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The subjective familiarity of 40 homophone pairs was examined. The homophones consisted of monosyllabic English words (on one reading) and male first names (on the other)—for example, *art* and *Art*. Subjects heard these homophones embedded in two kinds of lists, one with 40 unambiguous words and one with 40 unambiguous names. Ratings were made for familiarity as words and as names. These correlated significantly with the log of printed frequency (.63 for words, .53 for names). In a final task, just the homophones were presented, and the subjects were asked for a comparative rating of whether the word usage or the name usage was more familiar. This direct comparison correlated well (.91) with the difference between the ratings for the name and word familiarities, but less well (.55) with the differences between the printed frequencies of the word and name meanings. This indicates either consistent biases in the judgments or true differences between printed frequencies and subjective familiarity.

Homonyms have been useful in psychological research, because they can help us test lexical effects without interference from phoneme-based or sound-based effects. The primary benefit has been in the study of lexical access (Coltheart, Davelaar, Jonasson, & Besner, 1977; Davelaar, Coltheart, Besner, & Jonasson, 1978; H. Rubenstein, Garfield, & Millikan, 1970; H. Rubenstein, Lewis, & M. A. Rubenstein, 1971), in which the ability to access one phonemic string via two different orthographic strings (which might represent words of different frequency classes) can shed light on access in the general case.

Homonyms that differ orthographically ("homophones") have separate entries in word counts and therefore can be assigned printed frequencies directly (in sources such as Thorndike & Lorge, 1944, or Kučera & Francis, 1967). Homonyms with the same spelling are more difficult to distinguish, though it is possible in some cases. For example, the expanded version of the Brown corpus (Francis & Kučera, 1982) provides syntactic markers, which can distinguish such pairs as *arm* (the noun) and *arm* (the verb). A similar approach is taken for British English for the Lancaster–Oslo/Bergen corpus (Johansson & Hofland, 1989).

Printed frequency counts have some inherent limitations, some of which can be overcome by using subjective judgments of familiarity. Printed frequency is especially problematic for the lower frequency words, since whether or not lower frequency items will be represented depends on the particular texts chosen. When frequency and familiarity disagree, it is familiarity that better predicts performance (Connine, Mullennix, Shernoff, & Yelen, 1990; Gernsbacher, 1984; Kreuz, 1987).

One class of homonyms that has rarely been studied is that of proper name/common word pairs, such as *art* and *Art*. Kreuz (1987) included 48 such pairs in his list of homonyms to be rated, but there was a great deal of variation in the type of proper name included. These ranged from typical first names (*Ben* and *Mary*) to unusual first names (*Dred* and *Cain*) to locations (*Maine* and *Skye*) to names that occur only as part of larger names (*Klux* and *Rhode*). Since names of such variety are associated with varying categories, they do not provide a good base for studies dealing explicitly with the proper/common dimension. The present study presents a small but tightly controlled set of stimuli that can provide the basis for further exploration. Additionally, if there are differences across the different groups of speakers of English, or for the same group across time, it will be helpful to have a baseline for comparisons. It may be that familiarity ratings for names change more readily than those for words, given the changes in name selection that can be seen across generations. Such changes will be easier to assess with more data. Also, it is hardly the case that words are stable. Kreuz (1987) includes words like *gene* that have become much more heavily used in recent times, but also words like *moll* that are nearing obsolescence.

The homonyms studied here were a subclass of homophones, ones in which the words not only are pronounced the same, but also are spelled the same. Having them differ on the proper/common dimension allows us to ignore the "different word/different senses" distinction that is otherwise inherent in such homophones. (For example, the use of *ear* as "musical sense" may or may not be a different word, depending on the criteria.) In the present study, the homophones were restricted in spelling, number of syllables, and semantic domain. The spelling

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was required to be the same, so that the only way of distinguishing the word from the name in orthography is the capitalization. Although such a restriction has drawbacks, its benefit is that there can be no difference in the treatment of the word/name on the basis of unusual spelling (as in, say, *dug* and *Doug*). All the items chosen were limited to one syllable. This was done to eliminate any effect of stress differences (such as *Mabel* and *Nadene*; even the same stress sometimes leads to differences in vowel reductions, as with *Arlene* and *Delean*) and to simplify the classification of the homonyms (e.g., by vowel type). The semantic domain selected was that of male first names (and nicknames so common as to be the norm for some, such as *Mike*). Surnames are too open-ended a class for many purposes; we would not be surprised to find almost any word in use as a surname (e.g., when the main character of the film "Yellowbeard" adopts the alias "Dr. Anthrax"). This does not mean that surnames are not differentially familiar, since reliable ratings have been obtained previously (Zechmeister, King, Gude, & Opera-Nadi, 1975). Still, the smaller number of common first names seemed more promising in terms of consistency. Since there are relatively few female first names that are monosyllabic, it seemed better to narrow the semantic field even further by using only male first names.

