, and go back to their family at night, and possibly interact with the family, the dementia may slow down.</p>
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Figure 3 (continued)

“the source text with its linguistic-stylistic-aesthetic features that belong to the norms of usage holding in the source lingua-cultural community [and] the linguistic-stylistic-aesthetic norms of the target language.” Her explanation makes an investigation of one or both sets of norms mandatory; such investigation frequently leads to further exploration via pragmatics. It is no surprise, then, to see the appearance of a recent Routledge handbook in its series on Translating and Interpreting: Tipton and Desilla’s 2019 collection of 22 chapters for *The Routledge Handbook of Translation and Pragmatics*. The Introduction identifies several “features of linguistic pragmatics and their treatment in intercultural and interlingual communication” (p. 1), including the emphasis from Verschueren (2017) on the significant differences in language use between Western

and “non-Western” cultures and societies (p. 2). In a subsequent chapter, corpus linguist Bernd Meyer reminds us that the qualitative approaches are more frequent in pragmatic studies which “deal with language use in different social contexts and the ways in which language is shaped by, and used to shape, the organisation of social life” (p. 76). We find this description congruent with that of Locher (2013: 176) as she explains relational work in interpersonal pragmatics, a perspective which helps to interpret the interpersonal relationships in the interviews with the Taiwanese adults connected to the schools: relationships are “dynamic constructs that emerge through interaction in situated contexts, relative to situated norms.”

Each of the interviews is between the second author and a member of the school administration, or a teacher or nurse, or with volunteer classroom mothers. She must develop a relationship of some kind with each of these previously unknown people as she goes along in order to establish enough trust and reciprocity to request and record something of their opinions. In that sense, these interviews, collected in Mandarin, take on a ritual aspect framed by the interviewer’s self-introductions (see Kádár and House 2020: 143: “‘Ritual frame’ refers to a cluster of standard situations in which rights and obligations prevail, and one is expected to follow these rights and obligations to maintain one’s sacred face (Goffman 1967)”).

These are face-to-face interviews with conversational tone, usually between two persons. The adults interviewed fell into three groups: people whose social status as administrators would be seen as higher than the interviewer (principals and directors), classroom teachers and school nurses whose status could be considered equal to the interviewer since she was also a teacher; and classroom mothers who could see themselves as of lower social status than the interviewer. The social relationships were indicated by the length of the leadups to the various questions. The second author typically used lengthy leadups with the principals and directors, slightly shorter leadups to nurses and teachers and brief leadups to classroom mothers. The interviews incorporated questions soliciting opinions about educational and cultural approaches to the elementary school curriculum and whether it would be appropriate to introduce dementia education into this curriculum.

The length of the introductory leadup allows the interviewer to announce the forthcoming questions concerning dementia education in a way that validates the interviewer’s right to request information in this local situation, often by affiliation with the shared field of education, and offer some praise to the interviewee. The interviewer asked the interviewees to introduce themselves and this allowed her to build on the interviewees’ own words in the introductions to the questions. The leadups have several functions. They are a low-key compliment to the

worth of the interviewee, which suggests the interviewer has paid full attention to the interviewee, thereby underscoring her worth as an interviewer. They also establish the interviewer's expectation of a commitment from the interviewee to provide some answers in response. Figure 4 shows the way the interviewer approached one of the directors. Bold text indicates how the interviewer used the Director's own words in her introductions to the questions.

I: Director X, thank you for accepting our interview. Before answering these three interview questions, can I first ask you, Director, to introduce some of your own educational experience and how long you have been teaching?

[Biographical overview from Director]

I: Director, **you just mentioned that you have been teaching for 29 years**. You have been in the education scene for so long and **I admire your teaching experience very much**. You said that you entered this job after graduating from university 29 years ago, and so **what are your observations on the changes in the whole society and changes in education?**

[Discussion by Director on social change and parental expectations of education]

I: *[after 5 uninterrupted utterances repeating and elaborating on the Director's discussion of parents]*. **What do you think parents would think** about their children coming to receive education on issues related to the elderly, or education about dementia?

Figure 4: Introduction to the first question, from Interview 25. I: is the interviewer.

