

CHINESE UNIVERSITY OF HONG KONG

**A Cognitive Approach to the Sense of Proper Names**

LIN3102 Semantics

by

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April, 2006

## INTRODUCTION

Proper names have a number of intriguing properties that are not shared by common nouns such as *book*, *apple* or *man*. Syntactically, in many of the world's languages, such as English, German and Hebrew, proper names typically do not and cannot take an article (cf. \*a/the Thomas). They can neither be modified by a numeral (cf. \*one Thomas), or in classifier languages, a classifier (cf. \*yat go siu ming). Morphologically, they typically do not take the plural morpheme (cf. \*Thomas(es)). Semantically, they are typically referential expressions.

However, the most interesting question over proper names seems to be whether they have sense. This controversy has been extensively discussed by semanticists and philosophers. Some people argue that proper names are merely labels assigned arbitrarily to people, places or things. They do not describe the referents like common names do. In other words, they have extension, but not intension. Others argue that proper names are abbreviated descriptions. They are shorthand to designate the sum of all the properties of the referent, or the sum of certain properties, even when there is no referent in the real world at all (cf. *Zeus*).

Cruse hinted a further derivation of the latter view, although he did not explicate it, that proper names can describe *some* of the properties of the referent prototypically, although the reference of the name to a particular referent is not strictly determined by these descriptions. This explains why it is odd to name a girl *John* or *The Old Mill* (Cruse: 2000. 317). This is similar to Searle's view that proper names are vague descriptions in some way.

If proper names are used prototypically to refer to objects that have certain properties, then these properties can be assessed through cognitive tests. The present study, therefore, is interested in evaluating this proposal from a cognitive approach, and argues that proper names do have sense in a vague way. Finally, we will also compare proper names and common nouns and point out their similarities.

## HYPOTHESIS

If proper names have sense, and if we assume that the sense of proper names are descriptive of the properties of the referents in general, instead of a shorthand for all the properties of a particular referent, then we should expect that the sense of a given proper name to be more or less the same to different speakers of the same language. This is obvious because to someone having agoraphobia, the word 'shopping mall' may induce fear and trepidation, but it is hard to argue that "being fearful" is part of the sense of 'shopping mall'. Since language is for communication, the sense of a word has to be agreed on collectively by the speakers, consciously or otherwise.

If we adopt such a view, then it is not hard to explain why we sometimes say things like: *He doesn't look like at all a Cecil*. Because 'Cecil' is not merely a label randomly assigned to a person, but contains descriptive contents in its sense. In other words, 'Cecil' denotes prototypically people

with certain properties. Therefore, if someone sharing none or little of these properties, we could then produce the above sentence and be understood.

There are many proper names which originate from lexical items, such as *Apple*, *Grace*, *Jasmine*, etc. It is reasonable to predict that the sense of these proper names may derive from their lexical meanings.

Conversely, if proper names have no sense, or if they are just shorthand for all the properties of a particular referent, then we would expect speakers not to come up with any agreement on the properties of the referent of a proper name. This is because, in both cases, the proper names are randomly assigned to their referents.

## **METHODOLOGY**

In order to test whether proper names generally have descriptive contents, three tasks were designed.

### Task I

Task I was done in the form of a questionnaire (See Appendix A). Participants were given 16 photos of the upper-body of 16 people, 8 of which were male, and the other 8 female. They were then given 16 English names and 16 Chinese names. The English names were picked up randomly from a list of non-lexical names<sup>1</sup>, selected from a list of most common English other names. Here, by non-lexical names we refer to names which are not transparently related to existing lexical items in contemporary English. We assumed that most participants were not aware of the etymology of these names, and thus would not relate, for instance, *Sophia* to wisdom or *Philip* to horse because of their etymology. Non-lexical English names were used because we wanted to eliminate the effects of the sense of the related lexical items on that of the proper names. The Chinese names were also picked up randomly from a list of most common Chinese names. As a property of Chinese names, these names were generally lexical.

The participants were asked to match these photos and the names by intuition. A one-one correspondence was required in the matching. Therefore, one photo can only match to one English name, and one English name can only match to one photo. And the same applies for the Chinese names.

A total of 57 valid questionnaires were received. The majority of the participants were university students aged 18-24, while a few of them were secondary school students aged below 18, and a few between 24-30. They come from a range of different departments.

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<sup>1</sup> With the exception of “Crystal”, which was an erroneous item in the selection of non-lexical names.

