



Changing Perceptions of Traditionally Gendered Occupations in Taiwan

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Abstract: This study concentrated on traditionally gendered occupations ascribed by Taiwanese English speakers. The main aim was to determine whether university students continue to assign gender to specific occupational roles. Hence, a forty-year-old riddle was used as a warm-up activity in two separate English classes to elicit responses. This method was an extension of a previous study in 2012, and the correct answer required the participants to state that the doctor was the son's mother. The results collected from this study were then compared to those in 2012 to determine if there was a change in gender ascription. In a sample of 50 university English majors, aged 18-20, it was found that a greater majority of male Taiwanese English speakers continued to designate the doctor as a male. This result was consistent with the 2012 study. Alternatively, more female Taiwanese English speakers indicated the doctor to be female, and this result increased significantly from the 2012 study. To determine if these findings were significant, the data was analyzed using a Log-linear model. After comparing the results obtained in 2012 and 2019, the increase of correct answers in 2019 was found to be significant. This suggests that perceptions of traditionally gendered occupational roles in Taiwan are in decline.

1. INTRODUCTION

1.1. Background

Examining the connection between thought and the professional roles ascribed to men and women through language (Eagly, Nater, Miller, Kaufmann and Sczesny) has gained popularity in recent years. One reason for this may be due to an increasing presence of women in the work force, one which is beginning to equate that of men in the United States. In 2019, the American Psychological Association reported that women's labor force participation has increased from 32% in 1950 to 57% in 2018, while men's participation has fallen from 82% to 69%. These statistics were coupled with the fact that more women are achieving a higher education, while fewer men are doing the same

In 2019, Eagly theorized that this transformation is a result of the changing roles that men and women are assuming in America. This study therefore aimed to determine whether a similar pattern was occurring in Taiwan. Given that equal access to education and employment opportunities are currently the norm, it would seem that a similar trend exists regarding changing occupational perceptions. In the article, "Taiwan Leads the Way in Advancing Gender Equality in Asia", it was stated that in 2.51 million households, 30%, counted women as the primary breadwinner in 2016, up from 1.69 million a decade before (Taiwan News, 2018). To add to this, the Taiwan Executive Yuan Directorate reported in 2018 that gender equality has been achieved through more opportunities for women to assume decision-making roles. It was also stated in "Gender at a Glance" that at the end of 2016, females comprised more than half of the junior rank civil servant positions, and as members of the Control Yuan in Taiwan. The article went on to confirm that females occupied 40% of the positions in the Examination Yuan and represent one third of the Constitutional Court and political appointees. These figures have increased by 2.4% since 2013 and there has been a 0.5% decrease in the gender gap. Hence, if more women are becoming the main source of income and serving in higher-level roles, it would seem that new perceptions are being formed regarding traditional occupations.

1.2. Perceptions of Prototypical Job Holders

The social role theory states that people tend to make inferences about social groups according to social norms, such as traditional occupational roles (Eagly and Koenig, 2014). Hence, when males or

females have been overrepresented in specific jobs, it may be assumed that gender stereotypes will be ascribed. For instance, women have often been seen as nurses and men doctors; however, there has been an increase of women practicing medicine in Taiwan. Huang stated in 2014 that the number of women entering the medical field increased from 17.9% in 1996 to 26.6% in 2014. It would seem that more people are visiting female doctors than those in the past, and this experience might influence the language used when discussing doctors.

However, there is empirical support that demonstrates a correspondence between the proportion of males and females working in an occupation and the ascription of gender attributed to the prototypical job holder (Cejka and Eagly, 1999, Crawley, 2014 and Eagly and Koenig, 2014). If a specific job has been previously dominated by males, more people might believe that they are the only ones suitable for this type of work. Support for this idea has been evidenced in studies by Crawley in 2014, where the percentages of males and females who worked in different occupations were differentiated. The results indicated that the participants were more likely to indicate that a university degree was needed if the occupation had mainly been occupied by men. This would indicate that higher-level positions were viewed as male-centered positions, while those where a university education was not needed were suitable for females. In relation to this study, becoming a doctor had been deemed suitable for males in Taiwan, as a majority of the doctors were men. This would make the job unsuitable for females in the eyes of the general population. However, given the changing occupational trends, perceptions of this ideology may be transforming.

