Orthographic Transparency Ratings for Spanish–English Cognates

from the Paivio, Yuille, and Madigan Imagery Norms

by

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Abstract

Cognates are words that are orthographically, semantically, and syntactically similar in two languages. There are over 20,000 Spanish-English cognates in the Spanish and English languages. Research has shown that cognates facilitate vocabulary acquisition and reading comprehension for language learners when compared to non-cognate words.

Language researchers often require calibrated materials to study the effects of word characteristics on learning and memory. In this study, orthographic transparency ratings for five hundred nouns drawn from the Paivio, Yuille, and Madigan (1968) imagery norms were collected.

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The English and Spanish languages share over 20,000 cognates, words that are orthographically, semantically, and syntactically similar in two languages as a result of their common etymology. Some cognate pairs are identical as in the case of the English noun, "hospital," and its Spanish equivalent, "*hospital.*" The cognate equivalents, product-*producto,* are not identical, but are very similar to each other. Additionally, Spanish-English cognates may be found at all levels of word frequency (Montelongo, 2002).

For decades, linguists (i.e., Lado (1957) have suggested the use of cognates in classes of language instruction because of their similarity to words in the target language and because they are so ubiquitous. Their resemblance to words in the target language makes cognates among the easiest vocabulary items for language learners to acquire (Laufer, 1990).

Cognates are versatile because they can be used for different purposes and taught in many ways. Classroom teachers can teach Spanish-speaking English Language Learners cognate-recognition strategies to comprehend text (Jiménez, 1997; Jiménez, García, and Pearson, 1995; 1996; Papalia, 1987; Rodríguez, 2001). They can also use concept induction exercises for students to learn morphological regularities (Garrison, 1990). Language teachers can teach English Language Learners (ELLs) strategies such as using context clues to guess at the meanings of unknown words by through cognates (Montelongo, Hernández, Herter, and Hernández, 2010). Despite their number and obvious potential, however, cognates remain underutilized in the ESL classrooms (Fitzgerald and Cummins, 1999).

The recognition of cognates, however, is not an automatic process (Jiménez, 1997). Students must be taught to identify them. When a group of students was asked to circle cognates

in reading passages, many of the cognates went uncircled (Nagy, García, Durgunogulu, and Hancin-Bhatt, 1993). Why were some cognates recognized and not others? The answer might be that Spanish-English cognate words possess different levels of orthographic transparency. Some cognate equivalents share identical spellings as is the case for the English word "natural" and the Spanish word "*natural*." ELLs are able to recognize this pair as equivalent because of the physical likeness between these two words. Other Spanish-English cognates are not as transparent. The English word, "sacred," is spelled much differently than its cognate equivalent, "*sagrado.*" The spellings of "loyal" of "*leal*" are even more different, despite the fact that they share the same etymology and semantic meaning. Such pairs of cognates offer less facilitation for ELLs because of their obvious differences in spelling (Montelongo, 2002).

The Role of Calibrated Materials in Language Research

Language researchers require calibrated materials to study the effects of a language characteristic on learning and memory. With a language population as large as Spanish-English cognates, researchers need a large sample of calibrated ratings of orthographic transparency to determine the effects of cognates on learning. However, it takes time to collect ratings.

Montelongo, Hernández, and Herter (2009) collected orthographic transparency ratings for more than 2,400 Spanish-English cognate nouns and adjectives drawn from the Juilland and Chang-Rodríguez's (1964) Spanish frequency word count. The Montelongo, et al. (2009) ratings provided researchers with a measure of cognate orthographic transparency together with a built-in measure of Spanish frequency. However, translation studies have shown that cognates that are more concrete and more frequent are easier to learn and more difficult to forget than cognates and non-cognates that are not concrete or infrequent (de Groot and Keijzer (2000); de Groot and

Poot, 1997). The studies by de Groot and her associates suggest that research involving cognate stimulus materials must take imagery into account as well as word frequency.

