

Running Head: RATINGS OF FAMOUS PEOPLE BY THE OVER-40s

Stimulus generation, ratings, phoneme counts, and group classifications for
696 famous people by British adults aged over 40 years

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Abstract

Matching stimuli across a range of influencing variables is no less important in studies on face recognition than it is for word processing. Whilst a number of corpora exist to allow experimenters to select a carefully controlled set of word stimuli, similar databases for famous faces do not exist. This paper, therefore, provides researchers in the area of face recognition with a useful resource on which to base their stimulus selection. In the first phase of the investigation, British adults aged over 40 years were requested to generate the names of famous people (or celebrities) that they thought they would recognise and to write these down. The most frequently named celebrities were then rated by adults from the same age population for familiarity, distinctiveness, and age of acquisition. The result is a database of 696 famous people with an indication of their relative eminence in the public consciousness and rated for these important variables. Phoneme counts are also provided for each famous person, together with family name frequency counts in the general population where available.

Stimulus generation, ratings, phoneme counts, and group classifications for 696 famous people by British adults aged over 40 years

A major concern in psychological research is to match stimuli across as many variables as possible, whilst manipulating only the experimental variable. Ready-made databases containing the information to allow such matching and manipulation are, thus, particularly useful to researchers across a number of fields. They have proved their worth in domains such as lexical processing (e.g., Bird, Franklin, & Howard, 2001; the CELEX Database of Baayen, Piepenbrock, & van Rijn, 1993; Coltheart, 1981; Cortese & Fugett, 2004; Gilhooly & Logie, 1980a,b; Morrison, Chapell, & Ellis, 1997; Paivio, Yuille, & Madigan, 1968; Spreen & Schulz, 1966; Stuart, Dixon, Masterson, & Gray, 2003) and picture and object processing (Alario & Ferrand, 1999; Carroll & White, 1973; Cycowicz, Friedman, Rothstein, & Snodgrass, 1997; Masterson & Druks, 1998; Snodgrass & Vanderwart, 1980; Szekely, Jacobsen, D'Amico, Devescovi, Andonova, Herron, et al., 2004).

Similarly, the speed of face and name processing is also dependent on a number of influential variables. Famous faces are notoriously difficult to name (for a review, see Valentine, Brédart, & Brennen, 1996). It is, therefore, also of great importance to face and name processing research to ensure that the stimuli are well known to participants and that the target items are well matched across a range of variables known to influence response times. The data in this paper will help researchers to match and manipulate experimentally the faces of a large number of famous people for familiarity

(cumulative frequency), facial distinctiveness, age of acquisition (henceforth AoA), surname frequency, and number of phonemes.

It is obvious that the degree of familiarity that a participant has with a particular famous person will have a strong influence on processing speed. The familiarity, or cumulative frequency¹, effect for faces has been reported by several researchers (e.g., Lewis, 1999; Moore & Valentine, 1998; Rendell, Castel, & Craik, 2005). In the present paper, the participants were instructed to base their judgement on the number of times they had seen, or been reminded of, each celebrity in the course of their lives. The rating was to include auditory, visual, or verbal encounters with the famous person in different media and also any face-to-face encounters they may have had. Brédart (1993) has demonstrated a positive relationship between rated familiarity of celebrity names and naming accuracy. With respect to word processing, a recent connectionist report accuses AoA studies of not correctly controlling the count of word frequency (Zevin & Seidenberg, 2002). In this paper, Zevin & Seidenberg stress the importance of rated familiarity as a measure of word frequency and cite Gernsbacher (1984) in support of their position. Gernsbacher proposed rated familiarity to be a more sensitive measure of frequency differences than word frequency counts obtained from published corpora.

