

Nominal kinship cues facilitate altruism

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We investigated whether names in common promote altruistic behaviour, predicting that this would be especially so for relatively uncommon names, for surnames (which are better kinship cues than first names), and among women (who, although less willing than men to help strangers, according to prior research, are also the primary 'kin keepers'). We solicited help from 2960 email addressees, with the request ostensibly coming from a same-sex person sharing both, either, or neither of the addressee's first and last names. As anticipated, addressees were most likely to respond helpfully when senders shared both their names (12.3%) and least likely when they shared neither (2.0%), and this was especially true for relatively uncommon names. A shared surname was more effective than a shared first name only if it was relatively uncommon. Women were substantially more likely to reply than men. These results indicate that names elicit altruism because they function as salient cues of kinship.

Keywords: kin discrimination; kin recognition; altruism; *Homo sapiens*

1. INTRODUCTION

What's in a name? Analysing surnames to estimate gene flow, inbreeding coefficients, dispersal patterns, population structure, and consanguineal distance in contemporary and historical name registries, has a long and distinguished history (e.g. Roguljić *et al.* 1997; Caravello & Tasso 1999; Lasker 1999; Rodríguez-Larralde *et al.* 2000; Barraí *et al.* 2001; Koertvelyessy *et al.* 2001). Surnames represent the continuity of kinship and individuals' social identity, status, entitlements and obligations insofar as they are defined by descent (e.g. Eyre 1992; Wang & Micklin 1996). The burgeoning popularity of searching for the surnames and identity of putative ancestors attests to the emotional appeal of knowing one's ancestors (Shoumatoff 1985).

In a long-lived social species with overlapping generations, such as *Homo sapiens*, kin are favoured over non-relatives in a multitude of ways (e.g. Burnstein *et al.* 1994; Daly & Wilson 1998). The inclusive fitness benefits (Hamilton 1964) of helping relatives depend on reliable cues of genetic relatedness (e.g. Hatchwell *et al.* 2001). However, it is not essential that the cue should match a recognition template of 'self', as long as the decision rule favouring close relatives is based on a cue that reliably identifies kinship, such as nursing from the same set of teats. Indeed, the cue can be arbitrary provided that it is statistically associated with relatedness. Family surname may be one kind of arbitrary cue of kinship. The reliability of a surname as an identifier of kin depends on several additional factors including its rarity, the fidelity of inter-generational name transmission, the dispersal pattern of ancestors, and the incidence of nevertheless misattributed paternity. In the absence of such qualifying information, people may respond to nominal kinship cues as if they are kin markers, and feel more inclined to help people with the same surname than those with a different surname.

We conducted an experimental test of whether people would give assistance to a complete stranger with the same

name. The name of the solicitor of assistance varied with respect to whether the surname and the personal name were the same or different from that of the target person.

Personal names may demarcate the sex of the person, birth order, generation and various social attributes. There are two reasons for thinking that a personal name may also affect people's inclination to give assistance. First, an infant is often named after a member of the family, such as a parent or grandparent (Breen 1982; Daly & Wilson 1982; Tebbenhoff 1984; Regalski & Gaulin 1993; Gerhards & Hackenbroch 2000), and so first names could be additional cues of kinship when the surnames are held in common. The emotional power of namesaking is evident in father-child relationships: unmarried fathers had more contact with their sons and contributed more economic support if their sons were named after them than if they were not (Furstenberg Jr & Talvitie 1980). In one study in the United States, naming adoptive children after a close relative of the adoptive parents was more common than familial namesaking of one's genetic children (Johnson *et al.* 1991). One interpretation of this result is that the adoptive parents were responding to their intuitions about the emotional power of family namesaking in evoking nepotistic feelings. However, a shared first name is unlikely to be a cue of kinship in the absence of a common surname or other consanguinity cue.

A second reason why personal names and surnames may affect willingness to help a stranger derives from the fact that almost any arbitrary marker shared in common is effective in facilitating favouritism toward in-group members over out-group members—a phenomenon known as the minimal group effect (e.g. Perreault & Bourhis 1999). By this reasoning, a shared name may be effective in eliciting in-group favouritism, like wearing red or blue T-shirts or assignment of arbitrary team names such as Reds or Blues, whether it is the first name or the surname. An alternative selection-minded hypothesis is that a shared surname would enhance in-group favouritism more than a shared personal name alone, because surnames denote the possibility of common ancestry better than personal names.

