

Appendix A

Concept stimuli

Table A1

Noun stimuli with their English translation (grouped by semantic class)

Concept class	Concepts
Artifactual location	<i>appartamento</i> “apartment”, <i>bar</i> “bar”, <i>duomo</i> “cathedral”, <i>negozio</i> “shop”, <i>ristorante</i> “restaurant”
Bird	<i>canarino</i> “canary”, <i>cigno</i> “swan”, <i>corvo</i> “crow”, <i>gabbiano</i> “seagull”, <i>pinguino</i> “penguin”
Emotion	<i>allegria</i> “cheerfulness”, <i>dolore</i> “pain”, <i>gelosia</i> “jealousy”, <i>passione</i> “passion”, <i>preoccupazione</i> “worry”
Fruit	<i>ananas</i> “pineapple”, <i>banana</i> “banana”, <i>ciliegia</i> “cherry”, <i>kiwi</i> “kiwi”, <i>mela</i> “apple”
Ideal	<i>amicizia</i> “friendship”, <i>democrazia</i> “democracy”, <i>giustizia</i> “justice”, <i>libertà</i> “freedom”, <i>religione</i> “religion”
Mammal	<i>cane</i> “dog”, <i>cavallo</i> “horse”, <i>gatto</i> “cat”, <i>giraffa</i> “giraffe”, <i>zebra</i> “zebra”
Natural location	<i>bosco</i> “woods”, <i>mare</i> “sea”, <i>montagna</i> “mountain”, <i>prato</i> “lawn”, <i>spiaggia</i> “beach”
Tool	<i>cacciavite</i> “screwdriver”, <i>coltello</i> “knife”, <i>matita</i> “pencil”, <i>martello</i> “hammer”, <i>pettine</i> “comb”
Vegetable	<i>carota</i> “carrot”, <i>lattuga</i> “lettuce”, <i>melanzana</i> “eggplant”, <i>patata</i> “potato”, <i>pomodoro</i> “tomato”
Vehicle	<i>aeroplano</i> “airplane”, <i>automobile</i> “car”, <i>motocicletta</i> “motorcycle”, <i>nave</i> “ship”, <i>treno</i> “train”

Table A2

Verb stimuli with their English translation (grouped by semantic class)

Concept class	Concepts
Abstract event	<i>credere</i> “to believe”, <i>dubitare</i> “to doubt”, <i>odiare</i> “to hate”, <i>pensare</i> “to think”, <i>temere</i> “to fear”

Auditory event	<i>ascoltare</i> “to listen”, <i>cantare</i> “to sing”, <i>gridare</i> “to shout”, <i>origliare</i> “to eavesdrop”, <i>udire</i> “to hear”
Tactile event	<i>accarezzare</i> “to stroke”, <i>afferrare</i> “to grab”, <i>massaggiare</i> “to massage”, <i>sfiorare</i> “to touch lightly”, <i>tastare</i> “to feel”
Visual event	<i>avvistare</i> “to spot”, <i>intravedere</i> “to glimpse”, <i>sbirciare</i> “to peep”, <i>scorgere</i> “to catch sight of”, <i>scrutare</i> “to peer at”

Appendix B

English translation of task instructions

Hi! You are going to hear a set of Italian words, and your task is to explain their meaning.

Please, remember these simple instructions:

1. do not hurry! Your task is to describe the word meaning as carefully as possible;
2. do not answer the first thing that comes to your mind! After listening to a word, think carefully about its meaning and those aspects that you regard as most important to describe it;
3. when explaining the word meaning, imagine that you are answering questions such as the following: what is it? what is it used for? how does it work? what are its parts? what is its shape? where can it be found? etc.;
4. describe each aspect of word meaning by using short sentences like these: *it is an animal, it is red, it has wings*, etc.

Here are some examples of descriptions:

- *trout*: it is a fish, it lives in rivers, it is good to eat, it can be fished, it has fins, it has gills, it has a silver color.
- *table*: it is a piece of furniture, it has usually four legs, it can be made of wood, it can be made of metal, it is used to put objects on it.
- *to eat*: it is an action, it is performed with the mouth, it is necessary for survival, it is pleasant, we use the fork, we use the knife, we can do it at a restaurant, we can do it at home.