## Task II

The second task was given to some of the participants after they have finished Task I. This task was an open-ended question. Participants were asked what they would think that a person whose name was each of the 16 English names and 16 Chinese names would be like. Whereas Task I aimed to probe the frequency (quantity) of the participants' association of a particular photo to a particular name, this task was designed to access the quality of their interpretation of the names.

A total of 30 valid questionnaires were received for this task.

## Task III

The third task was a prototypicality test. A computer-based experiment using the Inquisit software was utilized. In each turn, the participant taking the test was shown one of the 16 photos randomly on the lower half of the screen, and one of the 16 English names on the upper half of the screen at the same time. The participant had to response as quickly as possible whether he or she thinks the name was suitable for the person in the photo, by pressing one of the two labeled buttons on the keyboard. The reaction time was then timed and the response was recorded. There were a total of 32 turns for each participant.

If the person in the photo is prototypical for the name shown, then we expect the reaction time to be short, relative to a pair which is not prototypical. Therefore, by checking which pairs produce shorter reaction time in the experiment, we should be able to identify the prototypes of these proper names.

This task was done separately from Task I and Task II, so that the participants would not have seen the photos and the names before they take the test. There were a total of 30 subjects, aged between 18 and mid-thirty.

## **RESULTS AND ANALYSIS**

### Task I

The results in Task I (See Appendix B.1-2) show clearly that participants agree uncontroversially on that some names denote male referents and some names denote female referents.

If we suppose the 57 participants assign a given name of a particular sex to one of the 8 photos of that sex randomly, then a probabilistic distribution will suggest that each photo will receive roughly 7 votes. We therefore draw a line at 100% above this probabilistic result, which is rounded to 14, and suggest everything above this line to be non-probabilistic result, that is, they are unlikely to be a result of random assignment.

By using computational simulation, we calculated the probability of getting at least one photo with 14 or more votes to be 10.2%, if it is a stochastic process. The follow table lists the probability of getting at least one photo with  $n$  or more votes:

$n$	Probability $\Pr(n)$
13	20.1%
14	10.2%
15	4.55%
16	1.66%
17	0.72%
18	0.15%

Table 1: Probability of getting at least one photo with  $n$  or more votes

Below shows the list of name-photo matches which have received 14 or more votes:

Frequency	Photo	Name
19	I	Billy
18	P	Philip
17	D	Crystal
16	G	Crystal
15	O	Billy
14	K	William
14	F	Stephanie

Table 2: Non-probabilistic matches (English names)

Frequency	Photo	Name
22	A	美娟
21	D	佳雯
18	B	雅婷
16	N	俊銘
15	O	文彬
15	I	家榮

Table 3: Non-probabilistic matches (Chinese names)

Since we have obtained so many non-probabilistic matches, and many of these are of very high frequency, it therefore shows unambiguously that they cannot be due to a stochastic process.

## Task II

From the results in Task I, it seems that some of the names are more prone to induce certain images than others. We therefore study these names further from the results of Task II. An analysis of the participants' answers in the task is shown below:

Name	Properties
Billy	silly: 8; fat, lovely: 8; honest: 2; others: 5
Philip	old, mature: 10; knowledgeable: 4; nice, friendly: 4; handsome: 2; others: 6
Crystal	cute: 10; pretty: 4; lively: 3; quiet: 2; others: 7
William	staid: 6; flirty: 3; ordinary: 3; boring: 2; fat: 2; weird: 2; others: 6
Stephanie	kind: 4; decent: 3; ordinary: 3; young: 2; pretty: 2; cute: 2; boyish: 2; stylish: 2; others: 6
美娟	old, mature: 11; virtuous: 3; pretty: 2; others: 6
佳雯	quiet: 7; extrovert: 2; others: 10
雅婷	elegant: 6; quiet, introvert: 4; girly: 3; pretty: 2; lively: 2; others: 4
俊銘	handsome: 4; artificial: 3; ordinary: 3; working in financial sectors: 2; bright: 2; others: 4
文彬	elegant: 8; good academically: 4; weak: 2; old-fashioned: 2; fat: 2; stylish: 2; others: 7
家榮	old-fashioned: 4; ordinary: 3; behaving: 2; old: 2; fat: 2; others: 3

Table 4: Properties of selected names perceived by participants in Task II

It should be noted, that while some of the properties listed above are distinct in meaning, they are nevertheless obviously related (cf. young, pretty and cute). The overall picture should be clear that there are rough agreements on the general image of a person who bears a particular name, while Crystal is for someone cute and pretty, the girly type, 文彬 is perceived to be an elegant gentleman. However, there are also opposite views on the same name. While some think that people called 佳雯 are quiet and introvert, others think they are extrovert. But generally speaking, such disagreements seem to be of minority.