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In this paper, we describe our findings that nominal kinship cues facilitate altruism towards strangers. Email queries concerning the identity of local mascots of team sports were sent to persons with email addresses in the public domain. The addressee and sender's names varied with respect to whether they shared both personal and surname, neither, or only one name. On the basis of the logic that names serve as kinship cues, we proposed that the highest percentage of persons answering the email request would share both first and last names with the person requesting assistance. However, a shared surname would also be effective, and perhaps especially so for males, in a society with patrilineal naming traditions, as women lose the patronym when they marry. If a name is merely an arbitrary marker facilitating in-group favouritism then a shared first name should be as effective as a shared last name in eliciting assistance. We also proposed that less prevalent names would be more effective than prevalent names because people with common names have additional information that a shared name is unlikely to be a reliable cue of kinship.

2. MATERIAL AND METHODS

The name of the email addressee and the email sender were varied in a $2 \times 2 \times 2 \times 2$ experimental design in which the surnames and first names of addressee and sender were either the same or different, the names were either relatively prevalent in the US name census or less prevalent but not rare, and the first names identified either a male or female person. The prevalence of first and last name was matched (i.e. both prevalent or both less prevalent), and the gender of the name of sender and addressee was concordant.

A total of 6400 emails were sent from 223 email accounts on www.hotmail.com with a final sample of 2961 valid addresses; the remaining emails were returned as non-sendable. Only North American addresses were used and no other information about an account holder was known. The soliciting email account was closed in two weeks. All respondents were politely thanked for their assistance without full disclosure of the purpose of the study. A university ethics committee for non-medical research with humans approved this study.

The United States publishes the frequency of names in the census population (www.census.gov/genalogy/names). Twenty-six surnames combined with 21 male first names and 22 female first names constituted the list of addressees. Names connoting a specific ethnic minority were avoided in order to minimize confounding the effects of nominal kinship cues with cultural background (Waters 1989). The prevalent surnames included Brown, Jones, Smith, Williams and Wilson, whereas the less prevalent surnames included Andrews, Banks, Johnston, Morrison and Williamson. Prevalent first names included Kevin, Richard, Gary, Jessica, Michelle and Nancy. Less common first names included Claire, Kay, Tracey, Dwayne, Hugh and Mitchell. First names and surnames were both in the same prevalence category whether the same or different from that of the nominal email sender: common or less common. The prevalent last names ranked in the top 14 out of 88 217 surnames (constituting 0.279–1.006% of the census population), whereas the common first names ranked in the top 35 out of the 4275 female names and the 1219 male names (0.468–1.703% of the population). The ranks of the uncommon last names ranged between the 124th and the 262nd position (a prevalence rate of

0.073–0.041%) and the first names between the 217th and the 302nd position (0.078–0.059%). Email addresses for full names of the selected combinations were found through Yahoo People Search (<http://email.people.yahoo.com/py/psadvsearch.py?firstname=&lastname=>), and only full names with at least five addresses were used so that multiple emails could be sent from each email account. The ostensible gender of the addressee and sender's names were always concordant.

A standard message requesting assistance was sent to each email addressee. Here is the message template:

Hi :-)

My name is [sender first name]. I am a student doing a research project on sports team mascots. I was wondering whether you could help me with part of my project:

I would like to find out what your city's sports team(s) mascot is (are) and the date of its (their) inception. Any other information you know about the mascot(s) off hand would also be helpful.

Thank you so much for your time. I would greatly appreciate your help. I hope to hear from you soon!

Sincerely,

[sender full name] :-)

A reply to this message within two weeks was the index of altruism; no reply was deemed a lack of assistance. The percentage of replies was computed for each experimental condition. We also analysed the latency in days to reply, word count of the reply, and relative frequency of replies that were friendly versus hostile, whether the requested information was provided, whether future personal contact was requested, and whether the altruist was excited about the fact that the email requester had the same name.

The counts of email replies, non-responses and counts of content categories were submitted to log-linear analyses (Norman & Streiner 2000). Latency, in days to reply to the request, and word count were subjected to analyses of variance.

3. RESULTS

(a) *Email altruism*

Table 1 portrays the percentage of replies cross-tabulated by name prevalence, gender of name, and what part of the name the email sender and email altruist shared in common. The overall percentage of email addressees who replied to the request was 5.67%. When the sender and addressee shared both names the reply rate was 12.29%, and if neither name was the same the reply rate was 1.96%. For the condition in which only one name was shared, the response rate for shared surnames was 5.75% versus 3.71% for shared first names. The four reply rates were non-randomly distributed ($L^2 = 186.65$, d.f. = 15, $p < 0.001$). The contrast of same name versus different name was significant ($L^2 = 42.1$ d.f. = 1, $p < 0.001$) and both names in common was significantly different from one shared name ($L^2 = 39.4$, d.f. = 1, $p < 0.001$). The contrast of last name versus first name, when only one name was shared by sender and addressee, was not significantly different but was in the proposed direction ($L^2 = 3.11$, d.f. = 1, $p = 0.08$). In this log-linear analysis the counts are pooled for the two prevalence conditions and the two gender conditions.

