

Japanese normative set of 359 pictures

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This study provides Japanese normative measures for 359 line drawings, including 260 pictures (44 redrawn) taken from Snodgrass and Vanderwart (1980). The pictures have been standardized on voice key naming times, name agreement, age of acquisition, and familiarity. The data were compared with American, Spanish, French, and Icelandic samples reported in previous studies. In general, the correlations between variables in the present study and those in the other studies were relatively high, except for name agreement. Naming times were predicted in multiple regression analyses by name agreement. The full set of the norms and the new pictures may be downloaded from www.psychonomic.org/archive/.

An increasing number of cognitive psychologists have shown an interest in pictorial stimuli developed for cognitive experiments. Snodgrass and Vanderwart (1980) presented a normative picture set of 260 line drawings of common objects that has helped in the investigation of such operations as encoding, storage, and retrieval processes. Using the 250 pictures from the original set of Snodgrass and Vanderwart, Snodgrass and Yuditsky (1996) reported age-of-acquisition (AoA) ratings, naming times, and correct naming rates. They showed that naming times were predicted in multiple regression analyses by name agreement (NA) or concept agreement, AoA ratings, word frequency (FREQ) taken from Kučera and Francis (1967), and familiarity (FAM) taken from Snodgrass and Vanderwart. They compared voice key and keypress responses and suggested that the former worked remarkably well as an indicator of naming difficulty.

Pictorial stimuli have been standardized in different languages. For example, Alario and Ferrand (1999) collected French normative data for the 400 pictures used by Cycowicz, Friedman, Rothstein, and Snodgrass (1997), which included the 260 pictures in Snodgrass and Vanderwart (1980). Bonin, Peereman, Malardier, Méot, and Charlard (2003) presented a new French set of 299 pictures

for psycholinguistic studies. Dell'Acqua, Lotto, and Job (2000) collected Italian normative data for 266 pictures that were different from those in Snodgrass and Vanderwart, although some pictures were conceptually similar to those in Snodgrass and Vanderwart. Sanfeliu and Fernandez (1996) and Cuetos, Ellis, and Alvarez (1999) have obtained Spanish normative data. Pind, Jónsdóttir, Gisurardóttir, and Jónsson (2000) and Pind and Tryggvadóttir (2002) presented Icelandic norms for the Snodgrass and Vanderwart pictures. Bates et al. (2003) studied timed picture naming in seven languages. They used 520 line drawings, including 174 from the original Snodgrass and Vanderwart set.

In Japan, Nishimoto and Yasuda (1982), Matsukawa (1983), and Nishimoto and Hayashi (1996) obtained Japanese data, using almost the same procedures as Snodgrass and Vanderwart (1980). Nishimoto and Yasuda reported that some of the original pictures were not recognizable for Japanese participants, mainly because the pictures (e.g., *thimble*, *artichoke*, *seal*, *caterpillar*, and *saltshaker*) were not typical or familiar to them. For example, *thimble* was recognized as *trash can*, and *artichoke* as *bud*. Therefore, Nishimoto and Hayashi redrew 44 pictures. They also added 99 new pictures. In the study, a total of 143 pictures were standardized for the Japanese, following the procedure used in Snodgrass and Vanderwart. Nishimoto and Yasuda collected four measures—that is, NA, image agreement, conceptual FAM, and visual complexity. For newly added or redrawn pictures in Nishimoto and Hayashi, the same measures, except visual complexity, were collected. However, one of the deficits in Nishimoto and Hayashi's study was that a standardized measure of naming time was not obtained.

The present study has three goals. First, we provide a Japanese standardized set of 359 pictures, including 216 pictures from Snodgrass and Vanderwart (1980) and 143 from Nishimoto and Hayashi (1996), with an emphasis

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on naming time data. Following Snodgrass and Yuditsky (1996), four measures—NA, conceptual familiarity, naming time, and AoA—are to be standardized. NA, image agreement, conceptual FAM, and visual complexity, which constituted the principal norms in Snodgrass and Vanderwart, have been collected for the original 260 pictures in Nishimoto and Yasuda (1982). In the present study, we measured naming time and AoA, which had not been collected in Japanese standardization, in addition to FAM and NA.

Second, we make a cross-cultural comparison with previous foreign picture standardization studies. Third, we also consider whether naming time could be predicted by one or more independent variable(s). For this purpose, we used FREQ data taken from Amano and Kondo (2000), which are discussed in more detail in the Method section.

METHOD

Participants

One hundred twenty Waseda University students participated in the naming procedure, divided into three groups of 40 each. In the FAM rating procedure, 139 students were divided into three groups: 49 for Set 1, 40 for Set 2, and 50 for Set 3. In the AoA rating procedure, 149 students were divided into three groups: 54 for Set 1, 46 for Set 2, and 49 for Set 3. All participation was voluntary. The participants were randomly assigned to groups, and no participants took part in more than one procedure in the experimental session.

Stimuli and Apparatus

The stimuli were 260 pictures from Snodgrass and Vanderwart's (1980) set (44 redrawn) and 99 pictures newly added for the Japanese population. Appendix A shows the dominant names and norms. Appendix B shows the redrawn and newly added pictures. The 359 pictures were numbered from 1 to 359 according to Japanese Kana order (syllabary). In accordance with Snodgrass and Yuditsky's (1996) procedure, we divided the pictures into three sets on the basis of the picture number: If the remainder was 1 when the picture number was divided by 3, the picture was assigned to Set 1; if the remainder was 2, the picture was assigned to Set 2; otherwise, the picture was assigned to Set 3. Thus, 120 pictures were in Set 1 and Set 2, and 119 were in Set 3 (see Appendix A). In the naming task, the participants wore a headset microphone connected to a voice key. An MS-DOS-based computer program automatically controlled the presentation of the pictures and the voice key recording. Pictures were presented in black and white in the center of a CRT computer monitor. The pictures were 400 × 300 pixels, presented 60–80 cm away from the participant, at a visual angle of 11°–15°.

Procedure

Naming procedure. The participants were asked to articulate the name of the presented picture as quickly and accurately as possible, via the headset microphone. Each trial was run as follows. The signal, "get ready," was displayed for 500 msec, followed by a blank screen for 500 msec, and then a picture was presented. When the participant made a response or 10 sec had elapsed, the picture was erased. Then the response time (RT) and feedback from the experimenter of "correct," "error," or "voice key error" were displayed. After 20 practice trials, the experimental session, consisting of 120 trials (or 119 trials for Set 3), was presented. A short break was given after every 30 trials. Because, as Székely et al. (2003) have pointed out, the presentation order confounds naming time, the order of picture presentation was randomized for each participant. Three buffer trials were presented immediately before the start of the main trials and after each break. The pictures used in the practice

trials and in the buffer trials were taken from a set of pictures that were not assigned to that participant.

Familiarity rating. The participants rated the FAM of the concepts depicted in the pictures. The participants were given a booklet including the pictures, their dominant names obtained from Nishimoto and Yasuda (1982) and Nishimoto and Hayashi (1996), and FAM scales. Pictures in the booklet were randomly ordered across participants. The participants were instructed to judge how familiar the concept was on a 7-point scale (*extremely unfamiliar* to *extremely familiar*). If they did not know the object, they were asked to respond "don't know the object." It was emphasized that the participants should rate the FAM of the concept that the picture represented, not the picture itself.

Age-of-acquisition rating. The participants rated the AoA for the concept depicted in the pictures. Booklets including the pictures, their dominant names, and AoA scales were given to the participants. The order of the items was randomized across participants. The dominant names for the pictures were obtained from Nishimoto and Yasuda (1982) and Nishimoto and Hayashi (1996). Similar to Carroll and White (1973a, 1973b), the participants were instructed to estimate when they had learned the concept, using a 9-point scale (2 years, 3 years, 4 years, 5 years, 6 years, 7–8 years, 9–10 years, 11–12 years, and 13 years or older). They were asked to rate the concept that the picture represented, not the picture itself.

RESULTS AND DISCUSSION

Two Criteria for Naming Correctness

To determine how accurately the participants named the pictures, both strict and liberal criteria for naming correctness were applied, although Snodgrass and Yuditsky (1996) suggested using only liberal criteria. A name response was judged as strictly correct if it satisfied any one of the following conditions: (1) It was the same as the correct notation (i.e., the most frequently given name in Nishimoto and Yasuda, 1982, and in Nishimoto and Hayashi, 1996); (2) it was a part of the correct notation (e.g., *shirt* for *dress shirt* or *finger* for *index finger*); (3) it was an abbreviated word starting with the same phoneme as the correct notation (e.g., *heri* for *herikoputâ* [helicopter]); (4) it was the first word of a correct notation including two or more words (e.g., *ashi* for *ashi-no-yubi* [toe]); (5) it was an idiomatic name subsuming the correct notation (e.g., *happa* for *ha* [leaf] or *chouchou* for *chou* [butterfly]); or (6) it was the more authentic name (e.g., *seiyo-nashi* for *nashi* [pear]). We regarded the name response as liberally correct when at least 2 participants named the same word for a picture, even when it was a wrong answer.

Exclusion of Naming Data Outliers

Before conducting the analyses, the naming data of some of the participants were excluded as outliers. First, the data of the participants whose naming correctness was below 75%, using the strict criteria, were excluded. Second, the data of the participants whose naming time deviated more than two standard deviations (*SDs*) from the mean naming time in each set were excluded. The remaining naming data in each set and summary statistics are as follows: Set 1, $n = 34$, mean naming correctness (strict criteria) = 81.2%, mean naming time (*SD*) = 1,148 msec (401); Set 2, $n = 26$, mean naming correctness (strict criteria) = 80.5%, mean naming time (*SD*) = 1,101 msec

(372); Set 3, $n = 23$, mean naming correctness (strict criteria) = 79.4%, mean naming time (SD) = 1,171 msec (422).¹

Equivalence of Sets

As was described above, a total of 359 pictures were divided into three sets, and the participants were assigned randomly to each set. In accordance with Snodgrass and Yuditsky (1996), the equivalence of the three sets was checked in terms of naming times. Analyses of variance on the sets and the participant groups were conducted separately. The results showed that there were no significant differences among the sets or groups [for picture sets, $F(2,356) = 0.954$, $p = .39$; for participant groups, $F(2,80) = 0.733$, $p = .48$]. Therefore, the three sets were merged in subsequent analyses.

