Accessing stored information about familiar people

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Summary. Two experiments investigating access to occupations and names of familiar people are reported, in which the response requirements of occupation and name categorization tasks were made equivalent. In Experiment 1 matching tasks were used, in which subjects were required to determine whether simultaneously presented pairs of faces, surnames, or full names were those of people with the same or different occupations (politician or nonpolitician) or with same or different first names (Michael or David). Experiment 2 required binary classification of individual faces or surnames in terms of the bearer's occupation (politician or nonpolitician) or first name (Michael or David). In both experiments responses to faces were faster in tasks involving access to occupations than in tasks involving access to first names, whereas for surnames there was no difference in reaction times between occupations and first names in matching or classification tasks. These findings are consistent with the idea that identity-specific semantic codes and name codes are accessed sequentially from faces, but in parallel from written names.

Introduction

Other people's faces reveal to us a wealth of social information. We can use them to determine age, sex, and moods and feelings. These can be inferred from the face's structure, and from the patterns of movement of the facial features themselves, and hence are available even to unfamiliar faces (Bruce & Young, 1986; Shepherd, 1988). For unfamiliar faces, though, appearance is not sufficient to provide veridical access to information concerning the person's occupation (a given unfamiliar face might belong to a lawyer, a stockbroker, a politician, an actor, etc.). Such identity-specific semantic information is only available to familiar faces. Bruce and Young (1986) thus contrasted identity-specific semantic codes with the visually derived semantic codes (age, sex, etc.) that can be derived from appearance alone. It is only by recognizing the faces of people we know that we are able to access stored identity-specific semantic information and names (Young, McWeeny, Ellis, & Hay, 1986b; Young, McWeeny, Hay, & Ellis, 1986c).

Names are much more difficult to access from familiar faces than other types of identity-specific semantic information, such as occupations. Everyday errors are common in which occupations, but not names, can be remembered (Yarmey, 1973; Reason & Lucas, 1984; Young, Hay, & Ellis, 1985; Cohen & Faulkner, 1986), yet we never seem to access a seen person's name without also being able to remember appropriate semantic information (Young et al., 1985). Thus, whilst errors of the form 'that's what's-his-name who used to be in the cowboy films' are common, we never find ourselves thinking 'his name's John Wayne, but who is he?' Names are, indeed, much more difficult to learn than occupations (Cohen & Faulkner, 1986; McWeeny, Young, Hay, & Ellis, 1987), even when differences in the frequencies with which they are encountered have been eliminated, and even when subjects are effectively learning the same items (e.g., it is harder to learn Baker as a surname than as an occupation). Moreover, in interference tasks irrelevant printed names affect face-naming latencies, whereas irrelevant names do not affect response latencies for categorizing faces into different occupations (Young, Ellis, Flude, McWeeny, & Hay, 1986a). Response latencies for face naming are, in general, considerably longer than latencies for semantic categorization by occupation (Young et al., 1986b).

Bruce and Young (1986) and Ellis, Young, and Hay (1987) used such findings to develop the view that names can be accessed from faces only via intervening identity-specific semantic codes. Thus they hypothesised a sequential access to stored information from familiar faces in which items such as the person's occupation will always be available before the name. In contrast, Bruce and Young (1986) and Ellis et al. (1987) maintained that for written or spoken names identity-specific semantic codes and name-output codes can be accessed in parallel.

This is a strong conclusion, and it might be objected that the findings on which it is based, which often involve studies of subjects' responses to famous faces, lack generality because our experience of famous faces is limited in certain ways. We may, for instance, need to name famous faces less frequently than we need to use the names of personal acquaintances. Thus it is important to know that such an objection would be incorrect. Sergent (1986) for instance, found that graduate students of the Psychology Department at McGill University were faster at classifying the faces of members of staff as being professors or non-professors (technicians, secretaries, etc.) than they were at naming these people. She obtained this result despite the fact that all her subjects had known these individuals per-
The aim of the present study was to investigate access to identity-specific semantic information and names from faces in tasks with consistent response requirements, and to compare the processing of seen faces to the processing of written names in such tasks. Experiment 1 used matching tasks, whereas Experiment 2 made use of binary-classification tasks. Both experiments were primarily addressed to the same issues, only the paradigms used to achieve different latencies for face naming than for semantic categorization of faces might reflect these differing response requirements.

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Experiment 1

Subjects. There were 24 male and 24 female subjects. All were staff or students of Lancaster University. All had normal or corrected-to-normal vision. All were paid for participating. Eight males and eight females were allocated at random to each of the three experimental conditions.

Stimuli and procedure. Four politicians and four nonpoliticians, well known in Britain, were chosen for use as stimulus people. Two members of each category were called David (politicians David Owen and David Steel; nonpoliticians David Niven and David Soul) and two members of each category were called Michael (politicians Michael Foot and Michael Heseltine; nonpoliticians Michael Aspel and Michael Caine). They were selected so that the members of each category (politicians or nonpoliticians, and Davids or Michaels) did not differ systematically in age or in general appearance.

These eight people were used to make three types of stimuli; their faces (black-and-white slides in which the clothing and background were removed by masking with a circular template), their surnames (handwritten by different people and then photographed onto black-and-white slides) or their full names (handwritten by different people and then photographed onto black-and-white slides). These stimulus slides were then back-projected to subjects to create matching tasks. Three experimental conditions were run in which subjects matched faces, surnames, or full names. Each subject was run under one of these conditions.

For the matching tasks, pairs of different faces, surnames, or full names were simultaneously presented, one above the other. Each stimulus subtended a horizontal visual angle of approximately 6°, and the upper and lower stimuli were also separated from each other by approximately 6°. Two blocks of trials were run for each subject, and given in an order that was counterbalanced across subjects. In one block of trials subjects were asked to carry out an occupation-matching task; this involved determining as quickly and accurately as possible whether or not the two stimuli were people with the same occupation (both politicians or both nonpoliticians) or people with different occupations (one politician and one nonpolitician). In the other block of trials subjects were asked to carry out a first-name-matching task; this involved determining as quickly and accurately as possible whether or not the two stimuli were people with the same first name (both David, or both Michael) or people with different first names (one David and one Michael). In both blocks of trials manual responses were made by pressing one of two horizontally located buttons, 6 cm apart, with one button for 'same' responses and the other button for 'different' responses (use of each button for 'same' or 'different' responses was counterbalanced across subjects). Response latencies were timed from stimulus onset.

At the start of the experiment each subject was shown faces, surnames, or full names (as appropriate) of all the eight stimulus people, to check that they were recognized and that their names and occupations were known. Practice in one of the matching tasks was then given, followed by 64 experimental trials. In these 64 trials each stimulus person was used equally often in the upper and lower slide positions in 32 'same' pairs and 32 'different' pairs. In the occupation-matching task half the 'same' and half the 'different' pairs were people with the same first names, and half were people with different first names; similarly, half the same and half the different pairs in the first-name-matching task were people with the same and with different occupations. Subjects who had completed the occupation-matching task then did practice and a further 64 experimental trials of first-name matching, and vice versa.

The essential features of Experiment 1, then, are that stimulus people were presented to subjects in the form of faces, surnames, or full names. On each trial two different people were simultaneously presented, and subjects' manual reaction times were recorded for 64 trials in which they matched these different people according to whether they had the same or different occupations, and 64 trials in which they matched the people according to whether they had same or different first names.

Results

Error rates were less than 4% in all cells of the design, and will not be considered further.