The subjects not only rated each homophone under each condition (i.e., as a word or as a name), but also gave direct estimates of whether the item was more frequent as a word or as a name. This allows us to examine more closely the relationship between the use of the two scales. Such measures could also be obtained for comparisons of which sense of a word is more common, which part of speech gets more usage, and so on. However, it is also possible that proper names are treated differently in their subjective rate of occurrence, given their important role in a speaker's community. Common words account for much more of the written texts in Kučera and Francis (1967); just the nouns are about five times as common as the names (Francis & Kučera, 1982, p. 544). Thus, it may be that the direct comparison of familiarity for word usage versus name usage will reveal an intrinsic difference between judging word frequency and judging name frequency. Alternatively, it may be that subjects simply use frequency in an undifferentiated way, and the name and word judgments will be comparable.

EXPERIMENT 1

In the first experiment, we presented the homophonic names and words to subjects auditorily for them to make familiarity judgments within a 7-point scale.

Method

Stimuli. Forty homophones, for which one meaning is a male given name and the other a noun, verb, or adjective, were chosen for this study (see Table 1). Forty unambiguous names and 40 unambiguous words were also chosen. These tokens are listed in Tables 2 and 3. The homophones appeared in two lists, in combination with the names and the words—one list of 80 names and one list of 80 words. Ten dummy items (either unambiguous names or unambiguous words, as appropriate) were added to the beginning of each list. These were not analyzed, since we assumed that the subjects were fine-tuning their rating criteria at the beginning of the test.

Table 1
Ratings of the Homophones in Experiment 1

Homophone	Rank as Name	Mean Rating as Name	*SD* as Name	Rank as Word	Mean Rating as Word	*SD* as Word
John	1	6.93	0.24	9	5.03	2.13
Mike	2	6.90	0.30	8	5.06	1.72
Bob	3	6.67	0.94	13	4.25	1.98
Bill	4	6.67	0.59	3	5.87	1.26
Tom	5	6.45	0.80	11	4.53	2.39
Mark	6	6.16	1.21	7	5.28	1.68
Rob	7	5.96	1.51	5	5.56	1.45
Jack	8	5.77	1.38	14	4.21	2.19
Rich	9	5.32	1.77	2	6.06	1.13
Pat	10	5.16	1.52	10	4.84	1.85
Frank	11	5.00	1.63	16	4.18	1.80
Nick	12	4.90	1.37	18	3.90	1.63
Chuck	13	4.58	1.40	30	3.18	1.95
Don	14	4.12	1.82	31	2.90	1.80
Ray	15	4.12	1.78	22	3.78	1.94
Brad	16	3.87	1.40	35	2.43	1.72
Will	17	3.83	1.80	1	6.15	1.27
Glen	18	3.77	1.66	36	2.31	1.55
Jay	19	3.67	1.53	32	2.78	1.67
Art	20	3.22	1.72	6	5.40	1.36
Curt	21	3.22	1.38	34	2.56	1.36
Gene	22	3.03	1.68	17	4.15	1.77
Hank	23	2.96	1.42	38	2.06	1.64
Stew	24	2.96	1.32	27	3.37	1.80
Cliff	25	2.96	1.40	21	3.78	1.49
Dean	26	2.87	1.28	24	3.59	1.82
Drew	27	2.45	0.96	15	4.18	1.94
Bud	28	2.41	1.58	26	3.43	1.52
Grant	29	2.35	1.30	23	3.62	1.77
Norm	30	2.38	1.22	25	3.46	1.66
Rod	31	2.38	1.35	19	3.81	1.63
Earl	32	2.29	1.29	39	2.00	1.41
Chip	33	2.25	1.26	12	4.25	1.48
Lance	34	2.19	1.22	37	2.06	1.16
Dale	35	1.83	1.09	40	1.90	1.08
Clay	36	1.67	1.01	29	3.31	1.57
Guy	37	1.67	0.94	4	5.65	1.47
Wade	38	1.54	1.02	33	2.75	1.70
Buck	39	1.38	0.91	20	3.81	2.10
Kit	40	1.22	0.80	28	3.31	1.74

Note—*SD*, standard deviation.