Naming Failures

We classified naming failures into the following four types. (1) DKO (don't know object), where the participants did not know what the picture depicted; 0.88% of the responses fell into this category. (2) DKN (don't know name), where the participants knew the object depicted but did not know what it was called, which made up 1.05% of the responses. (3) TOT (tip of the tongue), where the participants knew the object but the name was on "the tip of the tongue" and could not be recalled within the allotted time, which made up 0.84% of the responses. (4) ERROR, where the voice key malfunctioned or there was unexpected activation due to the participant's coughing, stammering, and so forth, which made up 2.16% of the responses.

Measures for Standardization

Response time (strict/liberal, trimmed RT). Mean RT for a picture was computed by deleting RTs that exceeded two SD s from the mean, because these trimmed RTs have an advantage in split-half reliability (Snodgrass & Yuditsky, 1996). RT_{st} is the mean RT calculated on the basis of trimmed RTs for a dominant name according to the strict criteria in picture naming, and RT_{lib} is the one for both dominant and nondominant names according to the liberal criteria.

Name agreement. NA was computed using the strict and liberal criteria. NA_{st} is the percentage of participants giving the same name as a dominant name, using the strict criteria, and NA_{lib} is the percentage when the liberal criteria are used.

H . A measure for name disagreement, called H , reported by Snodgrass and Vanderwart (1980) was calculated. H is defined as

$$H = \sum_{i=1}^k P_i \log_2(1/P_i),$$

where k is the number of different names produced for a picture and P_i is the proportion of participants producing the i th name. Different from measures of NA (NA_{st} and NA_{lib}), H takes into account the frequency distribution

and number of alternative names for a picture. H is the same as U , the measure of codability of a stimulus (Snodgrass & Yuditsky, 1996).

Familiarity and age of acquisition. The participants rated the FAM of each picture on a 7-point scale. The mean FAM was computed for all of the pictures. We also computed the mean AoA, on the basis of the 9-point scale.

Frequency. The FREQ for the name of each picture was determined from Amano and Kondo (2000), the most recent and one of the most exhaustive corpuses for Japanese naming words. They used articles published during 1985–1998 in *Asahi-Shimbun*, one of the major newspapers in Japan: the corpus consists of around 13.9 million sentences (equal to around 1.2 GB of text data). If a picture had two or more "correct" names, using the strict criteria, the frequency of that picture was defined as the total of the frequencies for these names. LogFREQ, the transformed measure of FREQ, is computed by the formula $\log(1 + x)$. When a picture has one or more homonyms, FREQ could not be collected, because the FREQ of such an item was summed with other concepts having the same phonemes in the database. FREQ could be collected for 236 pictures with no homographic names.

Number of morae. We collected the number of morae (MORA) of each name. Mora is a Japanese speech unit, which approximately corresponds to a syllable in English.

Correlations Among Measures

Table 1 shows correlations among the measures (i.e., RT_{st} , RT_{lib} , NA_{st} , NA_{lib} , AoA, FAM, H , FREQ, LogFREQ, and MORA). In calculating the correlations on FREQ and LogFREQ, only 236 pictures mentioned above were included. Almost all the correlations among variables were statistically significant. As was expected, H and NA_{st} were highly correlated negatively, because H represents name disagreement, on the one hand, and NA_{st} represents name agreement, on the other hand. In addition, H and RT showed a positive correlation. Similar to Snodgrass and Yuditsky (1996), FAM was negatively correlated with AoA. AoA was correlated positively with RT and H .

Correlations With Preceding Studies

The data were compared with those in the studies of American English (Snodgrass & Vanderwart, 1980; Snodgrass & Yuditsky, 1996), French (Alario & Ferrand, 1999), Spanish (Cuetos et al., 1999), and Icelandic (Pind et al., 2000). Correlations were calculated using the data for the original pictures of Snodgrass and Vanderwart. As is shown in Table 2, almost all the correlations are statistically significant. The correlations of FAM and of AoA are higher than those of the other variables. Correlations concerning NA are relatively low, especially the correlation between Japanese NA_{lib} and Spanish NA, which did not reach significance. With regard to this finding, Dell'Acqua et al. (2000) suggested that measures of NA depend on language more than do the other measures. However, FAM does not depend as much on linguistic aspects, because it was rated on the basis of the picture

Table 1
Correlations Among the Measures

	RT _{st}	RT _{lib}	NA _{st}	NA _{lib}	H	AoA	FAM	FREQ	LogFREQ	MORA
RT _{st}	1.00									
RT _{lib}	.95**	1.00								
NA _{st}	-.69**	-.68**	1.00							
NA _{lib}	-.73**	-.77**	.64**	1.00						
H	.67**	.71**	-.83**	-.65**	1.00					
AoA	.51**	.50**	-.56**	-.48**	.57**	1.00				
FAM	-.38**	-.36**	.32**	.31**	-.24**	-.58**	1.00			
FREQ	-.18**	-.19**	.16*	.12	-.16*	-.29**	.33**	1.00		
LogFREQ	-.35**	-.37**	.33**	.39**	-.33**	-.47**	.52**	.61**	1.00	
MORA	.19**	.20**	-.20**	-.18**	.23**	.40**	-.18**	-.25**	-.34**	1.00

Note—RT_{st}, naming time using strict criteria (*n* = 359); RT_{lib}, naming time using liberal criteria (*n* = 359); NA_{st}, name agreement using strict criteria (*n* = 359); NA_{lib}, name agreement using liberal criteria (*n* = 359); *H*, statistics of name disagreement; AoA, age of acquisition (*n* = 359); FAM, familiarity (*n* = 359); FREQ, frequency (*n* = 236); LogFREQ, log frequency (*n* = 236); MORA, number of morae (*n* = 359). **p* < .05. ***p* < .01.

itself, rather than on the basis of the word used to name it (Sanfeliu & Fernandez, 1996).

Multiple Regression Analysis

Simultaneous multiple regression analyses were carried out on RT_{st}, using AoA, FAM, LogFREQ, MORA, and one of the three measures of NA (NA_{st}, NA_{lib}, and *H*) as predictor variables. The pictures for which we could not obtain frequency data were excluded from the analyses. Table 3 shows the results. Regardless of which variable was used as the measure of NA, all the equations were significant (all *ps* < .01). The equation with NA_{lib} showed the highest multiple *R*. In the equation with NA_{lib}, the variable that contributed the most was NA_{lib}, followed by AoA. FAM, LogFREQ, and MORA were not significant. In the equation including NA_{st}, the most reliable source of variance was NA_{st}. AoA, FAM, LogFREQ, and MORA were not significant. In the equation with *H*, *H* made the greatest contribution, and the next was FAM. AoA, LogFREQ, and MORA were not significant.

Taken together, these results indicate that the most reliable predictors were the measures of NA (NA_{st}, NA_{lib}, *H*), which is similar to the findings in studies of French (Alario et al., 2004), American English (Snodgrass & Yuditsky, 1996), Spanish (Cuetos et al., 1999), and Welsh (Barry, Morrison, & Ellis, 1997). Among the three measures of

NA, NA_{lib} contributed the most to account for RT_{st}. This result is similar to that in Snodgrass and Yuditsky (1996), where the most significant source of variance was concept agreement, which is the percentage of participants who gave the dominant name or its synonym. This measure resembles NA_{lib}, the percentage of participants giving the name that at least 2 participants gave, because in most cases responses that were correct according to this liberal criterion shared identical meanings.

Second, whether AoA or FAM reached a significant level depended on which variable was used as the measure of NA. When *H* was used, FAM was significant, whereas AoA was not significant. In contrast, when NA_{lib} was used, AoA was significant but FAM was not. When NA_{st} was used, neither FAM nor AoA was significant. These results are inconsistent with those in the previous studies, which showed AoA to be a robust predictor (e.g., Alario et al., 2004; Bonin, Chalard, Méot, & Fayol, 2002; Cuetos et al., 1999; Snodgrass & Yuditsky, 1996). Therefore, to estimate the possible influence of AoA on naming time, we temporarily excluded FAM from the analysis, but AoA was not significant in the equations with NA_{st} and *H*. A possible reason for the unstable effect of AoA is that both FAM and AoA in the present study were rated for the *concepts* depicted in the pictures. However, in the other studies, FAM was rated for the *concepts*, whereas AoA was

Table 2
Correlations Among the Measures in the Present Study and Foreign Samples From Previous Studies

	RT _{st}	RT _{lib}	NA _{st}	NA _{lib}	H	AoA	FAM	FREQ	LogFREQ
American (S&Y)	.56**	.60**	.27**	.50**	—	.70**	—	—	—
American (S&V)	—	—	.29**	.35**	.38**	.66**	.78**	.51**	.61**
Spanish	.39**	.39**	.20*	.16†	—	.59**	.83**	.18	.58**
French	—	—	.34**	.31**	.40**	.64**	.80**	.44**	.54**
Icelandic	—	—	.16*	.14*	.28**	.56**	.77**	.67**	.56**

Note—Samples were collected for American English [American (S&Y), Snodgrass & Yuditsky, 1996; American (S&V), Snodgrass & Vanderwart, 1980]; Spanish (Cuetos, Ellis, & Alvarez, 1999); French (Alario & Ferrand, 1999); and Icelandic (Pind, Jónsdóttir, Gissurardóttir, & Jónsson, 2000). RT_{st}, trimmed RT using strict criteria; RT_{lib}, trimmed RT under liberal criteria; NA_{st} and NA_{lib}, name agreement using strict and liberal criteria; *H*, a measure for name disagreement; AoA, age of acquisition; FAM, familiarity; FREQ, frequency; LogFREQ, log frequency. Dashes indicate that data were not available. LogFREQ of Spanish sample was from fAC (adult word frequency) in Cuetos et al. (1999). **p* < .05. ***p* < .01. †*p* < .10.