The visual complexity of drawn objects has been reported to be a powerful predictor of processing speed on a number of object processing tasks (e.g., Vitkovich & Tyrell, 1995; but see Alario, Ferrand, Laganaro, New,

Frauenfelder, & Segui, 2004, for a review of object naming studies). This is also true of the 'structural similarity' of the categories from which the stimuli are drawn. Humphreys, Riddoch, and Quinlan (1988) showed that the structural similarity of object categories affected naming latencies. They demonstrated that objects from structurally dissimilar categories in which the exemplars are visually dissimilar from each other (e.g., furniture) are, under some circumstances, named faster than objects from structurally similar categories (e.g., fruits, animals). The similarity of these effects to the facial distinctiveness effect has been explained in terms of a 'multidimensional face space model' by Valentine (1991). According to Valentine's model, typical faces are hard to distinguish because they are represented in a densely populated area at the centre of a multi-dimensional space. Proximity makes these representations easy to confuse. Conversely, distinctive faces are located in a sparsely populated area on the periphery of this multidimensional space. Here, there is little overlap and, thus, less similarity across faces. A distinctiveness effect for the recognition of faces has been much reported in the psychological literature, such that distinctive faces are responded to more accurately and faster than less distinctive or more typical ones (e.g., Sarno & Alley, 1997; Valentine, 1991; Valentine & Bruce, 1986). Sommer, Leuthold, Matt, and Schweinberger (1995) demonstrated that the distinctiveness ratings provided by their experimental participants correlated significantly with both their predicted and actual recognition of faces. Clearly, the similarity of structure of an object (see Moore, Smith-Spark, & Valentine, 2004) or the

typicality of a face would complicate accurate identification rather than facilitate it. Distinctiveness ratings are employed in this paper to ensure any visual similarities will be identified and weighted appropriately.

Valentine, Brédart, Lawson, and Ward (1991) explored whether the effect of the frequency of surnames in the population influenced recognition of famous people's names. They found that the effect of surname frequency was analogous to the effect of word frequency in tasks that did not require recognition of the individual (e.g., reading a name aloud). They found that high frequency surnames were responded to more rapidly. However, the effect of surname frequency was analogous to the effect of facial distinctiveness in tasks that did require recognition of the individual (e.g., determining whether or not a name was familiar). When an individual was recognised, the resulting advantage was in favour of low frequency (or distinctive) surnames. The influence of surname frequency is not restricted to the processing of printed word names. Valentine and Moore (1995) investigated the influence of surname frequency on face naming tasks that required the recall of surnames taught to previously unfamiliar faces. The authors manipulated surname frequency in a factorial design and taught names (controlled for all relevant variables) to pictures of unfamiliar faces (controlled for facial distinctiveness and other visual attributes). For example, Face A was paired with Name A (low frequency, e.g. Babich). Other participants were given Face A paired with Name B (high frequency, e.g. Smith). The effect of surname frequency was found to be analogous to the effect of word frequency on object naming,

with items that had been allocated high frequency surnames being named faster and more accurately than those that had been given low frequency surnames. However, when naming famous faces there was an advantage for participants in producing low frequency surnames. Valentine and Moore explained these results in terms of differences in the underlying nature of surname frequency and word frequency; that is to say, in the differences in the task demands between naming objects (which requires naming a token, e.g., a chair) and naming a person (which requires the production of a token marker, e.g., a unique individual, identifying John Smith).

Where available, surname frequencies are reported (Moore & Valentine, 1993) for each famous person. The measure of frequency used in this paper represents a count of surname frequencies taken from the 1989 South Manchester telephone directory. This measure has produced high correlations with samples drawn from other telephone directories. For example, between South Manchester and Durham, $r = .87$; between North Manchester and South Manchester, $r = .94$; and between South Manchester and Exeter, $r = .91$ (Moore & Valentine, 1993). There were an estimated 261,105 non-business surnames in the directory. The frequency count was calculated using $\text{Log}(x + 1)$ of the number of occurrences of the surname per 100,000 entries.

Surname frequency is not directly analogous to word frequency. For example, a very large number of people in the UK share the surname 'Smith', resulting in the name having a high surname frequency. The number of times

the surname 'Smith' is experienced will be affected by the number of people who have the name and how frequently they have been encountered (either personally or in the media). However, if naming a famous face is assumed to require access to a representation of a full name that, in most cases, is unique to an individual, then a better analogy to word frequency would be the 'familiarity' of each celebrity, as described previously.