The primary purpose of the present study was to provide researchers with orthographic transparency ratings for Spanish-English cognate nouns that contain a built-in measure of word imagery. To make this possible, it was necessary to draw the cognate sample from the most often-cited set of imagery norms--the Paivio, Yuille, and Madigan (1968) imagery norms. The Paivio, et al. tables also include the word frequency values from the Thorndike-Lorge word frequency count for each of the words. Therefore, this set of orthographic transparency norms contains cognates that have already been rated for both imagery and English word frequency.

Methodology

To assess the degree of orthographic similarity, the procedures utilized by de Groot and Nas (1991) were followed. The ratings instrument was developed by identifying the Spanish-English cognate nouns in the Paivio, Yuille, and Madigan (1968) imagery norms. The five-hundred Spanish-English cognate nouns were rated for transparency on a scale of 1 to 7. To provide the participants with a contrast for the ratings of the cognates, ninety-two *non-cognate* nouns from the Paivio, et al. norms were also included. The non-cognates consisted of an English word and its Spanish translation, such as the English word, "arrow," and the Spanish word, "*flecha*." The non-cognates were randomly interspersed among the cognates.

The participants were given directions that included a definition of cognates. They were advised that the ratings would be used by educational researchers and textbook authors to create materials for ELLs. To provide them with practice, the participants were given five examples of Spanish-English cognate words to rate. The examples ranged from the identical to the very

5

dissimilar. None of these practice pairs was used in the study. After this short practice, the participants began to rate the materials.

The participants were instructed to rate the pairs of English-Spanish words on a 7-point scale solely on the basis of orthographic similarity. A score of "7" indicated high orthographic similarity; a score of "1" indicated low orthographic similarity. The participants were told that their ratings should reflect only an assessment of the word's spelling. The participants were tested in groups ranging from 1 to 5 persons. They were given 50 minutes to complete the ratings, although most finished in less time.

Each booklet contained ten pages on which the 491 cognate and 101 non-cognate pairs were printed. Each page was divided into two columns and there were sixty-two items on each page, except for one page that contained 34. Each item in the instrument contained an English word and its Spanish equivalent. In between the two words, a blank space on which the participants would rate the pair on cognate transparency was provided. The pages in each of the booklets were randomly assigned to reduce order effects.

Participants

Forty-one college students enrolled in introductory psychology classes at a state university in California completed the ratings booklets for course credit. The participants' ages ranged from 19 to 52, with the majority between the ages of 19 and 23. Since the participants were asked to rate the Spanish-English cognates solely on the basis of orthographic similarity, no attempt was made to determine the participants' fluency in Spanish.

Scoring

 Once the ratings were completed, the data was entered into a Microsoft Excel spreadsheet. Before the mean and standard deviations were calculated, the three highest and the

three lowest scores for each cognate pair were eliminated in order to reduce the effect of outliers on means and standard deviations.

Results

The transparency ratings for each one of the Spanish-English cognate noun pairs are presented in alphabetical order in Table 1. The mean transparency rating for the cognate nouns was 4.709 (sd. = 1.253). The mean rating for the non-cognate nouns was 1.229 (sd. = .449).

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Insert Table 1 about here

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An analysis of the distribution of the cognate nouns revealed that 24 Spanish-English cognate pairs were rated as identical. Another 11 pairs were rated as nearly identical. Typically, these were pairs for which the Spanish equivalent possessed an accent mark as in the pair, piston-*pistón*. The majority (42.8%) of the words were in the range between 5.00 and 6.00. These tended to be cognate pairs that were orthographically similar except for the final letters. Such pairs as "infant-*infante*" exemplify these cognate pairs which include an additional "a," "e," or "o" at the end of the Spanish equivalent. Cognate pairs that showed slightly more prominent orthographic dissimilarities at the ends of words comprised the second highest percentage (23.8%) of instances. Examples of pairs in this category were "salute-*saludo*." Cognate pairs with more divergent spellings, such as "banner-*bandera*," accounted for 16.2% of the cases. The lowest ratings were reserved for cognate pairs that tended to orthographically diverge early as in the pair, "beverage-*brebaje*," or were orthographically dissimilar from the initial letter as in "sugar-*azúcar*." An analysis of the distribution is presented in Table 2.