Table 3
Multiple Regression Analyses

	Beta Weight	<i>t</i> Value	Beta Weight	<i>t</i> Value	Beta Weight	<i>t</i> Value
NA _{st}	-.59	-10.26**	—	—	—	—
NA _{lib}	—	—	-.64	-12.50**	—	—
<i>H</i>	—	—	—	—	.58	9.64**
FAM	-.10	-1.59	-.08	-1.49	-.17	-2.72**
AoA	.06	0.81	.12	2.05*	.02	0.32
LogFREQ	-.06	-1.03	.01	0.17	-.05	-0.76
MORA	.05	0.89	.02	0.47	.04	0.67
<i>R</i> ²		.50		.57		.48
<i>F</i> value		46.01**		60.06**		42.64**

Note—NA_{st}, name agreement under strict criteria; NA_{lib}, name agreement under liberal criteria; *H*, a measure for name disagreement; FAM, familiarity; AoA, age of acquisition; LogFREQ, log frequency; MORA, number of morae. **p* < .05. ***p* < .01.

rated for the *names* of the pictures (Alario et al., 2004; Cuetos et al., 1999; Dell'Acqua et al., 2000; Pind et al., 2000; Snodgrass & Yuditsky, 1996).

Third, LogFREQ did not make a significant contribution, as was also shown in Dell'Acqua et al. (2000). This might be attributed to the nature of the FREQ data used in our study. The corpus of the newspaper may not adequately represent the various texts that readers are exposed to. In addition, the FREQ used in our study did not take account of childhood data. Bonin, Barry, Méot, and Chalard (2004) reported that naming time was predicted by cumulative FREQ of exposure throughout a lifetime, including childhood. Finally, MORA was not a significant predictor, similar to the findings in several studies in which number of syllables or phonemes was used as a predictor (Bonin et al., 2002; Bonin et al., 2003; Dell'Acqua et al., 2000).

CONCLUSIONS

The main goal of the present study was to develop a Japanese normative set of pictures and to compare the data with those in preceding studies from different cultures. A total of 359 pictures, including 260 from Snodgrass and Vanderwart (1980), were adopted for standardization. Forty-four pictures of the 260 were redrawn for Japanese audiences, and 99 were newly added. Variables such as naming time, NA, FAM, and AoA were measured for standardization.

The correlation of data from our study with data from investigations of four different cultures (American, French, Spanish, and Icelandic) was relatively high for almost all the measures, except for NA. The most reliable predictors of naming times were three measures of NA—namely, NA_{st}, NA_{lib}, and *H*, especially NA_{lib}. In addition, either AoA or FAM was a significant predictor, depending on which measure of NA (NA_{st}, NA_{lib}, or *H*) was adopted as an independent variable. The present Japanese normative measures for the 359 pictures can be used in research with Japanese-speaking participants. These pictures will be useful for researchers in different fields of experimental

psychology, such as attention, memory, perception, cognitive neuropsychology, and language.

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NOTE

1. The number of excluded participants seemed relatively large, which could influence the results. Therefore, we also conducted the same analyses of the data for the entire sample of participants and compared the results with those for the outlier-eliminated data sample. The correlations between these two samples were quite high for mean naming times and correctness ($RT_{st} = .96$, $RT_{lib} = .97$, $NA_{st} = .99$, $NA_{lib} = .95$). The results of the regression analyses were almost the same. Therefore, we present the results only for the outlier-eliminated data set.

ARCHIVED MATERIALS

The following materials and links may be accessed through the Psychonomic Society's Norms, Stimuli, and Data archive, <http://www.psychonomic.org/archive/>.

To access these files, search the archive for this article using the journal (*Behavior Research Methods*), the first author's name (Nishimoto), and the publication year (2005).

FILE: Nishimoto-BRM-2005.zip

DESCRIPTION: The compressed archive file contains the following folders and files:

Nishimoto_etal_2005_appendix_a.xls, containing the norms developed by the present authors as a 217K binary file generated by Microsoft Excel 2002 for Microsoft Windows. Each row represents one of 359 pictures; each column represents one of the eight dependent measures besides the names (English and Japanese), IDs, and types of the pictures. Japanese names are described in Japanese Katakana, using a Japanese font.

Nishimoto_etal_2005_appendix_a.txt, a 25K tab-delimited text file of the Nishimoto_etal_2005_appendix_a.xls. In this file, Japanese names are omitted.

Nishimoto_etal_2005_about_appendix_a.txt, a full description of the content of Nishimoto_etal_2005_appendix_a.xls, including extended definitions of the columns of the norm (a 2K plain text file).

Nishimoto_etal_2005_appendix_b_summary.pdf, including the thumbnails of all pictures (8,035K).

appendix_b, a 4,755K folder including 143 jpeg-format files (XXX.jpg) of the redrawn or newly added pictures from Snodgrass and Vanderwart (1980). The numbers in the name of each file correspond to the picture numbers in Appendices A and B of Nishimoto et al. (2005), or Nishimoto_etal_2005_appendix_a.xls.

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APPENDIX A
Standardized Measures of 359 Line Drawings

In the Appendix that follows, each column, from left to right, means: (1) No., item ID number; (2) type of picture source (O, Original Snodgrass and Vandewarnt, [S&V, 1980] pictures; C, changed or modified from Snodgrass and Vandewarnt's pictures; A, newly created or added pictures; (3) set number in the present standardization; (4) dominant name in Japanese-Katakana; (5) dominant name in Japanese-roman (* means that the meaning of Japanese name is different from that of English name); (6) name in English; (7) original ID number for item taken from Snodgrass and Vandewarnt; (8) RT_{st}, mean RT (in milliseconds) under the strict criteria; (9) RT_{lib}, mean RT (in milliseconds) on the liberal criteria; (10) H, statistics of name disagreement; (11) NA_{st}, percentage of NA under the strict criteria; (12) NA_{lib}, percentage of NA under the liberal criteria; (13) AoA, mean rating of age-of-acquisition; (14) FAM, mean rating of FAM; (15) MORA, number of morae.

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		AoA	FAM	MORA
										NA _{st}	NA _{lib}			
1	O	1	アイロン	airon	iron	123	921	921	0.00	100.0	100.0	4.4	5.3	4
2	O	2	アイロンダイ	airon-dai	ironing board	124	1,481	1,483	0.77	77.5	85.0	5.5	4.7	6
3	O	3	アコーデオン	akôdeion	accordion	1	1,653	1,609	1.13	55.0	62.5	5.8	2.5	6
4	O	1	アシ	ashi	foot	94	704	704	0.00	100.0	100.0	1.6	6.6	2
5	O	2	アシ	ashi	leg	134	764	764	0.34	97.5	97.5	2.6	6.7	2
6	O	3	アシノユビ	ashi no yubi	toe	235	1,323	1,380	1.90	85.0	95.0	3.0	6.2	5
7	C	1	アスパラガス	asuparagasu	asparagus	11	1,626	1,661	1.47	77.5	85.0	5.5	5.3	6
8	O	2	アヒル	ahiru	duck	81	1,253	1,218	1.23	77.5	85.0	3.7	4.8	3
9	O	3	アリ	ari	ant	5	908	908	0.00	100.0	100.0	2.4	4.8	2
10	C	1	イエ	ie	house	122	911	911	0.18	92.5	92.5	2.2	6.7	2
11	O	2	イカリ	ikari	anchor	4	1,078	1,078	0.00	90.0	90.0	6.1	2.8	3
12	O	3	イス	isu	chair	53	707	707	0.00	97.5	97.5	2.6	6.1	2
13	O	1	イス	isu	stool	218	852	852	0.18	92.5	92.5	1.9	6.5	2
14	O	2	イチゴ	ichigo	strawberry	220	911	911	0.00	95.0	95.0	2.8	6.4	3
15	O	3	イト	ito	spool of thread	214	1,319	1,254	1.17	72.5	90.0	4.0	4.3	2
16	C	1	イド	ido	well	253	1,292	1,292	0.00	95.0	95.0	4.7	2.7	2
17	O	2	イトツムギ	ito-tsumugi	spinning wheel	213	1,347	2,210	2.92	2.5	60.0	6.7	2.5	5
18	O	3	イヌ	inu	dog	73	1,096	1,096	0.00	90.0	90.0	2.2	5.8	2
19	A	1	イルカ	iruka	dolphin		906	906	0.17	97.5	97.5	3.3	4.1	3
20	O	2	ウサギ	usagi	rabbit	182	743	743	0.00	97.5	97.5	2.8	5.5	3
21	O	3	ウシ	ushi	cow	68	1,071	1,071	0.00	100.0	100.0	3.1	4.2	2
22	O	1	ウデ	ude	arm	7	1,191	1,217	0.89	67.5	97.5	2.8	6.8	2
23	O	2	ウデドケイ	ude-dokei	watch	250	950	950	0.98	100.0	100.0	4.4	6.4	5
24	A	3	ウナギ	unagi	eel		1,281	1,307	1.22	80.0	90.0	4.9	4.3	3
25	O	1	ウバグルマ	ubaguruma	baby carriage	13	1,141	1,141	0.53	85.0	85.0	3.9	3.4	5
26	O	2	ウマ	uma	horse	121	921	921	0.00	100.0	100.0	3.0	4.7	2
27	A	3	エビ	ebi	shrimp		1,146	1,255	1.00	67.5	92.5	3.7	4.9	2
28	A	1	エントツ	entotsu	chimney		938	934	0.29	95.0	100.0	3.8	3.6	4
29	O	2	エンピツ	enpitsu	pencil	168	858	858	0.00	95.0	95.0	3.5	6.5	4
30	O	3	オウカン	oukan	crown	69	1,042	1,038	0.62	82.5	97.5	4.8	2.2	4
31	A	1	オオカミ	ookami	wolf		1,609	1,551	1.14	50.0	92.5	3.7	2.7	4
32	O	2	オートバイ	ôotobai	motorcycle	147	1,072	874	0.54	12.5	100.0	5.3	4.3	5
33	C	3	オットセイ	ottosei	seal	201	1,482	1,565	1.56	37.5	87.5	5.1	2.6	5
34	O	1	オノ	ono	axe	12	1,462	1,437	0.83	80.0	85.0	4.4	2.6	2
35	O	2	オヤユビ	oya-yubi	thumb	231	955	955	0.78	97.5	97.5	3.1	6.7	4