The words and names were presented auditorily by a male native speaker of American English. The words were randomized together, and the names were randomized together. Three different randomizations of each were read; from these, one pronunciation of each word and name was chosen as a stimulus token. For the homophones, only the version spoken as a name was used in the name lists, and the word version was used in the word lists.

Subjects. Thirty-two subjects from the Yale University community were paid to participate. There were 19 women and 13 men, all native speakers of American English. The subjects were tested individually in a sound-treated room.

Procedure. Four randomizations of the word tokens and four randomizations of the name tokens were created. Each subject listened to one list of words and one list of names. Half heard the names first, and half heard the words first. The subjects were instructed to rate the items on a scale of 1–7, from *very uncommon* to *very common*. They were told that some of the items would be

ambiguous, and they were instructed to base their ratings on the first meaning that came to mind. The text of the instructions is given in the Appendix.

The subjects filled in answer sheets with the numbers 1–7 for each list. The instructions emphasized that all values between 1 and 7 were to be used. This aspect of the instructions was usually repeated by the experimenter after the instructions had been read. We used an all-positive scale rather than one that went from −3 to +3, for practical reasons. In pretests, the subjects had been less adept with the negative/positive scale, and there were clear instances in which they had omitted the minus sign. None of the subjects reported any difficulty in conceiving of the scale as one covering a range from rare to common.

Results and Discussion

Table 1 shows the results for the homophones. Each homophone is given a rating and a rank. The rating is the average score over all subjects given to that lexical item when heard as part of the name list and when heard as part of the word list. A rating of 7 means *very common*; a rating of 1 indicates *very uncommon*. Names and words are ranked from 1 to 40, with 1 reflecting the highest rating (most common).

Table 2
Ratings of the Unambiguous Names in Experiment 1

Name	Mean Rating	*SD*
Dave	6.15	1.27
Chris	6.06	1.13
Jeff	5.87	1.26
Dan	5.65	1.47
Scott	5.56	1.45
Tim	5.40	1.36
James	5.28	1.68
Ed	5.06	1.72
Greg	5.03	2.13
George	4.84	1.85
Al	4.53	2.39
Ted	4.25	1.48
Ron	4.25	1.98
Charles	4.21	2.19
Keith	4.18	1.94
Sam	4.18	1.80
Craig	4.15	1.77
Fred	3.90	1.63
Carl	3.81	1.63
Bruce	3.81	2.10
Roy	3.78	1.49
Stan	3.78	1.94
Ralph	3.62	1.77
Russ	3.59	1.82
Luke	3.46	1.66
Mitch	3.43	1.52
Walt	3.37	1.80
Seth	3.31	1.74
Ross	3.31	1.57
Clint	3.18	1.95
Lloyd	2.90	1.80
Nate	2.78	1.67
Ned	2.75	1.70
Dwight	2.56	1.36
Hal	2.43	1.72
Zach	2.31	1.55
Abe	2.06	1.16
Sid	2.06	1.64
Floyd	2.00	1.41
Garth	1.90	1.08

Note—*SD*, standard deviation.

Table 3
Ratings of the Unambiguous Words in Experiment 1

Word	Mean Rating	*SD*
can	6.37	1.03
clock	5.96	1.35
date	5.96	1.23
joke	5.90	1.08
chose	5.84	1.19
jog	5.56	1.24
junk	5.34	1.77
boot	5.34	1.38
gain	5.21	1.36
tune	4.78	1.64
hike	4.59	1.34
grill	4.56	1.68
frame	4.46	1.54
bit	4.40	1.82
net	4.37	1.45
brag	4.31	1.42
curl	4.31	1.74
rib	4.28	1.54
ban	4.21	1.84
rot	4.09	1.63
raid	3.84	1.60
dim	3.68	1.30
tame	3.65	1.33
rank	3.65	1.49
warp	3.56	1.56
rim	3.53	1.45
pant	3.43	1.62
mock	3.43	1.38
beak	3.37	1.21
chess	3.25	1.54
reek	3.21	1.49
miff	3.09	1.37
sill	3.00	1.72
dab	2.81	1.59
jade	2.68	1.22
lurk	2.65	1.12
wad	2.59	1.36
clan	2.56	1.62
etch	2.21	1.15
lilt	1.78	1.21

Note—*SD*, standard deviation.