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Insert Table 2 about here

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Conclusion

The purpose of the present experiment was to produce a set of orthographic transparency ratings for Spanish-English cognate words. Transparency ratings for 491 hundred pairs of Spanish-English cognates were collected. These ratings provide language researchers with Spanish-English cognate nouns that have been rated for imagery, word frequency in English, and orthographic transparency that may be used to study the effects of Spanish-English cognates on learning and memory.

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Table 1. Mean ratings and standard deviations for Spanish-English cognate pairs.

M	S.D.	English	Spanish	M	S.D.	English	Spanish
3.559	0.603	abasement	abatimiento	4.765	0.807	attitude	actitud
2.941	0.765	abbess	abadesa	5.324	0.716	author	autor
5.794	0.404	abdication	abdicación	4.588	0.809	automobile	automóvil
7	0	abdomen	abdomen	5.857	0.35	avalanche	avalancha
2.794	1.158	ability	habilidad	4.382	0.768	avenue	avenida
3.794	0.9	abyss	abismo	4.412	1.003	baby	bebé
4.824	0.821	accordion	acordeón	5.735	0.503	bacteria	bacterias
5.353	0.636	acrobat	acróbata	4.735	0.779	banality	banalidad
5.176	0.746	adage	adagio	5	0.728	bandit	bandido
3.588	1.032	admiral	almirante	4.235	0.689	banker	banquero
1.441	0.603	advantage	ventaja	3.794	0.900	banner	bandera
5.147	0.648	adversity	adversidad	4.794	0.832	bar	barra
4.059	0.872	advice	aviso	5.676	0.629	bard	bardo
5.382	0.769	affection	afección	6.412	0.492	baron	barón
4.882	0.9	agility	agilidad	5.176	0.821	barrel	barril
5.324	0.756	agony	agonía	4.235	0.876	beast	bestia
5.853	0.354	air	aire	1.206	0.404	betrayal	traición
7	0	alcohol	alcohol	2.853	0.845	beverage	bebida
6.441	0.553	algebra	álgebra	2.765	0.842	beverage	brebaje
4.912	0.781	allegory	alegoría	5.118	0.758	blasphemy	blasfemia
3.353	1.026	ambassador	embajador	4.618	0.841	board	bordo
5.5	0.5	ambulance	ambulancia	4.618	0.805	bottle	botella
4.559	0.603	amour	amorío	4.176	0.785	bravery	bravata
4.353	0.762	amplifier	amplificador	3.824	0.746	breeze	brisa
5.412	0.6	anecdote	anécdota	5.118	0.796	bronze	bronce
4.794	0.583	angle	ángulo	5.206	0.583	brutality	brutalidad
7	0	animal	animal	5.647	0.478	brute	bruto
4.882	0.631	animosity	animosidad	5.176	0.663	buffoon	bufón
5.588	0.691	antitoxin	antitoxina	2.353	0.762	bullet	bala
3.765	0.842	anxiety	ansiedad	4.206	0.796	cabin	cabaña
4.824	0.706	appearance	apariencia	4.265	0.656	camouflage	camuflaje
5.559	0.650	application	aplicación	5.824	0.452	camp	campo
5.912	0.373	aptitude	aptitud	5.794	0.404	candidate	candidato
7	0	armadillo	armadillo	4.824	0.821	cane	caña
3.147	0.845	array	arreglo	5.176	0.663	capacity	capacidad
5.853	0.354	artist	artista	3.324	0.931	captive	cautivo
4.941	0.591	assault	salto	5.971	0.169	caravan	caravana
4.735	0.699	atmosphere	atmósfera	3.941	0.683	cell	celda