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		AoA	FAM	MORA
										NA _{st}	NA _{lib}			
36	A	3	オルガン	organ	choir organ		1,417	1,357	0.86	75.0	92.5	4.0	3.1	4
37	A	1	カ	ka	mosquito		1,321	1,501	1.40	67.5	85.0	3.4	5.9	1
38	A	2	カーテン	kāten	curtain		761	761	0.00	100.0	100.0	3.9	6.3	4
39	A	3	カイダン	kaidan	staircase		791	791	0.17	97.5	97.5	3.1	6.3	4
40	O	1	カエル	kaeru	frog	100	689	689	0.00	100.0	100.0	2.6	4.3	3
41	A	2	カガミ	kagami	mirror		961	961	0.18	92.5	92.5	3.3	6.7	3
42	O	3	カギ	kagi	key	128	651	651	0.17	97.5	97.5	3.9	6.5	2
43	O	1	カギ	kagi	lock	143	1,080	1,167	0.80	85.0	95.0	3.8	5.6	2
44	O	2	カサ	kasa	umbrella	245	621	621	0.00	100.0	100.0	2.9	6.5	2
45	O	3	カタツムリ	katatumuri	snail	208	801	809	0.58	87.5	97.5	2.9	4.1	5
46	A	1	カタナ	katana	Japanese sword		1,032	1,166	0.88	80.0	100.0	4.7	3.0	3
47	O	2	カップ	kappu	cup	70	942	940	1.89	30.0	95.0	3.5	6.5	3
48	C	3	カナヅチ	kanaduchi	hammer	114	857	925	1.31	42.5	97.5	4.9	4.3	4
49	A	1	カニ	kani	crab		897	897	0.00	100.0	100.0	2.8	4.6	2
50	A	2	カヌー	kanū	canoe		1,428	1,621	1.79	30.0	75.0	6.3	3.2	3
51	A	3	カバ	kaba	hippopotamus		1,441	1,368	0.76	70.0	90.0	3.4	2.6	2
52	C	1	カバン	kaban	suitcase	221	841	841	0.34	95.0	95.0	2.4	6.5	3
53	C	2	カブトムシ	kabutomushi	beetle	24	854	854	0.36	87.5	87.5	3.4	4.8	5
54	O	3	カボチャ	kabocha	pumpkin	181	842	842	0.00	100.0	100.0	3.6	4.7	3
55	C	1	カミ	kami	hair	113	1,108	1,195	1.82	55.0	95.0	2.2	6.9	2
56	O	2	カメ	kame	turtle	244	632	632	0.00	100.0	100.0	3.0	4.9	2
57	A	3	カモメ	kamome	seagull	126	1,815	1,368	2.10	12.5	60.0	4.6	3.0	3
58	O	1	カンガルー	kangarū	kangaroo		847	847	0.00	100.0	100.0	3.9	3.6	5
59	A	2	カンキリ	kankiri	can opener		1,933	1,890	1.68	40.0	67.5	5.5	4.8	4
60	C	3	キ	ki	tree	241	1,043	1,043	0.80	85.0	90.0	2.6	6.0	1
61	A	1	キカンジュウ	kikanjuu	machine gun		1,280	1,446	2.06	30.0	87.5	6.8	2.2	5
62	O	2	ギター	gitā	guitar	111	804	804	0.17	97.5	97.5	5.6	5.0	3
63	A	3	キツツキ	kitsutsuki	woodpecker		1,174	1,174	0.17	95.0	95.0	5.3	2.9	4
64	O	1	キツネ	kitsune	fox	98	1,461	1,447	0.80	77.5	92.5	2.8	3.3	3
65	O	2	キノコ	kinoko	mushroom	150	900	896	1.09	60.0	92.5	3.5	5.7	3
66	C	3	キャベツ	kyabetsu	lettuce	137	843	843	0.17	97.5	97.5	3.5	5.8	3
67	O	1	キョウカイ	kyoukai	church	57	1,319	1,254	1.18	72.5	90.0	5.6	4.4	4
68	O	2	キリン	kirin	giraffe	103	979	979	0.00	100.0	100.0	2.9	4.9	3
69	A	3	キンギョ	kingyo	goldfish		960	955	0.72	82.5	95.0	3.0	4.2	3
70	O	1	クギ	kugi	nail	151	1,152	1,144	0.48	85.0	90.0	4.7	3.8	2
71	O	2	クサリ	kusari	chain	52	920	920	0.81	75.0	100.0	5.3	4.6	3
72	O	3	クシ	kushi	comb	65	942	942	0.46	90.0	95.0	3.7	5.0	2
73	O	1	クジャク	kujaku	peacock	164	1,302	1,302	0.18	92.5	92.5	4.5	3.4	3
74	A	2	クジラ	kujira	whale		1,036	1,072	0.29	92.5	97.5	3.6	4.5	3
75	O	3	クチビル	kuchibiru	lips	141	745	745	0.55	97.5	97.5	3.4	6.1	4
76	O	1	クツ	kutsu	shoe	204	831	831	0.00	95.0	95.0	1.7	6.4	2
77	O	2	クツシタ	kutsushita	sock	211	722	722	0.17	95.0	95.0	2.8	6.4	4

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		AoA	FAM	MORA
										NA _{st}	NA _{lib}			
78	O	3	クモ	kumo	cloud	62	1,432	1,432	0.18	90.0	90.0	2.9	5.7	2
79	O	1	クモ	kumo	spider	212	1,173	1,212	0.30	87.5	92.5	3.1	4.9	2
80	O	2	グラス	gurasu	wineglass	258	1,078	1,078	0.82	95.0	100.0	4.5	6.2	3
81	O	3	グランドピアノ	gurando-piano	piano	171	847	847	0.39	97.5	97.5	5.4	3.5	7
82	A	1	クリ	kuri	chestnut		789	789	0.00	100.0	100.0	3.2	5.1	2
83	C	2	クルマ	kuruma	car	47	902	886	0.38	92.5	100.0	2.5	6.5	3
84	A	3	ケイヨウカップ	keiryō-kappu	measuring cup		1,176	1,221	1.78	67.5	87.5	6.3	4.3	7
85	O	1	ケーキ	kēki	cake	42	958	958	0.00	100.0	100.0	1.9	6.3	3
86	C	2	ケムシ	kemushi	caterpillar	50	1,372	1,535	1.62	45.0	85.0	3.8	4.4	3
87	A	3	ケン	ken	sword		2,610	2,422	3.07	15.0	57.5	5.2	3.1	3
88	A	1	クウモリ	koumori	bat		944	944	0.00	100.0	100.0	4.6	2.8	4
89	O	2	コート	kōto	coat	64	1,259	1,326	1.61	70.0	87.5	5.2	6.4	3
90	C	3	コシヨウ	koshō*	saltshaker	194	968	1379	0.96	37.5	97.5	5.3	5.1	3
91	O	1	コップ	koppu	glass	104	716	716	0.00	97.5	97.5	1.8	6.6	3
92	A	2	コト	koto	Japanese harp		1,087	1,107	0.29	92.5	97.5	5.9	4.6	2
93	A	3	コブラ	kobura	cobra		1,217	1,389	1.14	40.0	92.5	5.7	2.3	3
94	O	1	コマ	koma	top	238	1,009	1,009	0.17	97.5	97.5	3.0	3.8	2
95	O	2	ゴリラ	gorira	gorilla	108	891	891	0.63	87.5	92.5	3.3	4.5	3
96	O	3	コンセン	konsento	plug	177	1,094	1,099	1.12	67.5	90.0	4.4	6.2	5
97	O	1	サイ	sai	rhinoceros	186	1,010	1,010	0.17	97.5	97.5	3.6	3.0	2
98	C	2	サイロ	sauro	barn	17	1,718	2,067	3.23	22.5	45.0	7.8	2.1	3
99	O	3	サカナ	sakana	fish	89	1,061	1,429	1.65	67.5	92.5	2.5	5.3	3
100	C	1	サク	saku	fence	87	1,134	1,124	0.64	85.0	90.0	4.6	4.1	2
101	A	2	サクラ	sakura	cherry blossom		1,176	1,348	1.33	55.0	87.5	3.6	6.4	3
102	O	3	サクランボ	sakuranbo	cherry	54	1,294	1,295	0.86	75.0	85.0	3.2	4.8	5
103	A	1	サメ	same	shark		1,009	1,050	0.30	90.0	95.0	3.9	3.2	2
104	A	2	サラ	sara	plate		917	917	0.34	92.5	92.5	3.1	6.7	2
105	C	3	ザリガニ	zarigani	lobster	142	1,009	1,014	0.57	90.0	100.0	3.9	3.7	4
106	O	1	サル	saru	monkey	145	860	860	0.17	95.0	95.0	2.4	4.4	2
107	A	2	サンカクジヨウギ	sankaku-jougi	triangle ruler		895	895	0.88	97.5	97.5	5.3	4.8	7
108	O	3	サンドイッチ	sandoicchi	sandwich	195	1,144	1,144	0.34	92.5	92.5	3.8	5.5	6
109	A	1	サンリンシャ	sanrinsha	tricycle		944	944	0.00	95.0	95.0	2.1	3.8	5
110	O	2	シカ	shika	deer	71	1,088	1,237	0.67	80.0	90.0	3.5	4.3	2
111	A	3	シタ	shita	tongue		847	843	0.54	87.5	100.0	3.8	6.2	2
112	A	1	シチメンチヨウ	shichimenchou	turkey		2,100	2,248	2.41	30.0	47.5	6.5	2.5	6
113	O	2	ジテンシヤ	jitensha	bicycle	27	756	756	0.17	95.0	95.0	3.7	6.7	4
114	O	3	シマウマ	shimauma	zebra	260	881	881	0.00	100.0	100.0	3.6	2.7	4
115	O	1	ジャガイモ	jagaimo	potato	180	1,176	1,176	0.80	92.5	92.5	2.5	6.1	4
116	A	2	ジャグチ	jaguchi	faucet		978	968	0.55	85.0	97.5	4.2	6.3	3
117	C	3	ジャケット	jaketto	jacket	125	1,424	1,369	1.56	65.0	82.5	6.6	5.1	4
118	A	1	シャベル	shaberu	shovel		1,020	1,042	1.00	50.0	97.5	2.7	3.8	3
119	O	2	シャリン	sharin	wheel	254	1,151	1,242	1.08	77.5	85.0	5.2	4.3	3