Tables 2 and 3 show the mean ratings for the unambiguous names and unambiguous words, respectively. The subjects found this task easy to do, and they used the full range of the scale. The standard deviations were similar to those in Kreuz (1987). For the word list, there was no effect of the order in which the lists were heard [$F(1,2558) = 1.37$, $p = .24$]. The mean over all items for the subjects who heard the word list first was 3.9; the mean for those who heard the name list first was 4.0. There was an effect of order for the name list, however [$F(1,2558) = 9.31$, $p = .002$]. The mean over all items for the subjects who heard the word list first was 3.6; the mean for those who heard the name list first was 3.9. Thus, overall, names were given slightly lower ratings by the subjects who had first rated words, perhaps because no name is as common as the most common word. (Only a few words differed by more than 1 rating point, depending on the order in which the lists were heard. The

names, followed by the scores from when the word list was heard first and from when the name list was heard first, were *Nick*, 4.38/5.38; *Ray*, 3.63/4.63; *Rod*, 1.69/3.00; *Ned*, 1.44/2.69; *Zach*, 1.38/2.44. The words, with scores in the same order, were *ray*, 3.19/4.38; *stew*, 3.88/2.88; *clay*, 3.94/2.69; *lurk*, 2.13/3.19.)

The ratings for the words correlated well with the Kučera and Francis (1967) counts as well as with previous ratings. For the Kučera and Francis numbers, all orthographic matches were counted, so that some included name usages as well. A log transform was applied, since this minimizes the effect of extremely frequent words (Carroll, 1971). The correlation for the 73 words that occurred in the Brown corpus was a significant .63 ($p < .001$). This is somewhat lower than Kreuz's (1987, p. 156) correlation of .75. The correlation was .72 for the subset of homophones and nonhomophones. For the comparison with other familiarity scales, the FAM property of the MRC psycholinguistic database (Wilson, 1988) was used. (There was no overlap with Kreuz, 1987, of course, since he required a different spelling and used homonyms with the same spelling.) The FAM number collapses the rating values of Paivio, Yuille, and Madigan (1968), Toglia and Battig (1978), and Gilhooly and Logie (1980), again on a 7-point scale. There were only 37 words from the present set of 80 that had such a rating. The correlation with the current ratings was .89 ($p < .001$), similar to Kreuz's (1987, p. 156) .85 correlation with the Toglia and Battig (1978) values. The 19 items that were only words had a correlation of .91 ($p < .001$), and the 18 homophones had a correlation of .88 ($p < .001$). So, despite the possible problems in using word/name homophones, the familiarity ratings behaved quite similarly to those in the literature.

We can also examine the name rating in relation to printed frequency, although there are no other ratings of first names in the literature. Nine of the names in this study did not appear in Francis and Kučera (1982) as proper names. The correlation for the remaining 71 items with the log frequency of the proper-name usage was .53 ($p < .001$). The correlation for the 37 unambiguous names that appeared in the corpus was .38 ($p < .05$), and the value for the 34 homophones was .67 ($p < .001$). The lower correlation for this set of items could have been due to any number of factors, including the auditory presentation used; differences between the form of a name used in speech and in print (e.g., using *William* in print and *Will* in speech); overrepresentations of certain names in the Brown corpus (e.g., *Dwight*, presumably referring to Eisenhower); the conflation of first-name and last-name usage in the Francis and Kučera count; and probable changes in the actual frequency of male first names over the past 30 years. In general, though, if male first-name familiarity is the dimension of interest, it appears that it would be advisable to obtain such familiarity directly rather than inferring it from the printed frequency.

EXPERIMENT 2

Although we can compare the ratings of the use of the homophones as names or as words, it should also be possible to directly assess subjects' judgments of the relative frequency. The objective of the second experiment was to determine whether subjects are able to relate these two domains, even though they differ in size and frequency within the language.