Table 1. Percentage of replies (*n* emails) according to the prevalence of the name in the population-at-large (common versus uncommon), the gender of the name, and whether the email sender and addressee shared both names, only the surname, only the first name, or neither name.

		prevalent names		less prevalent names	
		2.5%		8.7%	
		female	male	female	male
name shared?		3.5%	1.4%	12.0%	1.9%
both	12.3%	7.2% (180)	3.8% (157)	26.6% (203)	8.3% (168)
last	5.8%	1.3% (159)	1.9% (160)	12.5% (184)	6.3% (158)
first	3.7%	3.5% (174)	0.0% (166)	8.4% (178)	2.6% (156)
neither	2.0%	2.3% (221)	0.5% (218)	3.3% (275)	1.5% (204)

As we had anticipated, the prevalence of names in the population affected the reply rate: 2.5% for prevalent names and 8.7% for less prevalent names (table 1). The log-linear analysis further partitions the counts according to the prevalence category within each name condition. Less common names elicited significantly more replies within the shared full name condition ($L^2 = 28.0$, d.f. = 1,12, $p = 0.001$), within the shared surname condition ($L^2 = 22.3$, d.f. = 1,12, $p = 0.001$) and within the shared first name condition ($L^2 = 7.6$ d.f. = 1,12, $p = 0.01$), but not when both names were different for the sender and the addressee. Less common names are likely to be a more reliable cue of kinship and therefore their greater effectiveness is not surprising. A comparison of the reply rate for surname versus first name within the less prevalent category is a better test of the selection-minded hypothesis that a shared surname would enhance the reply rate more than a shared personal name. Prevalent surnames in North America are unlikely to be much better cues of common ancestry than personal names and, indeed, there was no significant difference in reply rates for personal versus last name. However, within the less prevalent name category, 9.6% of addressees replied if they shared only the last name versus 5.7% if they shared only the first name ($\chi^2 = 3.8$, d.f. = 1, $p = 0.05$).

The reply rate was significantly higher for female names, 8.1%, than for male names, 3.0%. The sex difference was greatest when both names were shared and the names were uncommon: 26.6% versus 8.3% for female and male names, respectively ($L^2 = 25.5$, d.f. = 1,12; $p < 0.001$). The sex difference with the first name only condition was significant for both common and uncommon names ($L^2 = 4.0$ and 4.1, respectively, d.f. = 1,12, $p < 0.05$). Figure 1a portrays the reply rates by category of shared name for male and female less prevalent names, whereas figure 1b portrays the same information for prevalent names.

(b) Emotional content of email replies

The overall percentage of 'friendly' replies was 97.62%. There were two unfriendly replies among the 18 replies in which sender and addressee names were different, and 1 out of 87 in which both names were shared, 1 out of 38 with a shared surname, and none in which the first name was shared. Hence, replying to the request as an index of altruism is virtually synonymous with having a positive attitude towards the email sender. Indeed, several replies conveyed excitement over receiving an email from someone with the same name. When both names were shared,

57.5% of the 87 replies (60% of the uncommon names versus 47% of the common names) conveyed some kind of excitement, as reflected by statements such as 'Hi my name is [both names the same] too!! I just thought that was awesome. Anyway, our mascot is the Tiger'. This contrasts with the relative rarity of similar kinds of enthusiastic replies when the surname was shared (5.3%) and none in the case of a shared first name or where neither name was shared.

Those with a shared full name similarly requested future personal contact; for example, 'This is kinda weird because you have the same exact name as me [both names same]. I live in Tucson AZ and our college mascot is a wildcat. As far as the date of inception I am not sure. But I am interested in where you live so mail me back and tell me cuz this is a trip...thought I accidentally sent myself an email'. Such messages occurred predominantly when sender and addressee shared both names (31.3% of less prevalent names versus 15.8% of prevalent names). There were no such requests when neither name was shared, nor when first name was shared, and only two such requests when there was an uncommon shared surname.

The average (\pm s.d.) number of days after the email was sent when people replied was 1.54 ± 0.68 days for female names and 1.88 ± 0.84 for male names ($F = 4.3$, d.f. = 1,153, $p = 0.039$); neither shared name category nor prevalence category were significantly associated with latency to reply. The average (\pm s.d.) word count was 56.3 ± 64.6 words per text of the reply, and word count was not significantly affected by any of the predictor variables. Ninety per cent of those who replied provided the requested information on the mascots.