Remember, in this task there is no right answer! You are absolutely free to explain as you wish what you believe to be the meaning of these words. You have one minute to describe each word: then you will hear a “beep” and you will hear the next word. If you think you are finished describing a word, you can move on to the next one by pressing the mouse left

key. If you did not understand a word, you can listen to it again by pressing the mouse right key.

If the task is clear, you can now start a short trial session, after which you will be able to ask the experimenter for further explanations. If you want to listen to these instructions again, please press the mouse right key. If instead you are ready for the trial session, click the mouse left key.

Appendix C

BLIND feature type coding scheme

Table C1

Semantic feature types used to annotate the data from sighted (S) and blind (B) subjects, together with their absolute and relative occurrence frequencies

Feature type	Code	Examples	Group	No.	%
Hypernym	isa	<i>cat</i> -ANIMAL	S	2,103	11.02
Coordinate	coo	<i>cat</i> -DOG	B	1,809	10.60
			S	167	0.87
Synonym	syn	<i>mountain</i> -MOUNT	B	175	1.02
			S	29	0.15
Antonym	ant	<i>hate</i> -LOVE	B	41	0.24
			S	7	0.04
Example_of	exa	<i>horse</i> -ROAN	B	16	0.09
			S	415	2.17
Instance	ins	<i>mountain</i> -ALPS	B	363	2.13
			S	8	0.04
Meronym	mer	<i>car</i> -WHEEL	B	8	0.05
			S	1,175	6.16
Holonym	hol	<i>seagull</i> -FLOCK	B	871	5.10
			S	40	0.21
Made_of	mad	<i>comb</i> -PLASTIC	B	21	0.12
			S	236	1.24
Perceptual_property	ppe	<i>cat</i> -BIG	B	155	0.91
			S	1,988	10.41
Non-directly_perceptual_property	pnf	<i>cat</i> -SOCIABLE	B	1,142	6.69
			S	633	3.32
Entity_concrete	eco	<i>airplane</i> -PERSON	B	699	4.10
			S	3,606	18.89
Entity_abstract	eab	<i>dog</i> -FRIENDSHIP	B	3,383	19.83
			S	1,027	5.38
			B	1,107	6.49

Event	eve	<i>bird</i> -FLY	S	3,723	19.50
Subjective_evaluation	eva	<i>lion</i> -FEAR	B	3,903	22.87
			S	478	2.50
Space	spa	<i>zebra</i> -SAVANNA	B	655	3.84
			S	1,643	8.61
Time	tim	<i>tomato</i> -SUMMER	B	1,291	7.57
			S	578	3.03
Manner	man	<i>stroke</i> -GENTLY	B	568	3.33
			S	388	2.03
Quantity	qua	<i>car</i> -FOUR (wheels)	B	409	2.40
			S	843	4.42
			B	446	2.61

Appendix D

Archived materials

The BLIND data files described in this appendix can be downloaded from [[LINK AS PROVIDED BY BRM EDITORS; ARCHIVE WITH FULL BLIND DATA IS INCLUDED WITH THE SUBMISSION FOR REVIEWERS' PERUSAL]]. BLIND is released under a Creative Commons Attribution ShareAlike license (<http://creativecommons.org/licenses/by-sa/2.5/>).

The BLIND norms comprise the annotated production data (*production-data.txt*), separate measures for concepts (*concept-measures.txt*) and features (*feature-measures.txt*), measures for each concept's features (*concept-feature-measures.txt*), and concept pair similarities (*concepts-cosine-matrix.txt*). The measures are analogous to those reported by McRae et al. (2005) and Kremer and Baroni (2011), for comparability. All files are in simple text format, with variables arranged in columns separated by a tabulator space; the variable names are listed in the first line of each file.

Production data

The file *production-data.txt* contains annotated concept stimuli and subject responses as described in Table D1.