1.3. Previous Research on Language and Thought

When attempting to comprehend the innate perceptions of distinct cultures, it is necessary to first consider the earliest research on language and thought. German philosopher Johann Gottfried Herder contended that thought is defined by language means; therefore, utterances from speakers of different languages offer unique views of the world in which we live. Herder claimed, “language gives the whole of knowledge its limits and contours” and “thinking is almost nothing more than speaking” (as cited in Leavitt, 2010, p.78). In this respect, language is a mode of thinking for a particular group of people. Herder thus described language as the ultimate source for the expression of thought. People are therefore not able to produce a notion if it is not already present in the language they speak. This idea may be linked to automatically connecting gendered vocabulary choices with occupational roles. For example, when trying to solve the riddle in this study, several participants referred to the doctor as he, him, father, father-in-law or step-father.

Humboldt additionally equated language and thought in a hypothesis known as, the ‘Weltanschauung’ (world-view) hypothesis. He specifically stated, “Language is by no means a mere means of communication, but the mirror of the mind and of the world view of the speaker (2000, p. 19). The idea of a ‘world view’ supports Herder’s notion by claiming that speakers of one language may view the world differently than speakers of another language. In addition, if language is a mirror the mind, then we could assume that the language choices indicate the inner most thoughts. Hence, language use has the ability to offer a direct view of how others determine acceptable occupational roles for men and women.

A study of language, culture, and gender roles must also consider linguistic determinism (Humboldt), and linguistic relativism, (Boas). According to Saeed (2000), linguistic determinism similarly claims that, “people’s thoughts are determined by the categories available to them in their language (p. 41). There are two forms of linguistic determinism, strong and weak. The strong form asserts that thoughts are determined by language, and this is the foundation upon which Humboldt built his theories. The weak form, also termed linguistic relativism, claims that thoughts are affected by language, a theory put forth by Boas. B. J. Whorf extended this position in the 1930s by stating, “We cut nature up, organize it into concepts and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way, an agreement that holds throughout our speech community and is codified in the patterns of our language” (Carroll 1956, pp. 212-14). Whorf analyzed specific linguistic structures, proposed mechanisms of influence, and provided demonstrations of these influences on belief and behavior. He also theorized that languages vary considerably in basic distinctions and in the assemblage of categories into a system of reference. Furthermore, these categories may be used as guides in habitual thought. When speakers attempt to interpret an experience in terms of a category available in their language, they automatically include related meanings in that particular category. Speakers tend to regard these meanings as being intrinsic

to the original experience rather than being a product of linguistic analogy. Therefore, language may not blind speakers to some obvious reality. Instead, it suggests that associations are not necessarily a result of experience. In this instance, linguistic shaping forces may affect everyday habitual thought. If given the opportunity to speak in a metalinguistic sense, speakers of a second language may then recognize their natural gender ascriptions. Upon providing the correct answer in this study, Taiwanese university students became aware of their gendered perceptions of occupational roles.

Since the Sapir-Whorf hypothesis essentially contends that linguistic patterns guide our thoughts, these patterns may be verbalized with or without an actual experience. In regards to this study, it may have been logical to describe a doctor as a male in the past, as most students had consulted male doctors at some point in their lives. Thus, seeing a female doctor would have been a rare occurrence. However, visiting a female doctor is currently quite common, yet some people continue to unconsciously ascribe the male gender to this role.