3.765	0.644	cell	célula	3.971	0.706	custom	costumbre
4.088	0.658	centennial	centenario	4.147	0.733	deceit	decepción
5.412	0.6	ceremony	ceremonia	5.676	0.527	decoration	decoración
3.471	0.813	charter	carta	4.118	0.867	decree	decreto
1.912	0.781	chief	jefe	5.382	0.642	deduction	deducción
3.441	0.694	chloride	cloruro	4.588	0.647	delirium	delirio
5.294	0.620	circle	círculo	3.059	0.906	deluge	diluvio
5.765	0.489	circuit	circuito	5.529	0.652	democracy	democracia
5.382	0.687	clemency	clemencia	5.676	0.468	demon	demonio
4	0.767	code	código	5.176	0.746	derelict	derrelicto
4.735	0.609	college	colegio	5.529	0.652	destruction	destrucción
5.471	0.499	colony	colonia	5.706	0.570	determination	determinación
6.088	0.562	combustion	combustión	5.559	0.603	detonation	detonación
5.294	0.620	comedy	comedia	2.441	0.914	development	desarrollo
5.118	0.796	committee	comité	2.971	0.747	devil	diablo
3.618	0.971	committee	comisión	5.676	0.580	devotion	devoción
5.441	0.553	comparison	comparación	4.471	0.606	diamond	diamante
5.588	0.549	competence	competencia	5.529	0.652	discipline	disciplina
5.882	0.322	competition	competición	2.853	0.692	disconnection	desunión
5.853	0.354	concept	concepto	3.206	0.758	discovery	descubrimiento
4.441	0.694	confidence	confianza	5.706	0.456	discretion	discreción
3.706	0.787	connoisseur	conocedor	4.912	0.658	disparity	disparidad
4.794	0.631	conquest	conquista	5.912	0.373	disposition	disposición
4.382	0.728	contents	contenidos	5.676	0.468	distinction	distinción
6	0	context	contexto	5.471	0.555	distraction	distracción
5.382	0.687	contract	contrato	7	0	doctor	doctor
5.706	0.456	contribution	contribución	5.5	0.556	dollar	dólar
5.529	0.696	convention	convención	5.794	0.404	domicile	domicilio
5.706	0.516	cooperation	cooperación	7	0	drama	drama
3.618	0.94	cord	cuerda	2.176	0.821	duty	deber
3.118	0.9	core	corazón	4.353	0.636	dynasty	dinastía
5.706	0.456	cost	coste	4.676	0.629	eccentricity	excentricidad
4.353	0.836	cotton	cotonía	5.294	0.666	economy	economía
1.265	0.559	cotton	algodón	5.088	0.781	edifice	edificio
3.971	0.706	cranium	cráneo	5.618	0.486	edition	edición
5.353	0.801	creator	creador	7	0	ego	ego
3.943	0.674	creature	criatura	5.618	0.595	elaboration	elaboración
5.412	0.771	crime	crimen	5.088	0.702	elephant	elefante
7	0	crisis	crisis	5.676	0.468	emancipation	emancipación
5.088	0.818	criterion	criterio	5.706	0.456	emergency	emergencia
3.971	0.891	cuisine	cocina	4.971	0.664	emporium	emporio