An increasing number of studies demonstrate that AoA is an important predictor of the speed of lexical processing. People are faster to name pictures with names learned early in life than to name pictures with later-acquired names. This effect has been demonstrated across a range of languages, such as Dutch (Brysbaert, Lange, & Van Wijnendaele, 2000), English (Morrison, Ellis, & Quinlan, 1992; Morrison & Ellis, 1995; Turner, Valentine, & Ellis, 1998), French (e.g., Bonin, Chalard, Méot, & Fayol, 2002), Icelandic (Pind & Tryggvadóttir, 2002), and Spanish (Cuetos, Ellis, & Alvarez, 1999). The effects of AoA are not confined to lexical processing alone. Recently, it has been reported that AoA significantly affected the speed of perceptual classification of object pictures (Moore et al., 2004). Moreover, the age at which a celebrity was first encountered has also been demonstrated to affect the time taken to name their faces, read their names aloud, and to decide whether or not a face or name is familiar (Moore & Valentine, 1998; 1999). The participants in the current study were, thus, required to rate the stimuli on AoA, by estimating when in life they first encountered each famous person.

In addition to the well documented effects of word frequency and AoA on naming latencies, there is also evidence to suggest that word length is important, both in English (e.g., Klapp, Anderson, & Berrian, 1973; Morrison, et al., 1992) and cross-linguistically in Dutch (Meyer, Roelofs, & Levelt, 2003), Italian (Barca, Burani, & Arduino, 2002), and French (Ferrand & New, 2003)². One measure of word length is the number of phonemes in a word (e.g., Cuetos et al., 1999). In a study investigating object picture naming, Morrison et al. (1992, Experiment 1) found that participants took longer to name pictures whose names contained more phonemes than those whose names contained fewer phonemes. Therefore, in order to be able to match stimuli on as many relevant variables as possible, a phoneme count for the famous names has been included.

The phoneme counts presented in this paper are based on a model of spoken British English known as “BBC English” (Jones, 1997), which can be thought of as the typical pronunciation used by newscasters and other professional speakers. Different regional accents might, thus, give rise to different phoneme counts than those presented here.

There are many potential uses for these phoneme counts and, with this in mind, the counts have been broken down into the constituent parts of each name (first name, second name, etc.). The natural effect of this is that phonetic phenomena such as elision, whereby a preceding word might affect the pronunciation of the following word, are not reflected in the counts. In the same spirit, where different pronunciations are possible, the fullest

transcription is provided together with footnotes denoting this fact, unless the shorter version is considered to be more commonly used. The motivation for this is that in an experimental setting, careful speech is more likely than casual speech; however, the extensive footnotes will enable each user to adapt the counts for their particular purposes³.

As well as providing an indication of how well known a celebrity is to the general public aged over 40 years, information on the semantic categorisation of famous people into occupations, such as politicians, musicians, and film stars, is also provided in this paper. In some small way, the database may also provide a document of the socio-cultural and historical knowledge and experiences of British adults over the past 80 years.

The data collection took place in two phases, an initial name generation phase, in which the best-known (or most frequently generated) famous people were uncovered by a large-scale data collection exercise. There then followed a ratings phase, in which the most frequently named celebrities were rated for AoA, familiarity, and facial distinctiveness. It is to the generation phase that this paper now turns.

Phase 1: Name Generation.

For a database to have utility as a research tool, it is salient that the items contained in it should be well known to the target population from which participants will be drawn. Rizzo, Venneri, and Papagno (2002) have collected normative data on 50 famous people as the basis of a neurological test, collecting data on semantic information. However, they did not collect

ratings from their participants, nor did they ask their participants to generate the celebrities themselves. With this consideration in mind, the first phase in the construction of the database involved finding out which famous people were known by a reasonably high proportion of the target population, namely British adults aged 40 years and over. A large group of participants were requested to write down the names of famous people whose faces they believed they would recognise. It was emphasised that the generation of names should be done on the basis of memory alone and without recourse to any reference book. Decades from 1920 to 2003 and categories of fame (e.g., politics, film, and sport) were printed in the booklet. The categories were chosen by the authors to encompass as many fields of fame pertinent to the participants' population as possible. These were intended to be *aides mémoire*, not enclosed categories, to help participants structure their recall, whilst the dating of stimuli from the 1920s onwards should mean that photographic images are available for any person so generated. The number of times a name was generated was recorded as a frequency count. From this, the famous people best known to the participants (or, at the very least, those that sprang most easily to mind from each of the given categories) were determined and entered as stimuli in the subsequent stage of the investigation.