Table D1

Variables in the production data file

Variable name	Description
Subject	A unique numerical code identifying the subject.
Group	Whether subject is blind (b) or sighted (s).
ConceptIt	The stimulus concept name in Italian.
ConceptEn	English translation of the concept name.
POS	Part of speech of the concept (n if noun, v if verb).
Class	The class of the concept as detailed in the tables of appendix A above, with the following abbreviations: abs_event for abstract

	event, art_loc for artifactual location, aud_event for auditory event, nat_loc for natural location, tac_event for tactile event, vis_event for visual event.
Phrase	Transcription of the feature as produced by the subject (with minor editing, e.g., normalizing disfluencies).
FeatureIt	The feature in Italian in normalized format (see Section
	Transcription and labeling above for the normalization method).
FeatureEn	Translation of the normalized feature in English.
FeatureTypeGranular	The type of the relation between the feature and the concept, as detailed in Table C1.
FeatureTypeCoarse	Same as FeatureTypeGranular except that the types hol , mad and mer have been merged into par (part) and ant , coo , exa , ins and syn have been merged into tax (taxonomic excluding isa).
Polarity	Whether the subject asserted (<i>flies</i> ; value p) or negated the feature (<i>does not fly</i> ; value n)
FeatureOrder	Number recording the order in which the features were produced in the concept description by the subject.

Measures

All variables reported in the files to be documented next were extracted from a version of the production data from which we removed those rows containing a feature that was produced by a single blind or sighted subject for the corresponding concept (e.g., the row with concept *mare* “sea” and feature *sporco* “dirty” produced by sighted subject 1 was filtered out, because this was the only sighted subject who produced *dirty* as a feature of *sea*). Repeated feature productions by the same subject were also excluded from the computation of the relevant measures. Whenever a variable name has suffix Blind or Sighted, the corresponding measure was computed separately for the two subject groups.

Concept measures. The file *concept-measures.txt* contains measures pertaining to the concepts used in the norms. The variables in this file are described in Table D2.

Table D2

Variables in the concept measures file

Variable name	Description
ConceptEn	See Table D1.
ConceptIt	See Table D1.
POS	See Table D1.
Class	See Table D1.
LetterCount	Number of letters of the Italian concept name.
SyllableCount	Number of syllables of the Italian concept name.
FreqItWaC	Number of occurrences of the (Italian) concept name in the itWaC corpus (considering occurrences in both singular and plural form).
LogFreqItWaC	Natural logarithm of FreqItWaC.
FreqRepubblica	Number of occurrences of the concept name in the la Repubblica corpus.
LogFreqRepubblica	Natural logarithm of FreqRepubblica.
FreqWikipedia	Number of occurrences of the concept name in the Italian Wikipedia corpus.
LogFreqWikipedia	Natural logarithm of FreqWikipedia.
MeanFamiliarity(Blind Sighted)	Mean familiarity rating assigned by the subjects to the concept in a post-test survey. Subject rated the concepts on a 3-point scale, ranging from 3 (much experience with the object denoted by a noun or event/action denoted by a verb) to 1 (little or no

	experience).
SDFamiliarity(Blind Sighted)	Standard deviation of the familiarity ratings assigned to the concept.
FeaturesCount(Blind Sighted)	Number of distinct features produced for the concept.
DistinguishingFeaturesCount(Blind Sighted)	Number of distinguishing features produced for the concepts. A feature is distinguishing if it was produced for maximally two concepts.
DistinguishingFeaturesPercent(Blind Sighted)	Percentage of distinguishing features over overall feature count for the concept.
AverageDistinctivenessAcrossFeats(Blind Sighted)	Average distinctiveness across a concept features. The distinctiveness of a feature is the reciprocal of the number of concepts for which it was produced.
MeanCueValidity(Blind Sighted)	Average cue validity across the features of a concept. Cue validity is the conditional probability of a concept given a feature. It was calculated as the production frequency of a feature for a particular concept divided by the production frequency of that feature for all concepts.
IntercorrelatedFeatsCount(Blind Sighted)	Number of feature pairs of a concept for which features are intercorrelated, considering only those features appearing with at least three concepts. The correlation computation was based on the comparison of the feature production frequencies across the

	concepts. Feature pairs were considered
	correlated if they shared at least 6.5% of their
	variance (that is, the square of their Pearson
	correlation coefficient was at least 0.065).
InterrelatedFeatsPercent(Blind Sighted)	Percentage of intercorrelated feature pairs of
	a concept over the count of all the possible
	pairings of features of the concept.
InterrelationalDensity(Blind Sighted)	Sum of the percentage of shared variance
	across a concept intercorrelated feature pairs.

Feature measures. The file *feature-measures.txt* contains measures pertaining to the features produced by the subjects. The variables in this file are described in Table D3.