Method

Stimuli. The 40 homophone stimuli from Experiment 1 were used for Experiment 2. These items had appeared in two forms in Experiment 1; they had been read either as a name or as a word. In order to use both of these productions, two randomizations of the stimuli were created, one with the 40 homophones pronounced as part of the name list, and the other with the 40 homophones pro-

Table 4
Ratings of the Homophones for Relative Occurrence as Words or as Names in Experiment 2

Homophone	Rating	*SD*
Kit	6.25	1.29
Guy	5.65	1.96
Art	5.56	1.50
Clay	5.34	1.61
Buck	5.28	1.88
Cliff	5.03	1.46
Drew	4.96	1.87
Rod	4.90	1.61
Stew	4.68	1.61
Chip	4.65	1.73
Wade	4.62	2.22
Will	4.62	1.87
Rich	4.43	1.83
Grant	4.34	1.92
Dean	4.21	1.79
Lance	4.18	1.97
Norm	4.18	2.05
Bud	4.03	1.63
Pat	3.93	1.62
Rob	3.87	1.15
Gene	3.71	1.97
Ray	3.59	1.81
Mark	3.34	1.67
Nick	3.31	1.42
Earl	3.28	2.06
Bill	3.21	1.47
Chuck	3.06	1.60
Frank	3.00	1.84
Dale	2.90	1.87
Curt	2.81	1.90
Don	2.56	1.79
Glen	2.40	1.64
Jack	2.40	1.62
Jay	2.40	1.68
John	2.03	1.97
Mike	2.00	1.50
Bob	1.93	1.45
Brad	1.87	1.23
Hank	1.68	1.40
Tom	1.28	1.08

Note—For ratings, 7 = *word meaning is more frequent*; 1 = *name meaning is more frequent*; 4 = *both are equally frequent or infrequent*. *SD*, standard deviation.

nounced as part of the word list. The subjects would thus hear only one or the other production.

Subjects. The same subjects that had participated in Experiment 1 listened to one of these lists after they had rated the words and names. The list of 40 homophones always came third. Half the subjects heard the items that had been pronounced as names; the other half heard the items that had been pronounced as words.

Procedure. The subjects were instructed that they would hear some of the items from the previous lists, and that the items could be used as either words or names. They were asked to rate the commonness of the word usage relative to the name usage. They were asked to rate each item on a scale of 1–7 (1 = *item is much more common as a name*, 7 = *item is much more common as a word*, and 4 = *both uses are equally common*). The exact text of the instructions is given in the Appendix.

Results and Discussion

The rating and standard deviation of the rating for each homophone are given in Table 4. There was no effect of whether the item was read as a name or as a word [$F(1,1278) < 1$, n.s.]. The mean for items read as names was 3.6, and the mean for items read as words was 3.7.

Figure 1 shows the word versus name score plotted with a square for each item. In order to compare these values with those of Experiment 1, the graph shows the scores with 4 subtracted, so that a score of 3 means most wordlike, −3 means most namelike, and 0 means equally likely to be a name or a word. The ratings descend in a fairly linear manner, from 2.25 for *Kit* to −2.72 for *Tom*. There is no apparent clumping of the values. We might have expected a fair number of "0" values if the subjects knew that both senses were neither extremely common nor uncommon but were unable to relate the two scales and so opted for equality. Instead, they seem to have been able to make reliable judgments, ones that matched their use of both independent scales.

Figure 1 also plots, for each item, the difference between the rating for the item as a word and the rating for the item as a name from Experiment 1 (diamonds). There was a significant correlation of .91 between the difference score (word − name, Experiment 1) and the relative frequency score (word vs. name, Experiment 2). The difference value tends to be higher than the direct rating. This means that being a homophone either increases the familiarity on the word task, or decreases the familiarity on the name task. We have no way of deciding between these with the present results. Indeed, each may be active, especially at different ends of the scale. For items that are more common as names, it could be that the name familiarity boosts the value for the words (as with *hank* and *tom*). With items that are more common as words, subjects may be unable to ignore the word meaning, which might induce them to lower their name ratings (as with *guy* and *will*). However, since there was no effect of presentation order in Experiment 1, the effect seems to be due to a feature of the homophones rather than to the task at hand. That is, if the seemingly higher than expected familiarity of the word sense of *tom* is due to the familiarity of the name *Tom*, it appears whether the name sense has been processed in the experimental session or not. Whatever interference there is occurs for the subjects who perform the word rating task first, where only their internal knowledge of *Tom* is relevant.

