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# Affective consequences of mere ownership: The name letter effect in twelve European languages

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*Abstract*

*The hypothesis is tested that mere ownership of an object is a sufficient condition to enhance its likelihood to become one of the most attractive items of the entire set of similar objects. Evidence is presented that isolated visual letter stimuli belonging to one's own name are more often ranked among the six most preferred letters of the entire alphabet than identical not-own name letters. Across 12 different European languages, an (own) name letter effect was found for (initial and/or not-initial) letters belonging to own first and/or family name. The fundamental theoretical relevance of the effect is outlined as well as its heuristic value for research on individual versus collective ownership and on affective asymmetry. A cross-lingual analysis of the six least preferred letters — while also confirming the mere ownership hypothesis — calls for a critical reformulation of Zajonc's mere exposure theory.*

## INTRODUCTION

J. M. Nuttin, Jr. (1984, 1985) tested the hypothesis that mere ownership or belongingness to self is a sufficient condition for an enhancement of the attractiveness of the own(ed) object. At first sight there seems to be little need for an experimental test of the hypothesis that ownership generally leads to increased liking: we know all too well that people tend to become attached to their 'own belongings', be it children, pets, material properties, symbols, opinions or values. Such evidence, however, does not prove that *mere* belongingness to self, or ownership *per se*, is a sufficient condition for increased liking. The attractiveness of an 'own' object is probably related to a multitude of factors and circumstances which are antecedent and/or consequent to ownership, such as invested effort, choice, repeated exposure, costs and benefits, controllability, social approval, etc.

* This is a first report of the main results of a cross-lingual study done in 1984–1985 in close collaboration with Hilde Sas to whom the author is deeply indebted for her assuming responsibility not only for the organization of the 12 studies but also for the processing of the data. Requests for reprints or for more detailed information can be obtained at the author's address.

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The *mere* ownership or belongingness to self hypothesis implies that belongingness be isolated from any other potential determinant of liking, and even from *perceived* belongingness. As a matter of fact, Nuttin's hypothesis has to be distinguished from the one developed in Fritz Heider's *The Psychology of Interpersonal Relations*. In his classic book, Heider (1958) utilizes the concepts unit formation and balanced state to account for the development and change of positive and negative sentiments. 'Separate entities comprise a unit when they are *perceived* as belonging together' (p. 176, italics added) and the concept of balanced state refers to a situation in which the perceived units and the sentiments co-exist without stress. In his discussion of cases of balanced states, Heider briefly considers the relation between ownership and sentiments (p. 194). The *cognitive* relation '*p* owns *x*' (or '*x* belongs to *p*') is said to induce a sentiment relation '*p* likes *x*', in other words *p* tends to like the object he perceives as belonging to himself. Heider illustrates the case with a reference to Irwin and Gebhard (1946), who found that children expressed a preference for an object which was perceived to be given to them, as compared with an object which was to be given to another child. Irwin and Gebhard suggested that 'these results may illustrate some general principle whereby ownership enhances the value of an object to the owner' (p. 651).

In contrast to Heider's '*perceived* belongingness of *x* to *p* leads to enhanced liking of *x*', Nuttin's hypothesis implies no cognitive unit relation between owner and object, and states that *mere* belongingness of *x* to *p* leads to enhanced liking of *x*. In order to couch this hypothesis in a testable form, it was imperative to think of experimental objects which would meet at least four requirements: (1) ownership of the objects should not differentially affect the behaviour of owners versus not-owners, except for the hypothesized enhanced liking of the owned object; (2) in order to eliminate perceived belongingness, mere belongingness has to be manipulated as an independent variable in the absence of subjects' awareness of belongingness of objects to self; (3) the experimental objects must be different between subjects so that it becomes possible to unambiguously assess that the owner prefers his own objects above the objects belonging to others; and (4) the very objects belonging to self as well as those not belonging to self must be in all other respects comparable between subjects, so that no systematic differences in attractiveness could result from any characteristics of the objects other than their belonging or not belonging to self.

Nuttin (1984, 1985) submits that these requirements were fulfilled in the two letter preference experiments on Flemish elementary school children and university students. As experimental objects (*x*) he used the capital letter stimuli of the Roman alphabet, visually presented in letter pairs or triads of which only one object per pair or triad did meet the belongingness-to-self criterion. Since own first and family name is a very important attribute of self, Nuttin postulated belongingness (of *x*) to self (*p*) whenever a letter stimulus was an element of the written name of the literate subject. The not-own name letter(s) of the pairs and triads were treated as not belonging to self. After careful retrospective probing into the conscious experience of many pilot subjects, a yoked experimental design and procedure were set up in such a way that any awareness of perceived belongingness versus not-belongingness to self was ruled out in a more than satisfactory manner.

In both experiments the average proportion of own name letters preferred was very significantly higher than the average proportion of name letters preferred in the name of a random yoked partner. The effect was obtained as well for first names as for

family names and was not determined only by an enhanced attractiveness of the initial letters of first and family name. The (own) name letter effect thus gave strong support to the hypothesis that mere belongingness of an object to self, or to a relatively unique attribute of the self, is a sufficient condition for an enhancement of the object's attractiveness.