Table D3

Variables in the feature measures file

Variable name	Description
FeatureEn	English translation of the normalized feature name.
FeatureIt	Colon-delimited list of all Italian normalized feature names that were mapped to the same English translation, in order of production frequency (e.g., FeatureEn <i>belief</i> corresponds to FeatureIt <i>credenza:credo</i>).
FeatureTypeCoarse	Colon-delimited list of all coarse feature types (see Table D1) that were assigned to the feature, in order of production frequency.
FeatureTypeGranular	Colon-delimited list of all granular feature types that were assigned to the feature, in order of production

	frequency.
TotCount(Blind Sighted)	Overall production frequency of the feature across all concepts (if the feature was not produced by one of the two subject groups, corresponding TotCount is 0).
ConceptCount(Blind Sighted)	Number of distinct concepts the feature was produced for (if the feature was not produced by one of the two subject groups, corresponding ConceptCount is 0).
NegatedCount(Blind Sighted)	Number of times the feature was negated (if feature was not produced by one of the two groups, corresponding NegatedCount value is NA).
NegatedPercentage(Blind Sighted)	Percentage of times the feature was negated over all the times the feature was produced (if feature was not produced by one of the two groups, corresponding NegatedPercentage value is NA).
Distinguishing(Blind Sighted)	Whether feature is distinguishing (D) or not (ND) according to the criterion spelled out in Table D2 (if feature was not produced by one of the groups, corresponding Distinguishing value is NA).
Distinctiveness(Blind Sighted)	Distinctiveness score of the feature, calculated as described in Table D2 (NA if feature was not produced by the relevant group).

Concept-feature measures. The file *concept-feature-measures.txt* contains measures pertaining to the attested combinations of concepts and features. All the concept-related variables described in Table D2 are repeated in *concept-feature-measures.txt*. The following feature-related variables (described in Table D3) are repeated in *concept-feature-measures.txt*: FeatureEn, DistinguishingBlind, DistinguishingSighted, DistinctivenessBlind,

DistinctivenessSighted. The additional variables in *concept-feature-measures.txt* are described in Table D4.

Table D4

Additional variables in the concept-feature measures file

Variable name	Description
FeatureIt	Colon-delimited list of all Italian normalized feature names that were mapped to the same English translation, in order of production frequency (names and corresponding counts limited to the cases in which the feature was produced in response to the concept).
FeatureTypeCoarse	Colon-delimited list of all coarse feature types that were assigned to the feature, in order of production frequency (types and corresponding counts limited to the occurrences of the feature with the concept).
FeatureTypeGranular	Colon-delimited list of all granular feature types that were assigned to the feature, in order of production frequency (same restriction as for coarse types).
ConceptFeatureCount(Blind Sighted)	Number of subjects who produced the feature for the concept (0 if the feature was not produced in response to the concept by this subject group).
ConceptFeatureRank(Blind Sighted)	ConceptFeatureCount-based rank of the feature among those produced for the concept (NA if the

	feature was not produced in response to the
	concept by this subject group).
NegatedConceptFeature(Blind Sighted)	Whether at least two subjects negated the concept- feature relation (NA if the concept-feature pair was never produced by this subject group).

Concept similarities. The file *concepts-cosine-matrix.txt* contains, for all concept pairs, a score quantifying the similarity of their production frequency distributions across features. Production frequency distributions are kept separated for the two subject groups, so that concepts can be compared within or across groups. In particular, the concepts as represented by their feature frequency distributions pooled across blind subjects are suffixed by *-b*, and they are suffixed by *-s* when they are represented by their feature distributions pooled across sighted subjects (e.g., *dog-b* is the concept of dog described by blind subjects, *dog-s* is the same concept described by sighted subject). Similarity is measured by the cosine of the vectors representing two concepts on the basis of feature production frequencies. Values range from 0 (vectors are orthogonal, no similarity) to 1 (identical concepts).

Each line of *concepts-cosine-matrix.txt* after the first presents a concept followed by its cosine with all concepts (including itself), in fixed order (the first line contains the ordered list of concepts). For example, the first 3 values on the *dog-b* row are 0.10556, 0.13283 and 0.12657. Since, as reported on the first line, the first 3 concepts in the ordered list are *airplane-b*, *airplane-s* and *apartment-b*, this means that *dog-b* has a similarity of 0.10556 with *airplane-b*, of 0.13283 with *airplane-s* and of 0.12657 with *apartment-b*.