4. DISCUSSION

Shared names are effective in eliciting a minor act of altruism. When the personal name and surname of the email sender were identical to those of the addressee, there were significantly more email replies than when neither name was in common or only one name was in common. Considering just one name in common, the surname was not significantly different from the personal name when all the data were combined. However, if we only consider the less prevalent names, which were more effective in eliciting assistance, then the surname was statistically different from the personal name. Their differential potency in facilitating altruism was evident overall when the effect of one name is compared with the baseline condition of

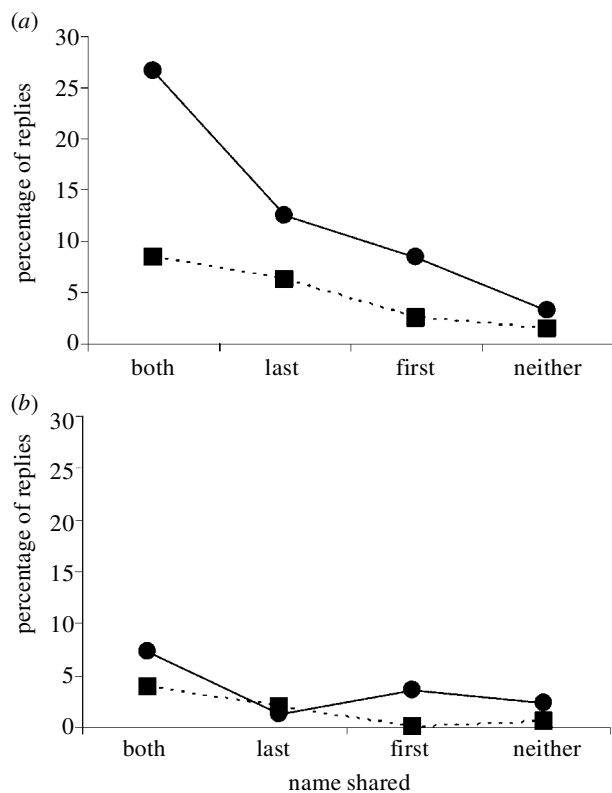


Figure 1. Percentage of email replies according to whether the addressee and sender shared both first and last names, last name only, first name only, or neither name, in relation to gender of first name (circle, female; square, male) and prevalence of the names in the general population ((a) less prevalent; (b) prevalent).

no shared name: adding a personal name increased the number who replied by 0.75%, while adding a surname increased the number by 3.79%. Adding two names in common increased the reply rate by 10.33%.

The content of the email messages indicated that a shared full name elicited positively valenced affective responses. We suggest that the effectiveness of nominal kinship cues in eliciting replies to the email requests emerged from functionally nepotistic feelings towards a stranger who might have ancestors in common.

The percentage of replies was significantly greater for less prevalent, but not rare, names such as Banks and Williamson than for common names such as Smith and Wilson. The difference between prevalent and less prevalent names was most pronounced in the condition in which personal names and surnames were both shared by email sender and addressee. It would be useful to know to what extent people discount information about common ancestry, such as names, as a function of the prevalence of names and other factors including family and personal history.

There were significantly more replies from female names than male names. The sex difference in responding to the email request was greatest for the condition of a shared full name. In Canada, women tend to be the kin keepers as evidenced by the fact that (i) women can identify more relatives than their brothers who had the same set of relatives (Salmon & Daly 1996), and (ii) women, more than men, maintain contact with distant kin by let-

ters and telephone (Salmon 1999). The predominance of female name replies when both names are shared is consistent with our thinking that women may be especially touched by the idea of contacting strangers who might be related. Typically, women are less inclined than men to help strangers and more likely to help close friends and relatives (Eagley & Crowley 1986). Among the Yanomamö, men are more knowledgeable than women about kinship and kinship knowledge has more use for men than for women (Fredlund 1985; Chagnon 2001). We anticipate that cross-cultural replications of this study would result in sexual asymmetries in altruism as a function of the use of kin and knowledge of kin, the system of descent reckoning, and the relative independence and power of men and women.

Our index of altruism was a low-cost task entailing transmission of one's knowledge and expertise. The imposition on the email recipient was deliberately kept small, but it would be interesting to vary the costs of altruism. In a series of imagined scenarios, in which one has to decide how likely one is to help a person as a function of 'genetic relatedness' and the costs of the task (minor courtesies versus life-and-death heroic acts), Burnstein *et al.* (1994) found that people felt more inclined to help relatives than non-relatives, especially in life-and-death circumstances. For low-cost acts of altruism, such as providing information by email, it would be interesting to see if the domain of knowledge or expertise affected the inclination to help a stranger who happens to have the same name.

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