### Task III

The results of the experiment in Task III are shown in Appendix C.1-2. The tables are divided into four quadrants. The one on the top-left represents trials which showed a photo of a female and a name of a male. The one on the top-right represents trials which showed a photo of a male and a name of a male; the one on the bottom-left a photo of a female and a name of a female; and the one on the bottom-right a photo of a male and a name of a female.

The average reaction time and standard deviation of the four quadrants in Appendix C.1 are shown below:

Average reaction time (ms)		Photo shown	
		Female	Male
Name shown	Male	Avg.: 2678 S.D.: 1666	Avg.: 1939 S.D.: 763
	Female	Avg.: 1803 S.D.: 642	Avg.: 3320 S.D.: 2040

Table 5: Average reaction time and standard deviation of matched photos and names

This again shows that the subjects were easy to determine whether a name belongs to a male or a female, as a shorter reaction time indicates that the pair is prototypical.

The results also suggest a number of prototypical photo-name pairs, however many of these pairs do not agree with the results in Task I. There are a few possible explanations. First, the subjects might have misunderstood the experiment; they might mistake the instruction “to decide whether the name is suitable for the person in the photo” as “to decide whether the name denotes a person of the same sex as the one in the photo”. Second, since the subjects in Task III were on average older than those in Task I, there may be differences in their perception of the names. Third, there may be not enough subjects to make the statistics significant.

## DISCUSSION AND CONCLUSION

The results from the three tests showed that we generally share some vague criteria on what qualify as a referent of a specific proper name. Therefore proper names do contain descriptions of the referents, such as, unsurprisingly, their sex, and probably age, nationality, personality, and even occupation and so on. This is analogous to the sense of common nouns, although for common nouns, it is usually not an option to name something not according to the sense of the word. We do, however, name a computer pointing device a ‘mouse’ and a young girl a ‘chick’, for example.

Consider, then, that we know originally Noriko is Japanese, but we later find out that she is not Japanese but American. We would of course not say: *Noriko didn't exist at all*, but it is conceivable that someone would ask: *How come she is called Noriko?* This would be a similar case to a foreigner coming to know that Americans call a young girl a ‘chick’, which is incongruent with his sense of ‘chick’, and ask: *How come a girl is called a chick?*

If we look at it this way, then it seems that proper names are not much different from common nouns. Longobardi (2001) suggested bare common nouns and proper names are one and the same. In the same spirit, it is not unconceivable that proper names and common nouns in general are the same in a certain sense, although they may be coded differently syntactically speaking. But we should also note that in some languages the distinction between a common noun and a proper name is less than what we expect. For instance, it is perfectly grammatical to use a definite article to modify a proper name in Italian.

The difference between proper names and common nouns, then, lies mostly on the fact that proper names are used to denote individuals, while common nouns denote kinds. When a common noun is used in a referring expression, then the difference is even less. Searle argued that they differ in that proper names specify none of the characteristics of the referents, while definite descriptions do (Searle: 1958. 252). While ‘Scott’ and ‘the author of Waverley’ may denote the same person, the latter tells us something but not the former. But since we have argued that proper names are not devoid of descriptive contents, we know that proper names do tell us something. We know, at least, that *Scott* is

probably an Englishman and very unlikely to be a Chinese woman living in a small village in mainland China.

In conclusion, it has been shown that proper names do have sense in a vague way (maybe this is the reason why naming is given so much regard and importance in some cultures). It has also been shown that proper names and common nouns show a number of similarities, although there also exist differences in syntactic structure and morphology. However, these differences may probably be explained by the difference in their function. As common nouns denote kinds, an article is generally required to assign definiteness to a common noun to make it a referring expression. On the other hand, proper names are tailor-made to denote individuals, so definiteness is guaranteed, and no article is needed. This also explains why proper nouns are not used plurally. The vague nature of the sense of proper names may also be due to the fact that it is impractical to assign a unique name to every individual, so proper names are reused to denote different individuals under different contexts. As a result, only vague descriptions are possible.