The relative familiarity judgments were also compared with the difference between the printed frequencies for the Brown corpus of American English (Francis

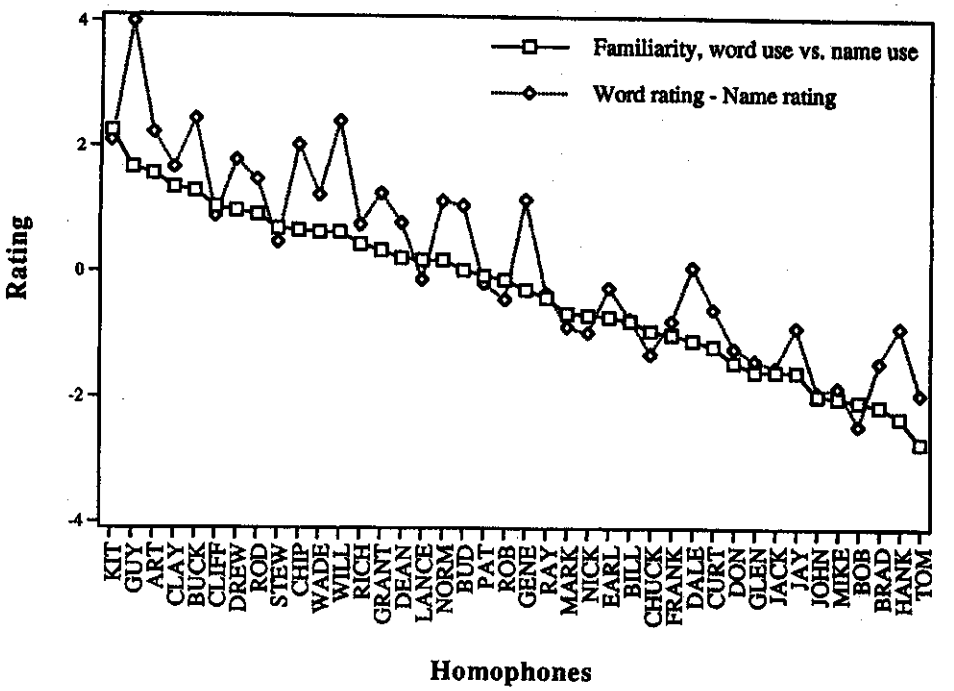

Figure 1. Plot of the direct word/name rating (Experiment 2) versus the difference between the separately obtained word rating and name rating (Experiment 1).

& Kučera, 1982) and the LOB corpus of British English (Johansson & Hofland, 1989). In this case, items that had no occurrences in either of the corpuses were assigned a frequency of 1, so that all 40 items could be included in the analysis. A difference value was obtained by subtracting the log of the name frequency from the log of the word frequency. If there is any large cultural difference between the American Brown corpus and the British LOB corpus, the correlation of the present American judgments should be less for the LOB than for the Brown corpus. In fact, the correlation was smaller for the Brown corpus (.55; $p < .001$) than for the LOB corpus (.59; $p < .001$). From this result, there is no indication of major cultural differences in the rating of name and word frequencies.

The correlations with the printed frequencies, however, are much smaller than the correlation with the subjects' own familiarity judgments. On the one hand, this is completely unsurprising, since the judgments were all based on the same internal lexicons and the printed frequencies combined many writers' work. The occurrence of low-frequency items, including names (and, in some of our cases, nicknames), is less representative than that of high-frequency items. On the other hand, it is still the case that the task in the first experiment was to rate the items within their own domain—that is, words in relationship to the usage of other words and names in relationship to the usage of other names. It could easily have been the case that nonlinearities in one or the other distribution would lower the correlation between the direct judgments and the difference between the separate judgments. Perhaps if the word list had included more very high frequency items, this effect would have occurred. As it was, *will* was the only item that had more than 500 occurrences. So, given the high correlation, we can conclude that subjects are successful in relating the two kinds of frequencies that they were asked to report on here.