Method

Participants

All the participants were UK citizens, with English as their first language, and were aged over 40 years. The majority were recruited from

advertisements placed in a publication local to the Canterbury (UK) area and were paid £1 for taking part. Other participants were recruited via posters placed around the University of Kent campus and features on the research that appeared in the University staff newsletter and on local radio. Participants were also recruited via the *Saga* publication (a national magazine for the over-50s) and *Sesame* (the Open University newspaper). Some 400 participants were recruited from these sources, with 182 respondents completing and returning the name generation sheet. The age of the participants ranged from 40 to 91 years, with a mean age of 61.37 years ($SD = 11.76$, $SEM = 0.91$). Of those participants who followed the instructions to write down both their gender and age, there were 105 female (mean age = 59.78, $SD = 11.85$, $SEM = 1.16$) and 50 male respondents (mean age = 62.94, $SD = 12.08$, $SEM = 1.71$).

Materials

A 16-page name generation booklet, an instruction sheet, and a prepaid envelope to return the completed form, were posted to each participant.

Design

The name generation sheet was split into occupations (or semantic categories) to aid recall and the names of these categories are presented in Table 1. Each category was subdivided into decades dated from '1920-1930' up to '1990- the present day'.

TABLE 1 ABOUT HERE.

Procedure

The participants were instructed to think of people in each category and then to try to estimate when *they* first became aware of that person. The participants were advised that the interest of the study lay in their personal judgement, not an historical entry of the famous person's "dates". It was emphasised that the decades were presented only as another cue to recall and that they need not worry over the accuracy of their estimations as it was the names that were most important. The participants were requested to note down on the back of the sheet any other names that came to mind but which did not readily fit into the categories provided. All the names so generated were entered into a spreadsheet. A frequency count accompanied each of the names to indicate how many participants had written down that particular famous person. See the Appendix for these names and the number of times they were generated.

Results & Discussion

There were wide differences between participants in the number of names generated. Some participants named just a few, extremely salient famous people, whilst others named more than a hundred people each. Roughly 4200 names were generated overall. Time constraints and the need to retain the goodwill of the participant group meant that it was necessary to impose a limit on the number of celebrities for which ratings would be collected. It was decided that the names of famous people generated ten or more times would be subjected to the more detailed data collection. The

Appendix shows all the famous people named by ten or more participants in the experiment⁴, giving a total of 696 celebrities. Where a famous person was placed in more than one category, the most frequently chosen category is reported. Other than recording the names and their frequency count, no further data collection was carried out on the remaining famous people named less than ten times.

Phase 2: Ratings

As discussed previously, it is important to control for a number of variables known to influence processing speed when designing experiments. Tasks involving the collection of responses to names or faces of celebrities are no exception. Ratings on three scales were collected for all the celebrities named ten or more times, using Moore's (1998) method. Each famous person was rated for their AoA, familiarity, and facial distinctiveness by at least twenty participants⁵. These variables were selected due to their strong influence on face processing tasks.

Method

Participants

All the participants were aged over 40 years, many of whom had taken part in the name generation study. One hundred and seventy five question sheets were posted to the participants. Only 6 of the returned sheets were omitted from coding due to comprehension difficulties, leaving the data from 149 participants to be coded. In total, 100 females and 48 males⁶ returned the sheets (mean age = 61.76, $SD = 12.56$, $SEM = 1.03$, range = 40 to 88 years).

The participants were divided semi-randomly across seven groups, with each group receiving a sheet with a different set of celebrity names. The composition of each group is summarised in Table 2. A one-way ANOVA found there to be no significant difference between the groups in their mean age, $F(6,142) = 1.173, p = .324$.

TABLE 2 ABOUT HERE.

Materials

A score sheet with instructions and a prepaid envelope were posted to each of the participants.

Design

The score sheets were created using the frequency count data obtained from Phase 1. Those named ten or more times were included in the ratings sheets. The names were split into groups of approximately 100, to prevent fatigue or boredom with the task. There were seven different versions of the sheet (comprising different names), with 25 participants receiving one of the seven sheets. The participants were allotted different versions of the sheet in such a way as to ensure that the mean age of each of the seven groups was kept roughly equal. The participants were requested to rate each of the names for their AoA, familiarity, and facial distinctiveness by putting a line through the number corresponding to their chosen response. It was emphasised that their decisions should be made on facial features alone and that other physical characteristics, such as height and hair colour, should be discounted.