## REFERENCES

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# APPENDIX A - QUESTIONNAIRE FOR TASK I AND TASK II



**A**



**B**



**C**



**D**



**E**



**F**



**G**



**H**



**I**



**J**



**K**



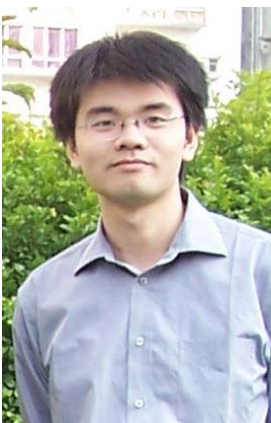
**L**



**M**



**N**



**O**



**P**

### 甲部、一

你認為什麼名字最適合頁一的十六位朋友呢？

以下有十六個英文名字，請憑直覺把名字與頁一之十六幅照片配對。（請填英文字母）

Alexander	_____	Alicia	_____	Billy	_____	Christopher	_____
Crystal	_____	Harry	_____	Jennifer	_____	Karen	_____
Kenneth	_____	Katherine	_____	Michelle	_____	Philip	_____
Sophia	_____	Stephanie	_____	Terence	_____	William	_____

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### 甲部、二

你認為什麼名字最適合頁一的十六位朋友呢？

以下有十六個中文名字，請憑直覺把名字與頁一之十六幅照片配對。（請填英文字母）

文彬	_____	玉婷	_____	志銘	_____	佳雯	_____
秀玲	_____	佩君	_____	明哲	_____	宗憲	_____
怡芳	_____	俊銘	_____	建宏	_____	美娟	_____
家榮	_____	淑君	_____	智偉	_____	雅婷	_____

## 乙部

如果一個人叫以下的名字，你直覺上覺得他/她會是一個怎樣的人呢？

Alexander \_\_\_\_\_

Alicia \_\_\_\_\_

Billy \_\_\_\_\_

Christopher \_\_\_\_\_

Crystal \_\_\_\_\_

Harry \_\_\_\_\_

Jennifer \_\_\_\_\_

Karen \_\_\_\_\_

Kenneth \_\_\_\_\_

Katherine \_\_\_\_\_

Michelle \_\_\_\_\_

Philip \_\_\_\_\_

Sophia \_\_\_\_\_

Stephanie \_\_\_\_\_

Terence \_\_\_\_\_

William \_\_\_\_\_

文彬 \_\_\_\_\_

玉婷 \_\_\_\_\_

志銘 \_\_\_\_\_

佳雯 \_\_\_\_\_

秀玲 \_\_\_\_\_

佩君 \_\_\_\_\_

明哲 \_\_\_\_\_

宗憲 \_\_\_\_\_

怡芳 \_\_\_\_\_

俊銘 \_\_\_\_\_

建宏 \_\_\_\_\_

美娟 \_\_\_\_\_

家榮 \_\_\_\_\_

淑君 \_\_\_\_\_

智偉 \_\_\_\_\_

雅婷 \_\_\_\_\_

## APPENDIX B.1 - FREQUENCY OF MATCHING IN TASK I (ENGLISH NAMES)

	Photo (*Appendix A)																TTL
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Alexander									7	10	9	6	9	11	4	1	57
Billy									<b>19</b>	2		4	4	4	<b>15</b>	9	57
Christopher						1	2		5	9	11	9	6	7	2	5	57
Harry									7	3	7	7	12	6	9	6	57
Kenneth										12	6	12	11	7	3	6	57
Philip									8	5	1	7	6	4	8	<b>18</b>	57
Terence	1						1		1	11	9	6	2	13	7	6	57
William									8	5	<b>14</b>	6	7	3	9	5	57
Alicia	6	10	11	4	2	5	12	7									57
Crystal	2	8	3	<b>17</b>	6	4		<b>16</b>									57
Jennifer	13	9	10	4	6	6	8	1									57
Karen	7	2	8	9	10	6	5	10									57
Katherine	9	9	11	6	4	9	5	4									57
Michelle	6	10	8	3	10	4	7	8	1								57
Sophia	13	7	5	5	6	8	6	6								1	57
Stephanie		2	1	9	13	<b>14</b>	11	5	1					1			57
TTL	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	912

\* The numbers indicate how many participants match the name and the photo.