3.824	0.785	encephalon	encéfalo	3.588	0.878	gender	género
3.265	0.885	enterprise	empresa	4.471	0.606	genius	genio
5.382	0.642	episode	episodio	2.706	0.62	gingham	guinga
4.588	0.809	equity	equidad	5.853	0.354	glacier	glaciar
5.029	0.747	essence	esencia	5.324	0.716	glory	gloria
5.706	0.570	evangelist	evangelista	4.588	0.732	glutton	glotón
5.882	0.322	event	evento	1.089	0.284	goblet	copa
5.5	0.5	evidence	evidencia	7	0	golf	golf
5.5	0.653	exactitude	exactitud	5.735	0.441	graduation	graduación
5.765	0.424	excuse	excusa	5.853	0.429	gratitude	gratitud
3.529	0.848	exertion	ejercicio	4.206	0.719	gravity	gravedad
5.794	0.404	expression	expresión	4.147	0.692	gymnastics	gimnasia
5.647	0.536	extermination	exterminación	5.559	0.603	habitation	habitación
5.882	0.322	fabric	fabrica	2.853	1.478	harness	arnés
5.176	0.617	facility	facilidad	3.294	1.318	harp	arpa
1	0	fact	hecho	3.853	0.692	heredity	herencia
5.647	0.588	factory	factoría	5.529	0.606	heroism	heroísmo
4.765	0.807	fallacy	falacia	2.206	1.183	hierarchy	jerarquía
5.618	0.486	fantasy	fantasía	5.588	0.549	history	historia
1.118	0.322	fate	fado	5.588	0.6	homicide	homicidio
4.912	0.562	fatigue	fatiga	7	0	honor	honor
5.382	0.687	feline	felino	7	0	hospital	hospital
5.088	0.742	festivity	festividad	5.206	0.631	hostility	hostilidad
5.294	0.924	feudalism	feudalismo	7	0	hotel	hotel
5.794	0.472	fiord	fiordo	4.441	0.811	hour	hora
5.618	0.687	firmament	firmamento	7	0	humor	humor
3.294	0.924	flask	frasco	4.735	0.74	hurricane	huracán
5.118	0.631	flexibility	flexibilidad	4.441	0.811	hypothesis	hipótesis
2.971	0.785	flood	flujo	7	0	idea	idea
3.971	0.664	flower	flor	5.853	0.354	idiom	idioma
5.794	0.404	form	forma	5.5	0.697	ignorance	ignorancia
5.647	0.478	formation	formación	5.853	0.549	illusion	ilusión
5.794	0.404	fortune	fortuna	4.824	0.746	immunity	inmunidad
4	0.767	franchise	franquicia	5.853	0.354	impact	impacto
5.676	0.468	friction	fricción	5.559	0.603	impotency	impotencia
3.059	0.725	frontage	frente	5.676	0.527	impulse	impulso
5.029	0.706	functionary	funcionario	4.382	0.805	inanity	inanidad
5.029	0.706	gallery	galería	5.824	0.381	incident	incidente
3.382	1.284	garden	jardín	5.441	0.694	inclemency	inclemencia
2.353	0.871	garret	guardilla	5.853	0.354	increment	incremento
5.853	0.354	gem	gema	4.706	0.62	inducement	inducimiento

		English	Spanish			English	Spanish
5.412	0.771	industry	industria	5.941	0.235	leopard	leopardo
2.147	1.216	inebriety	ebrio	4.735	0.699	letter	letra
5.882	0.322	infant	infante	4.794	0.832	library	librería
5.559	0.735	infection	infección	5.529	0.696	lime	lima
3.941	0.802	infirmary	enfermería	2.353	0.871	lip	labio
5.941	0.338	ingratitude	ingratitud	4.441	0.774	loquacity	locuacidad
3.382	1.058	inhabitant	habitador	2.294	0.924	loyalty	lealtad
5.412	0.647	injury	injuria	5.735	0.441	lubricant	lubricante
5.765	0.424	insect	insecto	4.559	0.650	macaroni	macarrones
5.618	0.486	insolence	insolencia	3.941	0.838	machine	máquina
5.765	0.424	instance	instancia	5.912	0.373	magnitude	magnitud
5.765	0.424	institute	instituto	4.206	0.583	majority	mayoría
7	0	instructor	instructor	3.5	0.776	malady	mal
5.882	0.322	instrument	instrumento	7	0	malaria	malaria
5.265	0.609	intellect	intelecto	5.559	0.497	malice	malicia
5.059	0.802	interest	interés	3.382	0.687	mammal	mamífero
4.853	0.879	interim	ínterin	3	0.874	management	manejo
2.559	1.034	interview	entrevista	3.971	0.785	mantle	manto
4.559	0.497	intimate	íntimo	3.147	0.879	market	mercado
5.647	0.536	investigation	investigación	4.412	0.691	master	maestro
2.382	0.728	invoice	envío	3.265	0.979	mastery	magisterio
5.5	0.606	irony	ironía	5.382	0.687	material	materia
3.324	0.629	islander	isleño	5.618	0.486	mathematics	matemáticas
1.118	0.322	jealousy	celos	5.588	0.492	medallion	medallón
6	0.343	journal	jornal	5.647	0.478	memory	memoria
4.765	0.644	joviality	jovialidad	2.706	1.099	menace	amenaza
3.059	0.838	joy	júbilo	4.5	0.556	mercy	merced
3.265	0.699	judge	juez	7	0	metal	metal
4.235	0.689	jury	jurado	4.235	0.73	method	método
5.176	0.567	justice	justicia	5	0.874	metropolis	metrópoli
5.824	0.452	kerosene	keroseno	5.794	0.404	microscope	microscopio
3.735	1.290	kerosene	queroseno	3.206	0.676	mind	mente
4.324	0.756	labyrinth	laberinto	3.441	1.006	miracle	milagro
3.353	0.967	lake	lago	5.559	0.650	misery	miseria
3.088	0.781	law	ley	5	0.767	missile	misil
4.441	0.735	leader	líder	5.412	0.732	molecule	molécula
4.265	0.779	lecturer	lector	5.853	0.429	moment	momento
5.853	0.354	legislation	legislación	5.206	0.758	monarch	monarca
5.324	0.674	lemon	limón	4.147	0.692	money	moneda
4.912	0.781	lemonade	limonada	3.882	0.867	monk	monje
3.324	1.021	length	longitud	2.412	0.492	month	mes