1.4. Language Use and Gender Ascription

One of the prominent topics in the field of Sociolinguistics concentrates on vocabulary usage and its relation to the occupation roles of the men and women. In this respect, gender roles are evident in every society; thus, there tends to be some aspect of ordering where certain roles are assigned to particular genders. As Eckert and McConnell-Ginet (2003) contended, “The force of gender categories in every society makes it impossible for us to move through our lives in a nongendered way and impossible not to behave in a way that brings out gendered behavior in others” (p. 50). It could therefore be deduced that some occupational roles are deemed appropriate for men, while others are thought to be more appropriate for women.

In reference to suitable occupational roles, one of the most notable examples involved Margaret Thatcher. During her term as Prime Minister of England, she was advised to “speak more like a man in order to fill a position previously filled only by men” (Wardhaugh, 2010, p. 337). Since Margaret’s voice did not match those of previous Prime Ministers, a post held solely by males, she was advised to “lower her pitch, diminish her range, speak more slowly and adopt a more authoritative delivery to make herself heard” (Wardhaugh, 2010, p. 337). This occurrence evidences the strength of male characteristics to dominate a position, even when it is held by a female.

With current changes in occupational roles, there is now a greater effort to use neutral language when referring to specific jobs. For example, firefighter, police officer, flight attendant, mail carrier and actor are now more appropriate than fireman, policeman, stewardess, mailman, and actress. The significance of these changes lies in the idea that language does reflect changes in social structures. In this case, doctors and nurses can be men or women. However, it could be debated whether or not changes in vocabulary usage actually change traditional perceptions. As Romaine (1999) concluded, “Attitudes toward gender equality did not match language usage. Those who had adopted more gender-inclusive language did not necessarily have a more liberal view of gender inequalities in language” (pp. 312-313). These words have continued to fuel further investigations of the gender-related riddle.

2. PURPOSE OF THE STUDY

If language is ‘the mirror of the mind and the worldview of the speaker’, Humboldt 2000, then it is worth investigating if the utterances of Taiwanese English speakers are demonstrating any changes in ascribed occupational roles. If these speakers indicate gender preferences through language use, it could lend a direct hand in comprehending the current perceptions of the Taiwanese university students. Thus, this extended a previous study on gender ascription to document and analyze the answers given.

The results of the 2012 study demonstrated how language, as a representation traditionally gendered occupations, revealed certain attitudes. It was found that more female Taiwanese English speakers were able to solve the riddle, which required stating that the doctor was the son’s mother. More importantly, none of the male Taiwanese English speakers were able to solve the riddle at that time. The current study replicated the 2012 study to note any changes in occupational perceptions. Given that more women are assuming powerful professional roles in Taiwan, it would seem that gender ascription would change according to this transformation. This would then offer support for Humboldt’s theory concerning a view of the world mirrored through language use. In other words, as our world changes, it would seem that language is altered to meet these changes.

3. MATERIALS AND METHODS

This extended study examined the answers of 75 freshman university students, aged 18-22. Since the original number of participants was fifty females and twenty-five males, twenty-five of the female responses were either randomly discarded or discarded if they had previously heard the riddle. This helped to equate the male to female ratio. Thus, the focus group consisted of twenty-five females and twenty-five males. Furthermore, all of the participants were English majors enrolled at a university in Taiwan.

A forty-year old riddle (see Appendix 1) was used as a warm-up activity to elicit answers from the participants. The riddle was told verbally in an English Conversation class and was justified as being a problem-solving exercise. After the instructor explained the activity and told the riddle orally, the students were given five minutes to think about their answer and then write in on a piece of paper. Thereafter, the papers were collected, the riddle was discussed and the correct answer was given.

4. RESULTS

In 2012 and 2019 (Tables 1 and 2), answers were calculated as mean averages for those who were able to solve the riddle. This provided the basis to run additional analysis and determine if there was a significant difference between these figures.