## APPENDIX B.2 - FREQUENCY OF MATCHING IN TASK I (CHINESE NAMES)

	Photo (*Appendix A)																TTL
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
文彬									2	5	6	10	4	5	<b>15</b>	10	57
志銘								1	2	12	4	10	13	5	4	6	57
明哲									6	9	8	5	10	9	3	7	57
宗憲									7	5	10	10	4	5	10	6	57
俊銘									2	11	10	7	6	<b>16</b>	2	3	57
建宏									11	8	10	5	7	6	3	7	57
家榮									<b>15</b>	4	7	4	5	6	7	9	57
智偉									12	3	2	6	7	5	13	9	57
玉婷		12	6	5	5	5	11	13									57
佳雯	2	6	5	<b>21</b>	3	11	5	4									57
秀玲	9	3	13	7	9	3	7	6									57
佩君	3	9	11	3	9	8	4	10									57
怡芳	10	5	6	6	11	7	7	5									57
美娟	<b>22</b>		2		8	7	11	7									57
淑君	11	4	9	7	7	6	8	4					1				57
雅婷		<b>18</b>	5	8	5	10	4	7									57
TTL	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	912

\* The numbers indicate how many participants match the name and the photo.

## APPENDIX C.1 - AVERAGE REACTION TIME IN TASK III (MATCHED)

Reaction time (ms)		Photo shown															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Name shown	Alexander			3346						3145	1574	1168	913	1557		2861	1920
	Billy	1129								1149	1184	1890	1330	2426	1527	2930	1314
	Christopher		1428	1397	4183	2107					2686	2895	1412	4252	1269	2169	1871
	Harry		1447				1329	1767	5854	1659	1833	2023	1315		2117	2541	1372
	Kenneth	1255	3598				1106			3089		992	1982	1344	1705	962	1588
	Philip									1208	1387	2981	1226	1820	2801	1848	1587
	Terence	5995	2019		2192		3609	2065	1778	1501	1530	3213	4173	1756	1135	1701	1988
	William							5959		1962	1063	1284	3007	2165	2806	2227	2033
	Alicia	1831	1294	1759	1719	2337	1554	2873	1035		5856			3900	2106		
	Crystal		2095	1836	1608	2599	1635		1262					5852			
	Jennifer	3256	790	1598	1896	2256	2209	2127	1415	1891							2018
	Karen	2144	2545	1673	1189	1490	947	1736	1658		5774	1368					772
	Katherine	982	1310	1710	1125	3650	1497	1906	1016		1320		1600	5906	2383		
	Michelle	2004	2069	2060	2364	1322	1808	1886	2099	5748	2134		1698			784	
	Sophia	1312	2125	2115	1949	1592	1244	4422	1277	3471							
	Stephanie	1869	927	1285	2094	1752	1246	2032	1379			5838	5982				

\* The numbers indicate, in Task III, the average reaction time (in ms) of the participants when shown the name and the photo AND responded that the name matches with the photo.

## APPENDIX C.2 - AVERAGE REACTION TIME IN TASK III (UNMATCHED)

Reaction time (ms)		Photo shown															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Name shown	Alexander	1023	1555	1330	1718	1001	1293	1498	3186	4084		1618	2308	2212		2536	
	Billy	2271	1365	922	1476	860	1178	1622	3504		1179	4136	2099		1290		
	Christopher	2019	1672	2130		1570		1470	1719	1183	5962	3420	2718	3013			
	Harry	1565	1317	1766	1332	1871		1461	1425	1781	1246					1450	
	Kenneth	1635	1242	2332	1750	1731	1175	1288	755	1051	5803		790	1305	1887		
	Philip	2008	2105	1684		1310	1167	2133	1595		1090	2246		816	1310		
	Terence	853	1630	1341	1019	1683	1404	3573	1318	5722		931	1255				
	William	2339	740	2463	1553	1088	1894	1830	1161	1609				1909	1447		1139
	Alicia	1273					5883	1509		2017	1244	1819	3312	2627	1795	1429	1434
	Crystal			918				1853		1908	1231	1372	1320	1446	1708	1132	1514
	Jennifer	1526			3962			3030	673	1340	1342	1185	1392	1666	1015		2293
	Karen			569			5841	3710	2847	1190	990	917	1182	1281	2370	1498	935
	Katherine						1453	3084		4846	2280	1801	3205	1726	1953	2113	1428
	Michelle		2056		1026	2064		3642	3361	682	1843	824	1886	5675	1538	2269	1802
	Sophia	3763			1309			1624		1840	1446	1713	1737	1744		1487	954
Stephanie	1935								1196	2204	1961	1959	1774	2179	876	896	

\* The numbers indicate, in Task III, the average reaction time (in ms) of the participants when shown the name and the photo AND responded that the name does NOT match with the photo.