4.412	0.943	mood	modo	7	0	piano	piano
7	0	moral	moral	3.353	0.800	picture	pintura
7	0	mosquito	mosquito	5.412	0.732	pipe	pipa
3.471	0.882	mother	madre	6.5	0.56	piston	pistón
4.647	0.536	mountain	montaña	1.353	0.636	plain	llano
4.294	0.708	mucus	mucosidad	5.912	0.284	plant	planta
3.441	0.914	mucus	moco	3.765	0.807	pleasure	placer
5.471	0.737	mule	mula	5.882	0.322	poet	poeta
5.794	0.404	multiplication	multiplicación	4	0.804	poetry	poesía
4.441	0.774	musician	músico	5.176	0.746	pole	polo
4.971	0.664	necessity	necesidad	4.265	1.196	pole	palo
6.5	0.5	nectar	néctar	4.706	0.57	policeman	policía
4.029	0.985	northwest	noroeste	5.118	0.676	pollution	polución
1.206	0.404	nutmeg	nuez moscada	7	0	portal	portal
3.382	1.058	nymph	ninfa	1.441	0.774	portrait	retrato
5.706	0.456	obsession	obsesión	5.5	0.777	position	posición
5.559	0.497	occasion	ocasión	3.206	0.832	poverty	pobreza
4.294	1.151	odor	olor	2.882	0.758	prairie	pradera
4.059	0.765	officer	oficial	5.735	0.559	predicament	predicamento
4.5	0.5	opium	opio	5.765	0.546	present	presente
4.824	0.923	orchestra	orquesta	3.529	0.737	pressure	presión
5.588	0.809	origin	origen	5.176	0.663	prestige	prestigio
5.676	0.580	pact	pacto	2.353	1.108	preview	vista previa
4.588	0.809	painter	pintor	5.529	0.555	prison	prisión
5.265	0.559	palace	palacio	5.412	0.549	prisoner	prisionero
5.559	0.497	panic	pánico	5.618	0.543	procession	procesión
7	0	panorama	panorama	5.853	0.354	product	producto
4.618	0.768	paper	papel	5.706	0.456	profession	profesión
4.235	0.807	party	partido	6.147	0.354	professor	profesor
2.824	0.746	passageway	pasadizo	5.059	0.591	prosperity	prosperidad
5.559	0.553	passion	pasión	2.118	1.105	pudding	budín
5.794	0.472	patent	patente	2.471	1.118	quality	calidad
3.206	1.051	pelt	piel	2.735	1.038	quantity	cantidad
5.765	0.489	perception	percepción	1.294	0.570	quest	pesquisa
5.059	0.683	periodical	periódico	5.059	0.998	reaction	reacción
4.912	0.702	perjury	perjurio	4.441	0.881	recital	recitación
4.735	0.503	permission	permiso	3.647	0.904	recognition	reconocimiento
5.824	0.513	person	persona	5.353	0.681	reflection	reflexión
2.676	1.049	phantom	fantasma	4.559	0.650	reflex	reflejo
4.647	0.936	photograph	fotografía	5.647	0.588	refrigerator	refrigerador
5.559	0.553	pianist	pianista	3.5	0.883	replacement	reemplazo