5 Discussion: Inferences from responses to the gists of the questions in the adult interviews

5.1 Question 1

Question 1 asked if the respondent approved of teaching about dementia in elementary schools. Twenty-six of the 29 adult respondents said yes; three had some reservations or concerns, and no-one disapproved. People with different school-related roles presented slightly different reasons for endorsing the idea

or suggestions for its implementation. The twelve volunteer classroom mothers and grandmothers tended to present personal reminiscences about dementia in the family or neighborhood and to encourage school-sponsored interaction with grandparents. They were also concerned with children's family experiences which could affect potential readiness for the information. In the extracts, three dots indicate that material (typically, affirmations and repetitions of key words by the interviewer) has been omitted and a dash indicates a pause (often as interviewees reformulates their responses). As Classroom Mother 75 put it,

- (1) *I would suggest a gradual approach, because I feel that children nowadays are relatively unfamiliar with the environment of three generations and four generations living under one roof, because we are all now in small family systems.*

School nurses focused on the hows and the whys for dementia education in the schools: Nurse 21 felt "they will be less likely to fear it" and Nurse 35 said it would be needed because of the increase in older people. Nurses 36 and 52 felt that the content of the presentation should be adjusted to the age of the students. As Nurse 52 said,

- (2) *The first grade may be too young, they will be more confused about the situation. Middle grades can be slow, that is, your content should be simple and easy to understand.*

Not surprisingly, the five school administrators (principals and directors) focused on how best to insert additional teaching materials into an already busy curriculum. Four of them were solidly committed to the idea, and one had reservations. Administrator 18 talked about how technology and popular media could help:

- (3) *I think it's quite good to do some supplementary work, or even provide some cartoons or online animated learning. That's a good approach. . . . I want to include it in the formal curriculum, but kids only have 8 hours in school and it's getting shorter and shorter.*

Administrator 11 offered several ideas for how dementia education at the elementary level might be implemented and explained why s/he thought dementia education was needed. In addition to embedding dementia education within the curriculum for family education, Administrator 11 wanted the curriculum adapted to grade levels and if possible, for it to involve experiential learning.

- (4) *I think that in the future, similar courses can also be done online in flexible courses. Another thing is that I think it's positive for the students to receive such a message and to understand the related knowledge. Because they can observe and pay attention to the people around them who have similar symptoms or are at risk of developing them, and then can provide them with accurate information so that they can go to the doctor early. . . . I think this course will more or less help students learn how to interact with their elders. . . . I think this part of dementia can also be integrated into the topic of our family education, because family education is also very important for students.*

5.2 Question 2

Looking at interpersonal relationships within Taiwanese society, even within the confines of gisted translation, explains some issues with asking and answering the second author's Question 2: "How do you think parents will react to this information? Will they be OK with children learning about dementia?" Asking such a direct question in Mandarin could be pragmatically risky in terms of (im) politeness (see Matsumoto 1988 for a description of the pragmatics of similar situations in Japan). However, from an emerging third wave perspective, work in the area of pragmatics has been overly based on the work of Brown and Levinson (1987) who come from what is seen as an exclusively Western, individualistic and Anglo-centric perspective. Jia and Yang (2021: 1) explain that recent work in pragmatics "emancipates" Chinese research "and instead, constructs theories of (im) politeness based on Chinese socio-cultural values." Hints of those values surface in responses to Question 2. As a certified elementary teacher, Kuo could establish social relationships similar to those of an extended family with the principals, the directors, the nurses and the teachers. In their interviews, she can ask them a direct question and she can expect a direct answer without harming the temporary social relationships that they have established. And that is what happens. Two principals and a grandfather now serving as a volunteer crossing guard identify scenarios for problems with obtaining full parental assent, and only one interviewee, a volunteer classroom mother, does not answer the question in any way. Out of the 29 interviewees, 28 responded: in general, they thought parents could be persuaded to accept dementia education despite potential complications.

It is not surprising to obtain direct responses in the gisted translations from the principals and directors. Their business is to know what parents might think about changes to the curriculum and how best to adjust education about dementia to specific age groups and into which area of the curriculum dementia educa-

tion might best fit. Given that Kuo had done graduate work, they could be direct and professional in their analyses. As Principal 18 commented,

- (5) *I believe that most parents are positive, but there are – some parents are more likely to say that this will – will bring them bad luck, there will be quite a few with this, this kind of logic.*

Three of the four nurses had teaching experience, so they are also knowledgeable about the curriculum and probable parent opinions, as are the teachers. This is not the case with the interviews with the volunteer classroom mothers. Kuo is not a mother so she cannot claim that to use in building a social relationship. The topic is difficult to handle with the classroom volunteer mothers: they cannot be expected to know what parents at the school might think and will be reluctant to speak for parents other than in their own families. They may not wish to explain that they are not interested in or knowledgeable about dementia, knowing she has just given a presentation on it in ‘their’ school. Accordingly, her interview must be more conversational and must be more indirect so that she can establish a more intimate social relationship so that everyone can enjoy good interpersonal interaction. The mothers who are foreign brides are more direct and more straightforward in offering critical comments about the school and about Taiwanese education.