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		FAM	MORA	
										NA _{st}	NA _{lib}			
120	A	3	ジャンパー	janpā	jumper		1,928	1,655	1.48	55.0	90.0	4.0	5.0	4
121	C	1	ジョウロ	jouro	watering can	251	1,212	1,212	0.00	95.0	95.0	3.0	4.2	3
122	C	2	ショルダールバッグ	shorudā-baggu	pocketbook	178	967	914	1.64	35.0	100.0	6.0	5.9	7
123	A	3	シロ (西洋)	shiro	castle		889	889	0.00	100.0	100.0	3.9	2.6	2
124	A	1	シロ (日本)	shiro	Japanese castle		1,066	1,066	1.04	97.5	97.5	5.1	4.1	2
125	C	2	シロクマ	shiro-kuma	bear	21	1,004	1,004	0.81	100.0	100.0	4.3	4.2	4
126	C	3	シシゴウ	shingou	traffic light	239	966	966	0.00	95.0	95.0	3.4	6.3	4
127	A	1	ジンジャ	jinja	Shinto shrine		2,151	2,264	2.09	47.5	67.5	4.5	4.4	3
128	O	2	スイカ	suika	watermelon	252	863	863	0.17	97.5	97.5	3.1	6.0	3
129	O	3	スイツチ	suicchi	light switch	139	1,516	1,516	0.19	85.0	85.0	3.9	6.3	4
130	O	1	スカート	sukāto	skirt	205	889	889	0.00	100.0	100.0	2.5	6.3	4
131	O	2	スカンク	sukanku	skunk	206	2,051	1,914	1.51	40.0	82.5	5.6	3.3	4
132	A	3	スキーイタ	sukī ita	ski		917	917	1.14	95.0	95.0	5.8	4.2	5
133	A	1	スクーター	sukūtā	scooter		1,396	1,182	1.63	22.5	95.0	6.5	3.9	5
134	A	2	スケートブーツ	sukēto gutsu	skating boots		1,062	1,067	1.32	85.0	90.0	5.6	3.8	6
135	C	3	スズメ	suzume	bird	28	1,707	1,669	1.69	50.0	72.5	3.3	5.1	3
136	A	1	ステレオ	sutereo	stereo set		1,463	1,942	2.73	37.5	80.0	5.9	5.5	4
137	A	2	スバイク	supaiku	spiked shoe		1,474	1,067	1.73	10.0	90.0	7.0	3.6	4
138	O	3	スバナ	supana	wrench	259	1,169	1,608	2.06	35.0	60.0	7.7	3.5	3
139	O	1	スプーン	supūn	spoon	215	925	925	0.00	95.0	95.0	1.9	6.6	4
140	O	2	ズボン	zubon	pants	162	1,043	1,039	0.55	90.0	97.5	3.2	6.5	3
141	A	3	スリッパ	surippa	slippers		685	685	0.18	92.5	92.5	3.5	5.1	4
142	O	1	セーター	setā	sweater	224	1,087	1,087	0.87	82.5	82.5	3.9	5.9	4
143	O	2	セロリ	serori	celery	51	1,489	1,475	1.23	27.5	80.0	5.2	4.8	3
144	A	3	センガン	senkan	battleship		1,566	1,383	1.41	25.0	97.5	6.3	2.3	4
145	A	1	センジャ	sensha	tank		1,289	1,289	0.00	97.5	97.5	5.3	2.2	3
146	A	2	センスイカン	sensuikan	submarine		1,242	1,274	1.61	55.0	85.0	5.0	3.1	6
147	A	3	センスイフク	sensui fuku	diving suit	61	1,667	1,624	3.21	15.0	52.5	7.4	1.8	6
148	O	1	センタクハサミ	sentaku-basami	clothespin		1,802	1,894	1.10	62.5	85.0	3.9	5.6	7
149	O	2	ソウ	zou	elephant	84	658	658	0.00	100.0	100.0	3.0	4.8	2
150	O	3	ソファ	sofā	couch	67	1,063	1,034	0.79	80.0	95.0	5.2	5.0	3
151	C	1	ソリ	sori	sled	207	1,470	1,470	0.18	87.5	87.5	3.7	3.4	2
152	O	2	タイコ	taiko	drum	80	1,103	1,091	1.01	65.0	90.0	3.7	5.2	3
153	A	3	ダイコン	daikon	Japanese radish		891	891	0.18	92.5	92.5	3.4	5.4	4
154	O	1	タイホウ	taihou	cannon	45	1,862	1,862	1.27	57.5	57.5	6.1	2.1	4
155	O	2	タイヨウ	taiyou	sun	222	755	755	0.30	90.0	95.0	2.7	6.5	4
156	A	3	タキ	taki	waterfall		957	1,004	0.39	90.0	97.5	4.7	3.4	2
157	A	1	タケ	take	bamboo		1,014	1,072	0.55	85.0	97.5	3.7	4.2	2
158	A	2	タケウマ	takeuma	stilts		1,289	1,289	0.58	75.0	75.0	4.3	4.1	4
159	O	3	タコ	tako	kite	129	955	945	0.29	92.5	97.5	3.6	3.3	2
160	O	1	ダチョウ	dachou	ostrich	159	1,381	1,385	1.12	72.5	80.0	4.7	2.8	3
161	O	2	タツノオトシゴ	tatsunootoshigo	sea horse	200	1,052	1,052	0.00	82.5	82.5	5.7	3.3	7

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement			MORA	
										NA _{st}	NA _{lib}	AoA		
162	C	3	タヌキ	tanuki	raccoon	183	1,168	1,185	1.30	47.5	82.5	3.5	3.5	3
163	O	1	タバコ	tabako	cigarette	59	1,020	1,020	0.17	97.5	97.5	4.3	4.4	3
164	O	2	タマネギ	tamanegi	onion	157	1,068	1,071	0.48	85.0	90.0	3.5	6.3	4
165	O	3	タル	taru	barrel	18	914	914	0.00	95.0	95.0	5.9	2.3	2
166	A	1	タンカー	tankā	oil tanker		2,644	1,855	0.97	7.5	80.0	7.5	2.0	4
167	O	2	タンス	tansu	dresser	79	912	912	0.17	95.0	95.0	4.1	6.4	3
168	A	3	ダンロ	danro	fireplace		975	975	0.34	95.0	95.0	5.1	2.2	3
169	A	1	チューリップ	chūrippu	tulip	40	908	908	0.17	95.0	95.0	2.4	5.0	5
170	C	2	チョウ	chou	butterfly		815	815	1.14	97.5	97.5	2.9	5.8	2
171	O	3	ツクエ	tsukue	desk	72	893	893	0.34	95.0	95.0	3.4	5.9	3
172	O	1	ツクエ	tsukue	table	226	892	1051	0.72	80.0	100.0	2.3	6.5	3
173	A	2	ツバサ	tsubasa	wing		741	872	0.54	12.5	100.0	4.4	4.0	3
174	A	3	ツバメ	tsubame	swallow		1,254	1,259	1.05	77.5	90.0	4.0	4.4	3
175	C	1	ツボ	tsubo	vase	246	1,304	1,342	0.85	65.0	90.0	4.5	3.6	2
176	C	2	ツボミ	tsubomi*	artichoke	9	2,666	3,249	2.63	15.0	57.5	4.4	5.1	3
177	A	3	ツル	tsuru	Japanese crane		1,261	1,270	1.35	67.5	77.5	4.1	3.2	2
178	O	1	テ	te	hand	115	774	774	0.00	92.5	92.5	1.7	6.8	1
179	A	2	ティーンヤツ	tei-shatsu	T-shirt		1,242	1,236	1.21	87.5	97.5	4.3	6.8	4
180	A	3	テープレコーダー	tépu rekôdā	tape recorder		1,641	1,901	2.65	42.5	65.0	5.7	3.6	8
181	O	1	テブクロ	tebukuro	glove	106	853	860	0.45	92.5	97.5	3.0	5.7	4
182	O	2	テブクロ	tebukuro	mitten	144	1,128	1,128	0.00	95.0	95.0	3.5	5.9	4
183	O	3	テレビ	terebi	television	228	832	832	0.00	100.0	100.0	2.6	6.8	3
184	O	1	デンキスタンド	denki sutando	lamp	132	1,390	1,525	2.73	40.0	80.0	5.1	5.6	7
185	O	2	デンキユウ	denkiyuu	light bulb	138	1,000	1,000	0.81	82.5	87.5	4.7	5.9	4
186	C	3	デンシヤ	densha	train	240	948	948	0.17	95.0	95.0	3.4	6.1	3
187	C	1	デンシレンジ	denshi-renji*	stove	219	1,428	1,440	2.11	57.5	87.5	4.7	6.3	6
188	A	2	テント	tento	tent		760	760	0.00	97.5	97.5	4.6	4.0	3
189	A	3	テントウムシ	tentoumushi	ladybug		824	824	0.17	95.0	95.0	3.3	4.1	6
190	O	1	デンワ	denwa	telephone	227	703	703	0.00	100.0	100.0	2.3	6.6	3
191	O	2	ドア	doa	door	76	703	703	0.17	95.0	95.0	3.1	6.4	2
192	O	3	トウモロコシ	toumorokoshi	corn	66	1,023	1,023	0.00	97.5	97.5	3.6	5.2	6
193	O	1	トースター	tôsutā	toaster	234	1,575	1,584	1.27	80.0	85.0	4.6	4.9	5
194	O	2	トケイ	tokei	clock	60	767	767	0.29	100.0	100.0	3.3	6.9	3
195	O	3	トマト	tomato	tomato	236	1,041	1,041	0.34	95.0	95.0	2.9	5.4	3
196	O	1	トラ	tora	tiger	233	1,011	1,024	0.30	90.0	95.0	3.1	3.7	2
197	O	2	ドライバ	doraibā	screwdriver	199	1,797	1,802	1.03	72.5	77.5	5.9	4.6	5
198	A	3	トラクター	torakutā	tractor		1,258	1,318	1.61	62.5	67.5	5.7	3.3	5
199	O	1	トラック	torakku	truck	242	895	895	0.30	90.0	95.0	3.2	4.9	4
200	A	2	トランプ	toranpu	playing cards		726	726	0.17	97.5	97.5	3.7	5.7	4
201	O	3	トランペット	toranpetto	trumpet	243	963	992	1.00	67.5	92.5	6.4	3.1	6
202	C	1	ドレス	doresu	dress	78	1,069	1,087	0.73	85.0	92.5	3.4	4.9	3
203	C	2	トロツコ	torokko	wagon	249	1,448	1,433	1.19	60.0	72.5	6.3	2.4	4