Table1: 2012 Mean Percentages of those able to solve the Riddle

Gender	Correct Answers Obtained
Female	18% (2 out of 11)
Male	0% (0 out of 14)
Total	8% (2 out of 25)

Table2: 2019 Mean Percentages of those able to solve the Riddle

Gender	Correct Answers Obtained
Female	44% (11 out of 25)
Male	28% (7 out of 25)
Total	36% (18 out of 50)

A statistical analysis was run on the mean averages collected from the gender related riddle in 2012 and 2019. The tables below illustrate the process for determining whether or not there was any significance in the final analysis. First, the data was analyzed using a Log-linear model. Table 3 shows the frequency distribution of year, gender, and answers received.

Table3: Frequency Distribution

Cell Counts and Residuals								
Year	Gender	Answer	Observed		Expected		Residuals	Std. Residuals
			Count	%	Count	%		
2012	man	yes	.000	0.0%	1.000	1.3%	-1.000	-1.000
		no	14.000	18.7%	11.500	15.3%	2.500	.737
	woman	yes	2.000	2.7%	1.000	1.3%	1.000	1.000
		no	9.000	12.0%	11.500	15.3%	-2.500	-.737
2019	man	yes	7.000	9.3%	9.000	12.0%	-2.000	-.667
		no	18.000	24.0%	16.000	21.3%	2.000	.500
	woman	yes	11.000	14.7%	9.000	12.0%	2.000	.667
		no	14.000	18.7%	16.000	21.3%	-2.000	-.500

Table 4 details the summary of the steps. All factors are displayed, and these include the year, gender, and answer, along with the main effect and interaction effect. The results are listed from the highest to the lowest levels, while year*answer was chosen as the model.

Table4: Step Summary

Step Summary						
Step ^a		Effects	Chi-Square ^c	df	Sig.	Number of Iteractions
0	Generating Class ^b	year*gender*answer	.000	0	.	
	Deleted Effect	1 year*gender*answer	1.957	1	.162	3
1	Generating Class ^b	year*gender, year*answer, gender*answer	1.957	1	.162	
	Deleted Effect	1 year*gender	.002	1	.966	2
		2 year*answer	7.468	1	.006	2

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		3	gender*answer	2.948	1	.086	2
2	Generating Class ^b		year*answer, gender*answer	1.959	2	.376	
	Deleted Effect	1	year*answer	7.707	1	.006	2
2		gender*answer	3.187	1	.074	2	
3	Generating Class ^b		year*answer, gender	5.146	3	.161	
	Deleted Effect	1	year*answer	7.707	1	.006	2
2		gender	.120	1	.729	2	
4	Generating Class ^b		year*answer	5.266	4	.261	
	Deleted Effect	1	year*answer	7.707	1	.006	2
5	Generating Class ^b		year*answer	5.266	4	.261	

- At each step, the effect with the largest significance level for the Likelihood Ratio Change is deleted, provided the significance level was larger than .050.
- Statistics are displayed for the best model at each step after step 0.
- For 'Deleted Effect', this is the change in the Chi-Square after the effect is deleted from the model.

Thereafter, a Goodness-of-Fit test was run, as displayed in Table 5. This demonstrates the strength of the fit. The p value of $0.261 > 0.05$ indicates that the fit is good.

Table5: Goodness-of-Fit-Test

Goodness-of-Fit Tests			
	Chi-Square	df	Sig.
Likelihood Ratio	5.266	4	.261
Pearson	4.476	4	.345

A log-linear model analysis was then performed again, choosing year*answer. Table 6 shows that when [year = 1] * [answer = 1], there was a significant difference between the results obtained in 2012 and those obtained in 2019.

Table6: Parameter Estimates

Parameter Estimates ^{b,c}						
Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Constant	3.481	.175	19.846	.000	3.137	3.825
[year = 1]	-.324	.271	-1.197	.231	-.855	.206
[year = 2]	0 ^a	.	.	.	.	.
[answer = 1]	-.563	.291	-1.935	.053	-1.134	.007
[answer = 2]	0 ^a	.	.	.	.	.
[year = 1] * [answer = 1]	-1.677	.726	-2.310	.021	-3.101	-.254

- This parameter is set to zero because it is redundant.
- Model: Poisson
- Design: Constant + year + answer + year * answer

Finally, since year*answer showed significance, the data was checked to see whether the observed value and expected values also showed significance. Table 7 demonstrates that in 2012, the number of correct answers to the riddle were significantly less than expected.