It might be that the high correlation is due not to the use of a single lexicon (i.e., the subject's), but instead to the use of the same subjects in both experiments. The subjects may have retained a memory of their ratings and simply compared them mentally, rather than performing the task afresh. However, this notion would be difficult to assess, since another group of subjects would, no doubt, give a lower correlation, simply because intersubject correlations tend to be lower than intrasubject ones. The lack of an effect of list order in Experiment 1 is also helpful here, since the subjects were able to ignore the judgments they made on the homophones when they performed the second task in Experiment 1. This makes it likely that they were performing as desired in Experiment 2, and thus the high correlation between the independent word and name judgments and the direct comparison judgments is due to a close relationship between the two.

GENERAL DISCUSSION

The subjects were quite capable of making familiarity judgments on homophones of common words and proper names. The ratings obtained for the word meanings were comparable with previously obtained ratings, despite the difference in the word type (the homonomy) and the use of auditory rather than visual presentation. There was no possibility of covert use of differences in the printed version, since all the stimuli were to be spelled the same on both readings. The name judgments correlated significantly with the log of the printed frequency, but the correlation was not as large as that for common words. Several possible explanations for this difference were proposed, but the general conclusion is that if familiarity as a name is the dimension of interest, familiarity ratings should be obtained directly. The values listed here appear to be usable, at least for the United States and Britain; the one comparison that we could make for these results—the comparison of written American and British English—showed a small difference, with, in fact, slightly better agreement between the printed British English and the current American familiarity judgments than with the American print sources.

It was also possible to obtain reliable ratings of the relative occurrence of the common word and proper name uses of the homophones. This rating correlated well with the difference between the separately obtained familiarity of the word sense and the name sense, even though the words and names were rated for familiarity as words or as names, respectively. Thus, the two kinds of familiarity, one as a word and one as a name, are still based on the same kinds of experience, since the direct comparison is well matched to the independent ones.

These stimuli may prove useful for other studies as well. For example, there are some aphasia patients who seem to be specifically impaired for proper names (Semenza & Zettin, 1988). Would such an aphasia interfere with the word meaning of word/name homophones? Such homophones can also be used to explore the effects of the common/proper distinction on priming (e.g., Valentine, Moore, Flude, Young, & Ellis, 1993). These homophones have already formed the basis of one study (Whalen & Wenk, 1993), and another is in progress. The first study showed that the names behaved like high-frequency words, even though they were lower in their average rating than were the words. The work in progress is a test of whether the two familiarity functions affect word and name reading times in a complementary way. Subjects rapidly read the items, sometimes as a word, and others as a name. If the reading-appropriate familiarity is what determines response time, there should be different patterns for the two functions. Results such as these will solidify what is apparent from the present work—that subjects do indeed attach different levels of familiarity to the word and the name meanings of homonyms.

REFERENCES

CARROLL, J. B. (1971). Measurement properties of subjective magnitude estimates of word frequency. *Journal of Verbal Learning & Verbal Behavior*, **10**, 722-729.

COLTHEART, M., DAVELAAR, E., JONASSON, J., & BESNER, D. (1977).