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement			FAM	MORA
										NA _{st}	NA _{lib}	AoA		
204	A	3	トンボ	tonbo	dragonfly		769	769	0.00	95.0	95.0	3.0	4.3	3
205	O	1	ナイフ	naifu	knife	130	1,263	1,341	0.81	82.5	92.5	4.4	5.3	3
206	O	2	ナット	natto	nut	156	1,514	1,598	2.01	25.0	67.5	7.4	3.0	3
207	O	3	ナベ	nabe	pot	179	1,370	1,352	1.63	70.0	80.0	3.8	5.7	2
208	O	1	ニワトリ	niwatori	chicken	55	948	962	0.46	90.0	95.0	2.8	4.4	4
209	O	2	ニワトリ	niwatori	rooster	191	888	888	0.34	95.0	95.0	3.2	5.0	4
210	O	3	ニンギョウ	ningyou	doll	74	1,533	1,656	1.95	35.0	90.0	2.4	3.8	4
211	C	1	ニンジン	ninjin	carrot	48	879	879	0.35	90.0	90.0	2.2	6.0	4
212	O	2	ネクタイ	nekutai	tie	232	750	750	0.00	100.0	100.0	4.7	5.0	4
213	O	3	ネコ	neko	cat	49	705	705	0.00	100.0	100.0	2.4	5.4	2
214	O	1	ネジ	neji	screw	198	1,937	1,473	1.12	35.0	90.0	4.7	3.9	2
215	O	2	ネズミ	nezumi	mouse	149	1,018	1,018	0.00	100.0	100.0	3.5	4.5	3
216	O	3	ネックレス	nekkuresu	necklace	153	981	981	0.53	85.0	85.0	4.4	4.4	5
217	C	1	ノコギリ	nokogiri	saw	196	813	813	0.00	97.5	97.5	4.3	3.5	4
218	O	2	ノブ	nobu	doorknob	77	1,570	1,642	1.95	65.0	72.5	5.3	5.7	2
219	O	3	ノミ	nomi	chisel	56	3,027	2,561	2.70	17.5	45.0	7.5	2.7	2
220	A	1	ハ(歯)	ha	teeth		1,138	1,301	0.95	60.0	95.0	2.3	6.5	1
221	C	2	ハ(葉)	ha	leaf	133	961	979	1.14	90.0	95.0	3.3	6.3	1
222	O	3	ハート	hâto	heart	119	657	657	0.17	97.5	97.5	4.3	4.6	3
223	O	1	ハーブ	hâpu	harp	117	1,228	1,228	0.40	75.0	75.0	6.8	4.6	3
224	A	2	ハーモニカ	hâmonika	harmonica		890	890	0.64	85.0	90.0	4.2	4.5	5
225	O	3	バイオリン	baiorin	violin	248	1,158	1,158	0.46	90.0	95.0	5.3	2.7	5
226	O	1	ハイゼラ	haizara	ashtray	10	1,123	1,230	0.50	80.0	90.0	5.1	4.5	4
227	O	2	パイナップル	painappuru	pineapple	173	748	748	0.00	100.0	100.0	3.9	5.7	6
228	A	3	ハイヒール	haihîru	high-heeled shoes		956	946	0.90	75.0	95.0	5.7	2.7	5
229	O	1	パイプ	paipu	pipe	174	1,004	1,122	0.56	87.5	95.0	6.0	2.5	3
230	C	2	ハエ	hae	fly	93	1,204	1,204	1.09	72.5	85.0	4.0	5.6	2
231	O	3	ハクチョウ	hakuchou	swan	223	1,179	1,264	1.25	75.0	90.0	3.8	2.9	4
232	O	1	ハコ	hako	box	35	963	963	0.00	97.5	97.5	2.3	5.4	2
233	O	2	ハサミ	hasami	scissors	197	659	659	0.00	100.0	100.0	3.2	6.6	3
234	O	3	ハシゴ	hashigo	ladder	131	904	904	0.00	97.5	97.5	4.0	3.9	3
235	O	1	バス	basu	bus	39	867	867	0.00	95.0	95.0	2.4	6.3	2
236	O	2	バスケット	basuketto	basket	20	1,004	879	1.21	27.5	87.5	5.3	4.3	5
237	O	3	ハタ	hata	flag	90	798	798	0.00	95.0	95.0	3.3	3.5	2
238	O	1	ハチ	hachi	bee	23	1,630	1,513	1.36	50.0	80.0	3.3	5.1	2
239	O	2	バツタ	batta	grasshopper	110	1,082	1,082	0.62	90.0	95.0	3.6	4.4	3
240	O	3	バット	batto	baseball bat	19	748	748	0.00	100.0	100.0	4.2	3.8	3
241	A	1	ハト	hato	pigeon		1,012	1,040	0.74	75.0	95.0	2.9	5.2	2
242	O	2	ハナ	hana	flower	91	1,313	1,276	0.89	72.5	77.5	2.4	6.6	2
243	O	3	ハナ	hana	nose	155	781	781	0.00	97.5	97.5	2.5	6.2	2
244	O	1	バナナ	banana	banana	16	798	798	0.18	90.0	90.0	2.0	6.0	3
245	O	2	ハブラシ	ha-burashi	toothbrush	237	770	770	0.17	95.0	95.0	2.8	6.7	4

APPENDIX A (Continued)

No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		AoA	FAM	MORA
										NA _{st}	NA _{lib}			
246	O	3	ハマキ	hamaki	cigar	58	2,187	2,161	1.71	57.5	80.0	7.4	2.0	3
247	A	1	バラ	bara	rose		802	802	0.00	100.0	100.0	3.7	5.0	2
248	O	2	ハリ	hari	needle	154		911	0.18	95.0	95.0	4.9	5.1	2
249	C	3	バレーボール	barê bôru	ball	14	1,039	1,039	1.00	92.5	92.5	5.6	3.9	6
250	O	1	パン	pan	bread	36	900	900	0.83	97.5	97.5	2.0	6.6	2
251	O	2	ハンガー	hangâ	hanger	116	669	669	0.00	97.5	97.5	4.5	6.5	4
252	A	3	ハンカチ	hankachi	handkerchief		1,052	1,088	1.49	70.0	87.5	3.2	5.4	4
253	A	1	ハンモック	hanmokku	hammock		1,175	1,175	0.18	87.5	87.5	5.9	2.7	5
254	O	2	ピーナッツ	pînattsu	peanut	165	1,098	1,141	0.85	65.0	90.0	4.2	5.2	5
255	A	3	ピーバー	bîbâ	beaver		2,457	2,744	3.10	7.5	40.0	6.0	2.2	4
256	O	1	ピーマン	pîman	pepper	170	1,180	1,254	0.77	72.5	85.0	2.6	5.8	4
257	O	2	ピエロ	piero	clown	63	849	849	0.00	97.5	97.5	4.6	3.8	3
258	O	3	ピコウキ	hikouki	airplane	2	902	902	0.17	97.5	97.5	3.3	4.2	4
259	O	1	ピストル	pisutoru	gun	112	940	1,004	1.02	75.0	92.5	4.5	2.7	4
260	O	2	ピツジ	hitsuji	sheep	202	1,437	1,405	0.71	72.5	82.5	3.7	4.6	3
261	O	3	ヒトサシユビ	hitosashi-yubi	finger	88	896	896	1.12	97.5	97.5	4.2	6.3	6
262	A	1	ヒマワリ	himawari	sunflower		904	904	0.00	100.0	100.0	3.1	5.1	4
263	O	2	ヒョウ	hyou	leopard	136	1,090	1,304	1.46	60.0	95.0	4.4	4.1	2
264	A	3	ピラミッド	piramiddo	pyramid		803	803	0.00	100.0	100.0	5.9	3.1	5
265	O	1	ビン	bin	bottle	32	909	924	0.75	85.0	95.0	3.4	5.1	2
266	O	2	フウシャ	fuusha	windmill	256	1,142	1,142	0.18	90.0	90.0	5.6	3.7	3
267	O	3	フウセン	fuusen	balloon	15	844	844	0.00	95.0	95.0	2.7	4.2	4
268	O	1	ブーツ	bûtsu	boot	31	1,079	1,102	1.30	52.5	97.5	6.4	5.3	3
269	O	2	フウトウ	fuutou	envelope	85	1,015	994	1.14	42.5	95.0	4.6	5.9	4
270	A	3	プール	pûru	swimming pool		1,093	1,093	0.00	100.0	100.0	3.2	4.5	3
271	O	1	フエ	fue	whistle	255	1,236	1,225	0.29	95.0	100.0	3.5	4.1	2
272	O	2	フォーク	fôku	fork	97	877	877	0.17	97.5	97.5	3.1	6.5	3
273	O	3	フクロウ	fukurou	owl	160	1,158	1,158	0.00	97.5	97.5	4.4	3.0	4
274	O	1	ブタ	buta	pig	172	1,066	1,066	0.18	90.0	90.0	2.5	4.3	2
275	C	2	フデ	fude	paintbrush	161	1,082	1,229	1.40	77.5	95.0	4.5	4.8	2
276	O	3	ブドウ	budou	grapes	109	1,130	1,130	0.00	97.5	97.5	2.9	4.8	3
277	O	1	フライパン	furaipan	frying pan	101	842	842	0.18	92.5	92.5	3.6	6.0	5
278	O	2	ブラウス	burasuu	blouse	29	1,504	1,640	2.54	32.5	95.0	5.4	6.3	4
279	O	3	ブラシ	burashi	brush	38	994	994	0.18	92.5	92.5	4.1	4.8	3
280	O	1	ブランコ	buranko	swing	225	1,522	1,522	0.34	92.5	92.5	2.1	5.2	4
281	O	2	フルート	furûto	flute	92	1,372	1,331	1.17	70.0	80.0	6.4	5.7	4
282	O	3	プレーヤー	purêyâ	record player	184	2,321	1,876	2.24	27.5	80.0	5.8	5.0	5
283	A	1	ブロック	buorokku	block		1,390	1,202	0.94	60.0	92.5	4.7	4.1	4
284	O	2	ベスト	besuto	vest	247	1,509	1,387	1.24	57.5	90.0	5.8	4.5	3
285	O	3	ベッド	beddo	bed	22	822	822	0.00	97.5	97.5	4.0	5.6	3
286	O	1	ヘビ	hebi	snake	209	694	694	0.00	100.0	100.0	3.0	3.7	2
287	A	2	ペリカン	perikan	pelican		1,504	1,482	1.25	75.0	82.5	5.0	3.7	4