For example, Volunteer Father 63 said

- (6) *I always told the teacher that you have to cooperate with the parents and communicate – parents and teachers have to cooperate with each other.*

And Volunteer Classroom Mother 75 who was a foreign bride said

- (7) *The first response could be that it is too early, because it will be too difficult for the child . . . I think this is necessary.*

Re-evaluations of Brown and Levinson’s model of politeness (1987), especially by European and Chinese researchers in pragmatics “have resulted in significant paradigm shifts towards relation-based theories of pragmatics and social interaction over the last two decades” (Ye 2019: 1; cf Kádár 2019; Kádár and Haugh 2013; Hanks, Ide and Katagiri 2009) in order to look at the ‘society of intimates’ in Chinese social interaction, and the establishment of interdependence in Japanese interaction (Matsumoto 1988). The interpersonal interactions concerning Question 2 underscore the importance of looking at features of interpersonal work – a shift in cultural pragmatics – even when such features may be blurred

by translation technology. For example, four of the classroom mothers are international brides who offer stronger views about filial piety than the other classroom mothers. They are asked about these views and about teaching children in what appears to be a slightly different way from interactions with the Taiwanese mothers. That is, the temporary relationship between the interviewer and these women is defined primarily by their not being Taiwanese, and the interpersonal relationship is established differently as the interviewer in her leadup offers nothing to hold in common with the interviewee.

The leadup consists of a couple of sentences such as this with volunteer Classroom Mother 33:

- (8) *I: The main purpose of this interview is to understand, that is, if we tell you from the standpoint of an educator today, we want to teach children about things related to the elderly, such as dementia. What is your opinion?*

Once the foreign mother reveals how long she has been in Taiwan, and volunteers their home country's name, the interviewer may expand the purpose with a little small talk.

- (9) *I: Then you say you are from Vietnam, then I want to know what you would think if your friend in Taiwan said that she heard the teacher tell her that they want to teach your children something related to your elders, specifically dementia which is a disease of the brain. Would you want your children to receive such an education? (Classroom Mother 32).*

There does not seem to be the same degree of concern for the social status of the interviewee as signaled by the length of the leadup to the questioning, and the questioning itself is keyed to the interviewee's otherness and possible lack of understanding of Taiwanese elementary curriculum. The foreign brides may not be expected to establish a temporary intimacy in their interaction. These abbreviated leadups could be viewed from a Western perspective as being less polite than the longer leadups to the Taiwanese classroom mothers. However, following the lead of current third wave pragmatics researchers on relationships and interpersonal interaction in Chinese, such as Gu (1990; cf. Kádár 2018) we would be reluctant to claim that one or another feature we discuss here is a solid example of (im)politeness in workplace discourse focused on the possibility of children learning about dementia in schools.

5.3 Question 3 – and its link to a larger and political issue

Question 3 asked “How do we now prepare children for entering a super-aged society?” To understand the content of the responses, we must turn to studies in gerontology and economics. Interpersonal interaction clearly differed between school personnel and volunteer mothers. Principals, directors, and nurses responded to this topic with an orientation to how they could make students – and parents – aware of the topic through the curriculum and try to “improve” the situation. For example, Principal 11 focused on the need for experiential learning:

- (10) *if you have the opportunity, take them to a nearby nursing home to interact with these elderly people. I think this kind of experiential learning will impress them.*

and Principal 19 recommended intergenerational education:

- (11) *An ideal school of the future, because of the declining birthrate and the transformation of schools, I think young and old should learn this matter together. . . . the more seniors you have, the less children you have – the fewer children so grandpa and grandma bring their children to class, while the dad and mom go to work, right, then children go to the elementary school, and then that grandpa and grandma go to the senior center.*

Nurses were even more straightforward in emphasizing needs for self-reliance. From Nurse 21:

- (12) *Taiwan is now an elderly society, and it will be a great burden for young people to take care of the elderly in the future I think the people’s future now is probably fewer children, and then more elderly and so from now on, the young can’t rely on future care by their children. I think the basic point is you have to be able to support yourselves.*

Nurse 52 shared her emotion:

- (13) *when we are old, we really have to rely on ourselves. . . . I’m very scared. I don’t dare to expect them [to look after me when I am old]. I can only rely on myself. When I see them like that, I don’t dare to expect them. I often cry and cry.*

However, the clearest differentiation between the kinds of interpersonal interactions with the interviewer was between school staff and mothers, in their choice of whether to respond to comments about the 2000-year-old emphasis on filial

piety. Kuo introduced this construct from a “we both believe in this” stance, as in: “*because we are still in the Asian traditional Confucian filial piety culture.*” She reinforced the topic from this perspective more than once in all but two of the interviews. One administrator did not reply to any comments about filial piety; the other four objected in various ways to its use as a framework for teaching about aging or dementia, thinking dementia education would be best accepted in the framework for family education.

Half of the school nurses, such as Nurse 21, commented that “I think this concept is gradually changing;” the others were “I am 100% dedicated to that” (Nurse 35). Like nurses, teachers were split in their opinions: Teacher 15 was direct and introduced a more political issue which is unusual in interpersonal interaction for a school interview:

- (14) *even if it's not under the framework of the Confucian tradition of filial piety, and the final decision is to send them to care, then you must have sufficient financial security and you must be prepared. What's even more difficult is that there is no way to guarantee their safety . . . Then you see that this issue [filial piety] involves gender equality. Why does the daughter-in-law have to resign and stay at home to take care of the person?*

The opposite opinion can be represented by Teacher 34 who said: “*I hope to really implement it in every child's life*” or Volunteer Classroom Mother 62 who said “*You are very afraid of letting your children know how much money you have. If your children are filial to you, then you are blessed.*”

6 Conclusion

In this chapter, we have started to explore dementia knowledge among elementary school children, focusing on a sample of children in Taiwan together with adults' attitudes towards explicit teaching about dementia within the school curriculum. Because of the projected increase in the number of people living with dementia, knowledge about the disease is becoming increasingly important for people throughout the world. When surveys are carried out, they usually focus on adults or adolescents, though Fuh, Liu and Jiang (2005) did include children as young as 10. The present study lowers the age to 8. The results show that a single Power Point presentation about dementia was not sufficient to make lasting changes to children's attitudes towards people with dementia as measured by the EmQue-CA survey or their knowledge about dementia as measured by the KIDS survey. The

adults interviewed included school directors, principals, teachers and nurses as well as parents and grandparents. Most supported the inclusion of education about dementia at school though some were concerned about how it would fit into the already crowded curriculum. No one opposed the idea. Again, all but one of the interviewees thought parents would find such material acceptable. A final question asked how children could be prepared for living in Taiwan's super-aged society. This received mixed responses. Most of the adults thought that parents could no longer rely on traditional Confucian values of filial piety to ensure that they were later cared for by their children. This point was made particularly strongly by the foreign brides who were born in Vietnam and came to Taiwan later in life. They considered that Vietnam's culture adhered much more to traditional values than did Taiwan's. They attributed the difference to the economic differences between the two societies. Several of the adults interviewed emphasized the importance of people needing to be able to look after themselves as they aged.

In order to carry out the analysis of the interviews which were in Taiwanese Mandarin Chinese, the first and third authors (who do not speak or read Mandarin) relied on automatic Machine Translations of the interviews. We used two different translation softwares, DeepL and Google Translate, and post-edited the resulting outputs. In effect, the resulting translations provided the gists of the interviews. This process meant that some of the details (such as specific word choice or use of honorifics: see Gu 1990) was not available for analysis from an interpersonal pragmatics perspective. This analysis has, however, demonstrated that, despite their limitations, such translations, particularly when pre- or post-edited, allow worthwhile analyses of interpersonal and sociocultural issues.

Providing care for the aged, and more specifically for those with dementia, is by no means a simple issue anywhere, and answers dare not be simplistic. This exploratory study has attempted to illustrate a part of the complexity of aging care in what is rapidly becoming the country with the largest aged population. As with the educational presentation, the issues will need to be presented multiple times and adjusted to multiple populations.

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