Access to the internal lexicon. In S. Dornic (Eds.), *Attention and performance VI* (pp. 535-555). London: Academic Press.
CONNINE, C. M., MULLENNIX, J., SHERNOFF, E., & YELEN, J. (1990). Word familiarity and frequency in visual and auditory word recognition. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, **16**, 1084-1096.
DAVELAAR, E., COLTHEART, M., BESNER, D., & JONASSON, J. T. (1978). Phonological recoding and lexical access. *Memory & Cognition*, **6**, 391-402.
FRANCIS, W. N., & KUČERA, H. (1982). *Frequency analysis of English usage: Lexicon and grammar*. Boston: Houghton Mifflin.
GERNSBACHER, M. A. (1984). Resolving 20 years of inconsistent interactions between lexical familiarity, concreteness, and polysemy. *Journal of Experimental Psychology: General*, **113**, 256-281.
GILHOOLY, K. J., & LOGIE, R. H. (1980). Age-of-acquisition, imagery, concreteness, familiarity, and ambiguity measures for 1,944 words. *Behavior Research Methods & Instrumentation*, **12**, 395-427.
JOHANSSON, S., & HOFLAND, K. (1989). *Frequency analysis of English vocabulary and grammar*. Oxford: Oxford University Press.
KREUZ, R. J. (1987). The subjective familiarity of English homophones. *Memory & Cognition*, **15**, 154-168.
KUČERA, H., & FRANCIS, W. N. (1967). *Computational analysis of present-day English*. Providence, RI: Brown University Press.
PAIVIO, A., YUILLE, J. C., & MADIGAN, S. A. (1968). Concreteness, imagery and meaningfulness values for 925 words. *Journal of Experimental Psychology Monographs*, **76**(3, Pt. 2).
RUBENSTEIN, H., GARFIELD, L., & MILLIKAN, J. (1970). Homographic entries in the internal lexicon. *Journal of Verbal Learning & Verbal Behavior*, **9**, 487-494.
RUBENSTEIN, H., LEWIS, S. S., & RUBENSTEIN, M. A. (1971). Evidence for phonemic reading in visual word recognition. *Journal of Verbal Learning & Verbal Behavior*, **10**, 645-654.
SEMENZA, C., & ZETTIN, M. (1988). Generating proper names: A case of selective inability. *Cognitive Neuropsychology*, **5**, 711-721.
THORNDIKE, E. L., & LORGE, I. (1944). *The teacher's word book of 30,000 words*. New York: College Press.
TOGLIA, M. P., & BATTIG, W. F. (1978). *Handbook of semantic word norms*. New York: Erlbaum.
VALENTINE, T., MOORE, V., FLUDE, B. M., YOUNG, A. W., & ELLIS, A. W. (1993). Repetition priming and proper name processing. Do common nouns and proper names prime each other? *Memory*, **1**, 329-349.
WHALEN, D. H., & WENK, H. E. (1993, November). *Effect of the proper/common distinction on duration*. Paper presented at the meeting of the Psychonomic Society, Washington, DC.
WILSON, M. (1988). MRC Psycholinguistic Database: Machine-usable dictionary, version 2.00. *Behavior Research Methods, Instruments, & Computers*, **20**, 6-10.
ZECHMEISTER, E. B., KING, J., GUDE, C., & OPERA-NADI, B. (1975). Ratings of frequency, familiarity, orthographic distinctiveness and pronunciability for 192 surnames. *Behavior Research Methods & Instrumentation*, **7**, 531-533.

APPENDIX
Written Instructions Given to the Subjects Prior to Hearing Each List

Word List (Experiment 1):

You are about to hear a list of 90 English words. What we want to know is how common you think each word is. If you think the word you hear is VERY COMMON, put down a 7 in the blank provided. If you think it is VERY UNCOMMON, put down a 1. Try to use all the values in between, since many items fall between these extremes. At the beginning, you may not be too sure about where you are on the scale, but don't worry about it, just put down your first impression and leave it. Even if you have to guess, do not leave any blanks.

Some of the words will be ambiguous. For example, you might hear "creek" and not know if it was, indeed, "creek" or rather "creak." Since you will be listening, there is no way to tell, so just put down the rating for the word you thought of first.

The words will have three seconds of silence between them, which may seem a bit short at first but will, in all likelihood, seem just right later. There is a longer pause at the end of each line, which will help you keep your place.

If you have any questions, please ask the experimenter now. Thank you for your participation.

Name List (Experiment 1):

The instructions for the name list were exactly the same as the instructions for the words, except that "given names for males" was substituted for "English words" in the first sentence, and "names" was substituted for "words" throughout. In addition, the following paragraph was substituted for the second paragraph in the word list instructions:

> Some of the names are shortened forms, such as Doug would be from Douglas. Try to judge how common the name is in the form you hear. For example, if you heard Douglas, try to picture how frequently people go by that form rather than Doug.

Homophone List (Experiment 2):

You may have noticed in the previous lists that some of the items appeared both as names and as words. What we would like to know now is just how common each usage is. So, in this last portion, please write down a number showing how common the word usage is relative to the name usage. If the item is much more common as a name, give it a 1. If it is much more common as a word, give it a 7. If both uses are about equally common, or uncommon, give it a 4. For example, the word "able" is not particularly common, but it is much more common than the name "Abel," so you might give it a 7. The name "Doug" is not very common, but "dug" is not a very common word, so you might give Doug a 4. On the other hand, the name "Lou," though less than common, is a lot more common than the word "lieu," so you might give it a 1.

Try to use all the values from 1 to 7. There is the same arrangement of items (three seconds between, longer at the end of the line) as before. If you have any questions, ask the experimenter now. Thanks again!

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