Table7

	Year1- 2012	Year2- 2019
Correct	-1.867*	1.867
Incorrect	1.867*	-1.867

The results obtained from the statistical analysis clearly show that there was an interaction effect between the answers obtained in 2012 and those in 2019. However, there was no interaction effect found between the answers given by males and females separately. Thus, since the number of correct answers increased in 2019, this would indicate that perceptions of traditionally gendered occupations are changing in Taiwan.

5. DISCUSSION

This extended study examined the responses given by Taiwanese English speakers to a forty-year-old riddle in 2012 and in 2019. The correct answer entailed perceiving the doctor to be a female, the son's

mother. The main aim was to document the language habits associated with occupational gender ascription and to determine if there was a significant change in traditionally gendered perceptions. The number of those being able to solve the riddle was the main point of interest, and the increase in those who were able to deduce the correct answer in 2019 indicates a change in occupational gender ascription.

The mean averages clearly show an overall increase in the answers submitted. In 2012, 18% of the females were able to provide the correct answer to the riddle. However, none of the males were able to do the same. In 2019, 44% of the females and 28% of the males could solve the riddle, indicating an increase in the participants' ability to perceive a female in the role of a doctor. In view of this, statistical analysis was run to determine whether these mean averages were significant.

First, a Log-linear analysis was run on the year, gender and answers received to determine the frequency analysis. Thereafter, a Goodness-of-Fit test was run, to demonstrate the strength of the fit. The p value of $0.261 > 0.05$ indicated that the fit was good. A log-linear model analysis was then performed again, choosing year*answer. When [year = 1] * [answer = 1], there was a significant difference found between the results from 2012 and those in 2019. Finally, since year*answer showed significance, the data was checked to see whether the observed value and expected values also showed significance. Although we do see a significant increase in female and male answers separately, when the mean percentages of both genders were combined, an interaction effect was found. More specifically, in 2012, 8% of the participants were able to solve the riddle, but an overall 36% provided the correct answer in 2019.

When comparing the two studies, the significance lies in the increase of overall correct answers. If spontaneous speech is a 'mirror of the mind' (Humboldt), it could be assumed that traditional occupational gendered perceptions are deteriorating in Taiwan. Here, automatically assuming that doctors are males is currently not the norm, as indicated through language use. According to Sapir, "Language is the medium of expression for a society" (Sapir 1929, p. 207). If we apply this idea to the results of the both studies, we may conclude that the Taiwanese participants are beginning to contemplate habitual thought processes, which are currently equating males and females in occupational roles.

This idea is reinforced by Sapir's claim, "We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation" (Sapir 1929, p. 207). If language habits are a result of social predispositions, then, from the results obtained, we could assume that ascribing the male gender to a powerful role is beginning to fade among university students. Taiwanese English speakers previously assumed that the doctor had to be a male when trying to solve the riddle. This occurrence was frequent even when some students confirmed seeing a female doctor in the past. However, it could be said that current linguistic choices are beginning to overcome those of the past.

In conclusion, Wolfson states, "Sexism in language is not truly systemic in English, but is rather a reflection of the social attitudes of speakers, both male and female" (Wolfson 1989 p. 165). These words help to bring the main aim of the study into perspective. If gender is not inherent in the English language, then the way it is used would indicate the social attitudes of those who speak it. Overall, we could conclude that Taiwanese English speakers are altering their view of a traditionally gendered world. Although perceiving a female as a doctor in 2012 proved difficult, this task became significantly easier in 2019.

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APPENDIX 1

Gender Related Riddle

A father and his son were driving down the road. The car veers off the road and crashes. The father is killed instantly. An ambulance arrives and takes the son to the hospital. The doctor walks into the emergency room and says, “My son!” Who is the doctor?

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