APPENDIX A (Continued)

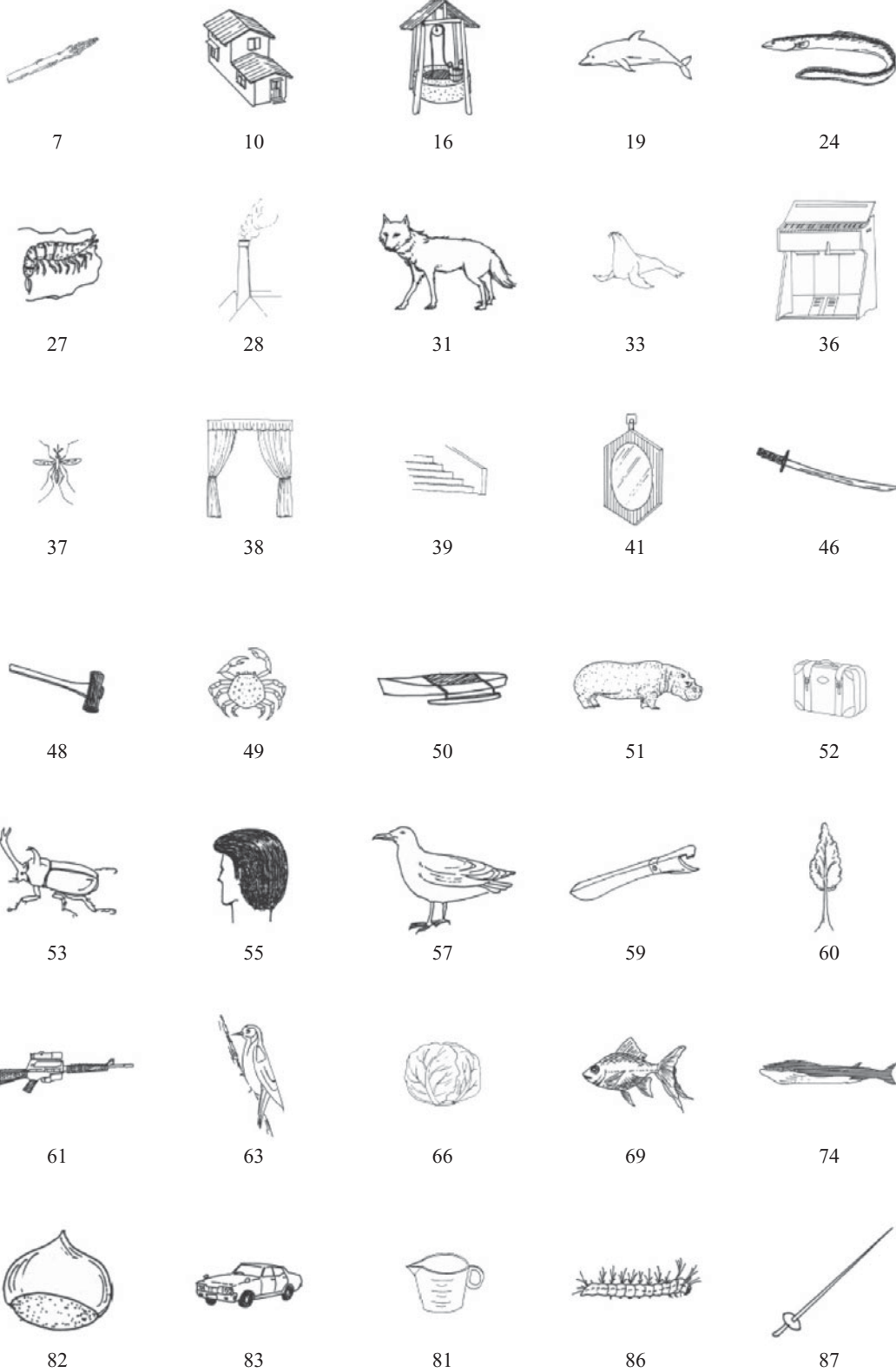
No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	RT _{st}	RT _{lib}	H	Name Agreement		AoA	FAM	MORA
										NA _{st}	NA _{lib}			
288	O	3	ヘリコプター	herikoputā	helicopter	120	880	880	0.17	97.5	97.5	4.1	3.0	6
289	O	1	ベル	beru	bell	25	828	941	1.36	50.0	95.0	4.2	3.8	2
290	O	2	トベル	beruto	belt	26	874	929	0.29	92.5	97.5	5.0	6.2	3
291	O	3	ヘルメット	herumetto	football helmet	96	1,560	1,627	1.13	57.5	65.0	5.3	3.9	5
292	A	1	ヘルメット	herumetto	motorcycle helmet		873	873	0.34	95.0	95.0	5.4	3.5	5
293	O	2	ペンギン	pengin	penguin	169	1,017	1,017	0.00	92.5	92.5	3.5	4.5	4
294	A	3	ベンチ	benchi	bench		1,187	1,189	0.89	75.0	87.5	4.5	4.9	3
295	C	1	ペンチ	penchi	pliers	176	1,265	1,258	0.37	82.5	85.0	5.8	3.6	3
296	O	2	ホウキ	houki	broom	37	993	993	0.17	95.0	95.0	4.0	5.4	3
297	O	3	ボウシ	boushi	cap	46	1,018	1,018	0.34	95.0	95.0	2.7	5.1	3
298	O	1	ボウシ	boushi	hat	118	770	770	0.00	92.5	92.5	2.3	5.5	3
299	A	2	ホウチヨウ	houchou	kitchen knife		841	851	0.55	90.0	97.5	4.0	6.3	4
300	O	3	ボール	bōru	bowl	34	1,782	1,623	2.43	27.5	92.5	5.2	4.9	3
301	O	1	ボールペン	bōru-pen	pen	167	1,163	1,163	1.43	90.0	90.0	4.8	6.5	5
302	O	2	ホシ	hoshi	star	217	698	698	0.17	95.0	95.0	3.0	6.2	2
303	O	3	ボタン	botan	button	41	773	773	0.00	97.5	97.5	3.1	5.6	3
304	A	1	ホネ	hone	bone		948	948	0.00	100.0	100.0	3.9	3.6	2
305	O	2	ポリバケツ	pori-baketsu	garbage can	102	1,081	1,173	1.73	72.5	100.0	5.4	4.4	5
306	O	3	ホルン	horun	French horn	99	2,062	1,995	1.96	37.5	77.5	7.4	2.6	3
307	O	1	ホン	hon	book	30	716	716	0.18	87.5	87.5	2.1	6.3	2
308	A	2	ホンダナ	hon-dana	bookshelf		1,242	1,217	1.65	87.5	92.5	4.5	5.9	4
309	A	3	マツ	matsu	Japanese pine		1,090	1,109	0.57	85.0	92.5	5.0	4.0	2
310	C	1	マド	mado	window	257	910	936	0.55	90.0	97.5	2.3	6.3	2
311	A	2	マユゲ	mayu-ge	eyebrow		1,285	1,336	1.96	57.5	85.0	3.7	6.6	3
312	A	3	マンネンヒツ	mannenhitsu	fountain pen		1,237	1,081	1.21	57.5	100.0	6.7	3.4	6
313	O	1	ミカツキ	mika-duki	moon	146	1,009	1,009	0.89	97.5	97.5	5.1	5.3	4
314	O	2	ミカン	mikan	orange	158	1,121	1,207	1.57	62.5	87.5	2.8	6.5	3
315	A	3	ミシン	mishin	sewing machine		843	843	0.00	100.0	100.0	4.9	3.9	3
316	C	1	ミズサン	mizusashi	pitcher	175	2,982	3,264	3.68	10.0	55.0	7.2	3.2	4
317	O	2	ミミ	mimi	ear	83	1,332	1,332	0.00	97.5	97.5	2.5	6.8	2
318	O	3	メ	me	eye	86	783	783	0.17	97.5	97.5	2.5	6.5	1
319	O	1	メガネ	megane	glasses	105	681	681	0.17	95.0	95.0	3.0	5.9	3
320	A	2	メロン	meron	melon		957	957	0.00	97.5	97.5	3.3	6.0	3
321	O	3	メンボウ	menbou	rolling pin	190	1,431	1,689	2.14	22.5	32.5	6.6	3.7	4
322	O	1	モノサン	monosashi	ruler	192	1,093	976	0.61	15.0	100.0	4.8	5.4	4
323	A	2	モノレール	monorēru	monorail		2,846	2,803	1.02	40.0	45.0	5.3	4.6	5
324	O	3	モモ	momo	peach	163	1,802	1,850	1.76	60.0	80.0	3.2	5.0	2
325	O	1	ヤカン	yakan	kettle	127	823	823	0.00	100.0	100.0	3.5	5.8	3
326	O	2	ヤギ	yagi	goat	107	1,368	1,349	0.39	90.0	97.5	3.6	4.2	2
327	O	3	ヤジロシ	yajirushi	arrow	8	767	767	0.17	97.5	97.5	4.7	5.0	4
328	O	1	ヤスリ	yasuri	nail file	152	1,773	1,731	1.91	45.0	90.0	6.7	3.3	3
329	C	2	ヤマ	yama	mountain	148	942	942	0.51	90.0	90.0	2.8	6.3	2