Seven-point scales were employed on the familiarity and distinctiveness variables, in accordance with Moore (1998). However, to encompass the atypically wider age range than used in most previous investigations, a 10-point scale was employed for the ratings of AoA.

Familiarity: The participants were asked to estimate how many times in their lifetime they had heard, seen, read about, or otherwise been reminded of each of the celebrities (from 1 = unknown to 7 = encountered extremely often). It was stressed that this should be an estimate of how many times, *prior to the experiment*, each celebrity had been encountered in the participants' *personal* daily life, on television, or in films, newspapers, magazines, or posters, and so on.

Distinctiveness: The participants were asked to imagine how easy each celebrity would be to recognise from just their facial features (Valentine & Bruce, 1986). The scale ranged from 1 = a 'typical', hard to spot face, to 7 = a distinctive, easy to spot face. This was done on the basis of the image each participant had of the famous person in his or her mind's eye, rather than from a particular photograph.

AoA: The participants were requested to indicate how old they were when they first became aware of each famous person. The AoA rating scale ran from 1 = less than 5 years old, 2 = less than 10, 3 = less than 15, 4 = less than 25, and so on up to 10 = less than 85 years old.

Procedure

The participants were asked to rate the names of famous people for their AoA, familiarity, and facial distinctiveness by marking the appropriate point on each of the scales.

A detachable, large print, rating key was provided in the mail-out, to be used by participants as they made their ratings. The returned sheets were coded and means were calculated for each of the three factors.

Additional Ratings

Additional ratings were taken as post hoc controls on a number of experiments. Those tasks were also performed by the over-40s, following the same method as described above.

Results & Discussion

The on-line database shows the breakdown of the ratings data into that provided by participants in their 40s, 50s, 60s, 70s, and 80s as well as overall mean ratings scores for each celebrity, collapsed across all age groups. The ratings scores were summed from the initial and additional ratings. A mean score was then calculated by dividing the summed totals by the total number of participants who provided ratings. The resulting mean scores are presented in the database. Descriptive analyses for the normative data are shown in Table 3.

TABLE 3 ABOUT HERE.

Bivariate (Pearson) correlations were run between surname frequency (N= 294), number of times generated, total number of phonemes, and overall

mean ratings of familiarity, distinctiveness, and AoA ($N = 696$ in all cases). Table 4 shows a comparison of variables known to influence face processing speed with correlational studies run on objects. The correlational data will be discussed in relation to object processing. There were a number of significant correlations between the dependent variables. The number of times a name was generated correlated significantly with number of phonemes ($r = .102, p < .01$), familiarity ($r = .317, p < .001$), and distinctiveness ($r = .302, p < .001$). There were also significant negative correlations between the number of times generated and AoA ($r = -.144, p < .001$) and surname frequency ($r = -.131, p < .05$). It would appear from this that people are more likely to spontaneously remember famous people learned early in life than those acquired later. More unusual names resulted in more participants generating those celebrities. There was also a significant correlation between familiarity and distinctiveness ($r = .925, p < .001$). However, the relationship between the two variables was positive rather than the negative correlation that would be predicted from studies of object processing. Ratings of distinctiveness and familiarity have been found to correlate highly in previous face processing studies (e.g., Moore, 1998). The negative correlation between AoA and familiarity fell just short of significance ($r = -.067, p = .075$). Early-acquired objects are also rated more familiar than later-acquired items. There was no significant correlation between AoA and distinctiveness ($r = -.052, p = .173$). The evidence from object processing is equivocal concerning this relationship, with some studies

reporting a significant positive correlation between the two variables, whilst others have found no such relationship.

TABLE 4 ABOUT HERE.

General Discussion

The data reported in this paper will allow researchers to select stimuli that are highly familiar to a large proportion of adults from the general population. This will facilitate the ease with which the listed stimuli can be matched on a number of important attributes. The database provides ratings of AoA, familiarity, facial distinctiveness, surname frequency, and number of phonemes. The transience of fame means that some of the famous people recorded in this paper may not be remembered in years to come (e.g., Rizzo et al., 2002). The individual frequency of encounter (or familiarity) for other stimuli may also change over time. For example, the death of Pope John Paul II (April 2005) will have increased his rated familiarity from the scores provided in the database, taken prior to his death. However, such changes are actually beneficial to researchers specifically interested in frequency of encounter, since they allow 'before' and 'after' comparisons to be made.