5.765	0.424	reptile	reptil
5.294	0.749	residue	residuo
5.853	0.354	restaurant	restaurante
4.441	0.774	revolt	revuelta
6.265	0.609	revolver	revólver
4.529	0.652	rhapsody	rapsodia
4.912	0.658	rheumatism	reumatismo
7	0	ritual	ritual
3.176	0.821	river	río
4.029	0.822	robber	robador
3.529	0.737	robbery	robo
5	0.840	rock	roca
4.118	0.718	rosin	resina
4.382	0.595	salad	ensalada
5.529	0.555	salary	salario
5.265	0.609	saloon	salón
5.618	0.543	salutation	salutación
4.794	0.758	salute	saludo
5.765	0.424	satire	sátira
3.588	0.943	sauce	salsa
2.559	0.976	savant	sabio
4.029	0.923	scarlet	escarlata
4.529	1.355	scorpion	escorpión
3.676	0.794	season	sazón
5.559	0.650	semester	semestre
5.618	0.486	sensation	sensación
5.647	0.478	sentiment	sentimiento
3.059	0.838	serf	siervo
5.588	0.549	series	serie
5.529	0.555	session	sesión
2.912	1.121	shock	choque
5	0.862	simile	símil
2.618	1.112	slave	esclavo
5.735	0.441	socialist	socialista
3.882	0.963	spinach	espinacas
3.588	1.003	spinach	espinaca
3.941	0.725	spire	espiral
4.412	0.6	student	estudiante
1.794	0.867	sugar	azúcar
6.441	0.497	sultan	sultán
5.176	0.746	supplication	suplicación
5.441	0.603	suppression	supresión
2.118	0.867	surtax	sobretasa
5.412	0.771	table	tabla
4.706	0.749	tank	tanque
5.294	0.749	temerity	temeridad
4.882	0.582	tempest	tempestad
5.412	0.732	temple	templo
5.471	0.555	tendency	tendencia
3.324	0.794	theologian	teólogo
4.147	0.648	theory	teoría
3.706	0.787	time	tiempo
4.088	0.818	toast	tostada
4.382	0.642	tomb	tumba
3.5	0.738	tower	torre
5	0.767	traction	tracción
5.471	0.555	tragedy	tragedia
5.676	0.468	tribute	tributo
5.294	0.749	tripod	trípode
4.029	0.568	troops	tropas
4.206	0.719	truck	trueque
3.853	0.733	truck	troca
4.824	0.706	trumpet	trompeta
2.441	1.034	umbrella	sombrilla
3.941	0.683	unit	unidad
5.412	0.6	university	universidad
3.059	1.136	unreality	irrealidad
4.912	0.658	vaccination	vacunación
3.588	0.691	vaccination	vacuna
3.529	0.737	vacuum	vacío
5.353	0.681	valley	valle
4.324	0.794	vanity	vanidad
7	0	vapor	vapor
4.088	0.702	venom	veneno
2.824	0.923	vessel	vaso
5.441	0.694	vestibule	vestíbulo
5.853	0.354	victim	victima
5.324	0.716	victory	victoria
5.471	0.652	vigilance	vigilancia
3.941	0.802	village	villa
6.471	0.499	vision	visión
5.294	0.787	vocation	vocación

5.353	0.762	volcano	volcán
5.441	0.694	volume	volumen
2.676	0.865	wine	vino
1.265	0.559	winter	invierno
4.265	0.816	yacht	yate

Table 2. Distribution of ratings for the Spanish-English cognate nouns.

Rating	Examples English-*Spanish*	Number	Percent
7.0	abdomen-*abdomen*	24	4.8%
6.0 to 6.999	baron-*barón*	11	2.2%
5.0 to 5.999	glory-*gloria*	214	42.8%
4.0 to 4.999	vanity-*vanidad*	119	23.8%
3.0 to 3.999	market-*mercado*	81	16.2%
2.0 to 2.999	loyalty-*lealtad*	36	7.2%
1.0 to 1.999	cotton-*algodón*	15	3.0%