APPENDIX A (Continued)

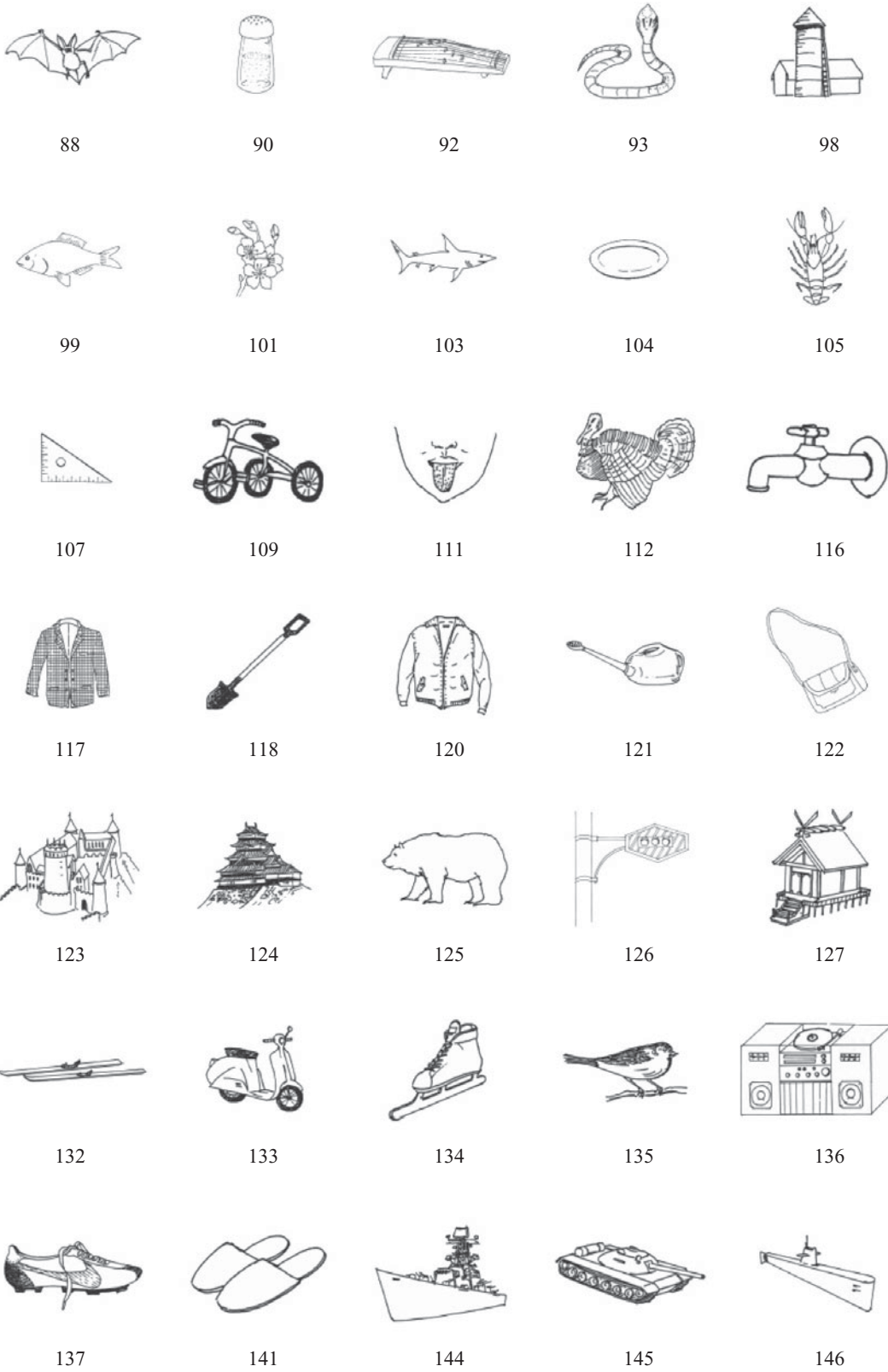
No.	Type	Set	Japanese Name (Katakana)	Japanese Name (Romanized)	English Name	S&V (1980) Original No.	Name Agreement		AoA	FAM	MORA			
							RT _{st}	RT _{lib}						
330	A	3	ユウビンウケ	yuubin-uke	mail box		974	1,179	1.74	12.5	92.5	5.1	5.2	6
331	O	1	ユキダルマ	yuki-daruma	snowman	210	935	935	0.00	97.5	97.5	2.7	4.9	5
332	C	2	ユビヌキ	yubinuki	thumb	230	2,345	2,472	2.49	17.5	45.0	6.9	3.3	4
333	O	3	ユビワ	yubiwa	ring	187	1,082	1,174	0.39	90.0	97.5	4.0	4.3	3
334	A	1	ユリ	yuri	lily		1,396	1,457	0.91	80.0	87.5	5.2	4.5	2
335	O	2	ヨウナシ	you-nashi	pear	166	1,446	1,455	1.50	87.5	95.0	5.5	5.0	4
336	A	3	ヨーヨー	yōyō	yo-yo		1,604	1,604	0.20	80.0	80.0	4.0	3.4	4
337	O	1	ヨット	yotto	sailboat	193	918	892	0.40	85.0	92.5	4.1	2.9	3
338	A	2	ヨット	yotto	yacht		907	907	0.17	97.5	97.5	4.3	3.8	3
339	O	3	ライオン	raion	lion	140	782	782	0.00	100.0	100.0	3.1	3.2	4
340	O	1	ラクダ	rakuda	camel	43	1,198	1,198	0.17	97.5	97.5	4.1	2.9	3
341	O	2	ラグビーボール	ragubi bōru	football	95	992	992	0.68	90.0	90.0	6.7	3.3	7
342	O	3	ラケット	raketto	tennis racket	229	841	841	1.37	90.0	95.0	5.4	4.3	4
343	A	1	ラジオ	rajio	radio		974	974	0.17	95.0	95.0	4.9	4.9	3
344	O	2	リス	risu	squirrel	216	975	975	0.18	92.5	92.5	3.3	5.7	2
345	A	3	リス	risu	squirrel		1,319	1,506	1.42	50.0	75.0	3.3	3.1	2
346	O	1	リボン	ribon	bow	33	788	788	0.17	95.0	95.0	2.6	5.0	3
347	O	2	リンゴ	ringo	apple	6	941	941	0.17	95.0	95.0	2.5	6.4	3
348	O	3	レイゾウコ	reizouko	refrigerator	185	1,116	1,116	0.18	92.5	92.5	3.3	6.4	5
349	O	1	レモン	remon	lemon	135	816	816	0.00	97.5	97.5	3.1	5.7	3
350	O	2	ロウソク	rousoku	candle	44	791	791	0.00	100.0	100.0	4.0	4.8	4
351	A	3	ロープウェイ	rōpuuei	aerial cableway		1,820	1,668	2.00	45.0	75.0	5.9	3.0	5
352	O	1	ローラースケート	rōrā-sukêto	roller skate	189	2,806	2,916	0.82	55.0	60.0	5.1	3.4	8
353	A	2	ロケット	roketto	rocket		1,478	1,478	0.35	90.0	90.0	4.2	3.5	4
354	O	3	ロッキングチェア	rokkingu chieâ	rocking chair	188	1,894	1,899	1.78	20.0	85.0	7.2	2.0	8
355	O	1	ロバ	roba	donkey	75	1,452	1,329	1.30	37.5	85.0	4.0	2.9	2
356	C	2	ワイシャツ	wai-shatsu	shirt	203	1,430	1,479	1.58	72.5	85.0	5.7	5.9	4
357	O	3	ワシ	washi	eagle	82	1,180	1,215	1.14	70.0	92.5	4.7	2.7	2
358	A	1	ワシ	washi	eagle		1,316	1,400	2.00	32.5	87.5	5.3	2.7	2
359	O	2	ワニ	wani	alligator	3	812	812	0.00	97.5	97.5	3.5	4.1	2

APPENDIX B
Redrawn or Newly Added Pictures From Snodgrass and Vanderwart (1980)




































Redrawn or newly added pictures from Snodgrass and Vanderwart (1980) are listed. These are provided by Nishimoto and Hayashi (1996). The number under each picture shows the item number (see Appendix A for details).











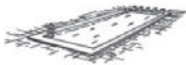

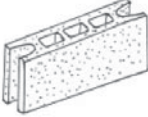











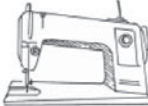















APPENDIX B (Continued)



APPENDIX B (Continued)

				
147	151	153	156	157
				
158	162	166	168	169
				
170	173	174	175	176
				
177	179	180	184	186
				
187	188	189	198	200
				
202	203	204	211	217
				
220	221	224	228	230

APPENDIX B (Continued)

				
241	247	249	252	253
				
255	262	264	270	275
				
283	287	292	294	295
				
299	304	308	309	310
				
311	312	315	316	320
				
323	329	330	332	334
				
336	338	343	345	351
				
353	356	358		