The separate reporting of ratings by participants of different ages, in addition to the overall mean rating, will bestow greater longevity on the database as a useful research tool. This is particularly the case for studies of AoA for people. Furthermore, the fact that participants have been involved in generating the stimuli, rather than just being given a list of names to rate, should ensure that the database constitutes a representative and well-known

sample of famous people from different decades. Finally, this database provides an accurate, a priori list of empirical measures on a number of attributes. Whilst many of these, such as phoneme length, remain the same, others, such as familiarity, may be more dynamic. It is therefore suggested that researchers using this tool would be advised, where possible, to collect appropriate ratings post hoc, in order to control for individual differences and stimulus validation.

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Table 1

Semantic categories used to aid name generation in Phase 1. The categories are also numbered for use in conjunction with the database.

Semantic Category	
1. Adventurers/Explorers/Pioneers	16. Prime Ministers
2. Authors/Artists/Poets	17. Racing Drivers
3. Athletes	18. [UK] Royal Family
4. Chancellors of Germany	19. Rugby Players
5. Children's TV Presenters	20. Scientists
6. Comedians/Light Entertainers	21. Singers/Musicians
7. Cricket Players	22. Snooker/Billiards Players
8. Criminals	23. Speakers of the House of Commons
9. Film Stars	24. Tennis Players
10. Footballers	25. Tycoons/Millionaires
11. French Presidents	26. US Presidents
12. Ice Skaters	27. Union Leaders
13. Media Personalities	28. Victims
14. News Presenters	29. World Leaders
15. Politicians	30. World Military

Table 2

Showing the mean group ages providing an a priori rating.

Form	<i>N</i>	Gender	Mean Age	<i>SD</i>	<i>SEM</i>
A	22	12:10	59.09	12.41	2.65
B	20	12:8	61.20	12.01	2.69
C	20	17:3	62.25	10.86	2.43
D	21	15:6	62.76	12.50	2.73
E	23	14:8 ⁷	61.78	13.82	2.88
F	20	13:7	57.80	11.13	2.49
G	23	17:6	66.87	14.07	2.93

Key: Gender = Gender ratio (females: males)

Table 3

Overall descriptive analyses for the normative data appearing in the database.

	Mean	SD	Range
Surname Frequency	137.06	203.43	0.00 – 1152.00
Number Of Times Generated	34.11	30.32	6-171
Total Number Of Phonemes	9.88	2.26	4-20
40 Year Old Familiarity	3.78	1.34	1.00-6.40
40 Year Old Distinctiveness	3.55	1.36	1.00-6.00
40 Year Old AoA	3.71	1.18	1.00-6.33
50 Year Old Familiarity	3.89	1.08	1.00-6.00
50 Year Old Distinctiveness	3.67	1.20	1.00-5.88
50 Year Old AoA	4.55	1.36	1.38-8.00
60 Year Old Familiarity	4.16	1.09	1.00-7.00
60 Year Old Distinctiveness	3.87	1.22	1.00-6.00
60 Year Old AoA	5.21	1.59	1.50-8.00
70 Year Old Familiarity	3.69	1.13	1.00-6.00
70 Year Old Distinctiveness	3.47	1.30	1.00-6.00
70 Year Old AoA	6.07	1.73	1.50-9.25
80 Year Old Familiarity	4.08	1.37	1.00-6.00
80 Year Old Distinctiveness	3.69	1.33	1.00-6.00
80 Year Old AoA	6.52	1.94	1.00-10.00
Overall Familiarity	3.92	0.84	1.00-6.00
Overall Distinctiveness	3.67	1.00	1.26-5.88
Overall AoA	5.03	1.39	2.05-7.88

Table 4

Comparison of correlations derived from the celebrity stimuli with object processing studies. Where significant correlations emerged, this is denoted with either a + (a positive relationship) or a – (a negative relationship). P values are also presented the face data reported in this paper. In the case of the object processing studies, please read visual complexity for distinctiveness. Word length includes measures of phonemes, letters, and syllables.

	Sig.	A	BBAB	B	BME	H&E	S&V	S&Y
AoA- Distinctiveness	.173 -			+			+	
AoA- Frequency	.365 +	-	-	-	-		-	-
AoA-Familiarity	.075 -	-		-	-	-	-	-
AoA-Word Length	.859 -	+	+	+	+	+		+
Distinctiveness- Familiarity	.925 +	-		-	-	-	-	-
Distinctiveness-Frequency	.108 -				-	-	-	
Distinctiveness-Word Length	.680 -				+			
Familiarity-Frequency	.141 -	+	+		+	+	+	+
Familiarity-Word Length	.529 -				-	-		
Frequency-Word Length	.594 -	-	-	-	-	-		-

Key: A = Alario et al. (2004); B = Bonin et al. 2002); BME = Barry, Morrison, & Ellis (1997); BBAB = Bates, Burani, D'Amico, & Barca (2001); H&E = Hodgson & Ellis (1998); S&V = Snodgrass & Vanderwart (1980); S&Y = Snodgrass & Yuditsky (1996).

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Footnotes

¹ Familiarity is assumed to be equivalent to cumulative frequency because it comprises measures of the experimental participants estimates of how frequently an object or person has been encountered in their personal environment. For example, a fruiterer would estimate 'apple' as more frequently encountered than would a furniture maker. Therefore, in this paper, familiarity is more closely related to conceptual familiarity than to lexical subjective frequency.

² But see Alario et al.'s (2004) review of object naming.

³ Since this is a list of norms intended primarily for use by British English speakers, the phoneme counts for foreign names such as 'Brigitte Bardot' reflect an anglicised pronunciation rather than the strict native pronunciation. There is some debate in the literature as to whether the sound at the beginning of 'church' and that at the beginning of 'jean' are best represented by one or two phonemes (see Ladefoged, 1993). Since the second component of each cluster only occurs in that setting and not in other clusters, this paper will treat them as a single phoneme. Finally, whilst it is commonly accepted that diphthongs are single phonemes, there is some debate concerning triphthongs. This paper will treat triphthongs as two phonemes composed of an initial diphthong followed by a schwa.

⁴ Ronnie and Reggie Kray were included in the database because the 'Kray Twins' were generated by a total of 78 participants (although the individual brothers were only generated by name 6 times each).

⁵ This number reflects the number of *potential* ratings, since some famous people may have been known to only a sample of these participants.

⁶ One participant's gender was omitted.

⁷ See footnote 6.

Footnotes to Appendix

¹ Syllabic consonants exist where a vowel + consonant sequence is replaced by the consonant alone, whilst retaining syllabicity. For example in the surname 'Johnson' the final /•n/ sound can be pronounced /n/. However, as with this example, for most of the sequences where this is possible, the exclusion of the schwa is optional (see Jones, 1997, for a full discussion of optional and obligatory inclusion and omission of the schwa). Dictionary and textbook transcriptions of individual words can vary as indeed individual speakers may also vary. In these counts, the schwa is included but its optional nature is denoted by this footnote.

² In 'Amundsen', 'Costner', 'Handley', 'Montgomery', 'Westminster' and 'Windsor', the first /t/ or /d/ is optional and has been included in the phoneme count.

³ In 'Attenborough', 'Mandelson' and 'Nicholson', there are 2 optional schwas and these have both been included in the counts.

⁴ In ‘Branson’, ‘Johnson’, ‘Laurence’, ‘Lawrence’, ‘Mansell’, ‘Prince’, ‘Princess’, ‘Westminster’, and ‘Winston’, there is an optional intrusive /t/ between the /n/ and /s/ sounds. This has been omitted from the counts here.

⁵ ‘Brezhnev’ is commonly pronounced either /breʒ njef/ or /breʒ nef/ and thus has either 8 or 7 phonemes. The first variant has been used for the phoneme counts here.

⁶ In the specific examples of ‘Barbara’, ‘Deborah’, ‘General’ and ‘Margaret’ it is more usual for speakers to omit the middle schwa (e.g., to say /ba:br•/ than /ba:b•r•/) and this is reflected in the count.

⁷ In the examples of ‘Compton’, ‘Simpson’ and ‘Thompson’ the middle /p/ is optional and has been included in the counts here.

⁸ ‘Juan’ is commonly pronounced either /hwa:n/ or /wa:n/ and thus has either 4 or 3 phonemes. The first variant has been used for the phoneme counts here.