The name letter effect is more than a cute psychological phenomenon or a new parlour and betting game[1]. Besides being the first experimental test of the affective consequences of mere ownership, it could prove to be relevant as an unobtrusive measure of one or another dimension of attachment to self. Moreover, the paradigm by which it was demonstrated might provide an elegant tool for comparing attachment to various other objects belonging to self, e.g. the letters belonging to names of significant others, be it individuals, groups, or nonsocial objects such as the numbers belonging to one's own birthdate.

More important, however, the name letter effect is an intriguing new finding which challenges current fundamental understanding of affective processes. Nisbett and Wilson (1977) did point out that people, who generally are aware of their preferences and aversions, are often not aware of the bases from which these preferences and aversions derive. The name letter effect goes a step further: it suggests that people do have systematic preferences that are *themselves* normally not accessible to awareness. Even the few who might realize that they did develop an affective hierarchy for isolated letters, will not readily admit that they have a bias towards own name letters. The name letter effect thus offers a rather unexpected and simple demonstration of *unconscious preferences for self*, having at least heuristic value for the debated issue of preferences versus inferences (Zajonc, 1980). In a similar vein, it suggests a confrontation with the rather one-sided cognitive approach in the current research on the impact of self-reference upon perception, memory and information processing in general (Markus and Sentis, 1982; Markus and Wurf, 1987).

Last but not least, another theoretically quite exciting feature of the name letter effect has to do with the fact that the effect bears on a change in the attractiveness of the *isolated elements* (the letter stimuli) comprising the first and/or family name. While testing his mere ownership hypothesis, Nuttin made the seemingly far-fetched assumption that the isolated letter stimuli of the alphabet can be treated as psychological objects which either do belong or do not belong to an individual person. One can, of course, easily accept that names do belong to the named. As a matter of fact, when asked who we are, we are reinforced for producing our name. Granted that people tend to be more attached to self than to not-self, one will not be surprised to find that one feels generally more attracted to one's own name. First and family names are indeed complex discriminative stimulus compounds which have a long history of exclusive contingency with self (as opposed to others).

In contrast to names, name letters have anything but an exclusive contingency with self. Isolated name letters are just plain letters, sampled from a limited set of ($\pm 26$) letter stimuli to all of which Western *homo alphabeticus* actively or passively exposes himself while reading and writing (and to some extent when listening and talking). Each letter stimulus is an alphabetical element belonging—with variable frequency—to thousands of more complex stimulus compounds (words or letter strings), which

[1]If one constructs e.g. a list of letter triads each containing only one of a naïve subject's name letters, and if one invites her or him to quickly and spontaneously, without any thinking, cross out the two least attractive letters in each triad, it is very likely that one will successfully predict—better than a naïve third betting partner—which letters the subject will not cross out.

refer to objects, meanings and situations with widely divergent and often opposite emotional and reinforcement contingencies. University students, much more so than young children, generally have been exposed many million times to letter stimuli in the various combinations which are typical for their linguistic community.

The intriguing issue then is that the experimental subjects proved to affectively discriminate between those letter stimuli which happened to be used versus not-used in two (first and family name) of a myriad of letter combinations, whereas these very same letters inevitably are basic elements for all possible letter combinations. Again, it seems appropriate to confront the name letter effect with a fundamental issue in the area of general psychology, *viz.* the literature on compound stimulus learning which suggests that in certain species the dominant affective reactions elicited by complex conditional stimuli also can be elicited by the isolated elements of the compound (for a review see Rescorla, 1981). The contrast with the name letter effect is especially surprising in view of the fact that one of the procedures to definitively extinguish associations between a compound and one of its constituent elements is to expose the animal to the identical element in different contexts (Rescorla and Freberg, 1978). Thus, the basic question arises if mere ownership could be such a pervasive characteristic that its affective impact would not only affect the stimulus compound or name Gestalt but even its constituent elements, and this notwithstanding the fact that these constituent elements are presented numerous times more often in different contexts.

Clearly, the study of the fundamental processes underlying such a phenomenon of affective contagion of 'universal' stimulus elements is a research topic which transcends the traditional boundaries of experimental social psychology. Because of the far-reaching implications and questions raised by the observed effect, we felt that, before developing a research programme aiming at a better understanding of its determinants and underlying processes, it might be wise to test the generality and robustness of the effect. The first question which comes to mind is a very simple one: is the name letter effect, which was originally assessed on Flemish subjects, an effect which is typical for the cultural and linguistic community of the Dutch-speaking part of Belgium, or are we dealing with a relatively culture- and language-free phenomenon which can be generalized to other cultural and linguistic literate communities? There might e.g. be quite some cross-cultural variability with regard to the social reinforcement contingencies of the use of first and/or family names. Probably even more important is the possibility that the relative frequency of name letters and name letter combinations is a complex function of characteristics of the language used in the prevalent linguistic community; in which case the name letter effect—even with the rigorous yoked design used in the Flemish studies—might basically be an artifact due to some unknown idiosyncratic characteristics of the Dutch language.

We would, however, like to stress the point that we are not interested in the study of cross-cultural or cross-lingual differences, but only in the question of the fundamental generality and robustness of the name letter effect. Different linguistic communities basically allow for a quasi-experimental manipulation of the cultural and linguistic features which might determine the attractiveness of isolated letters. Obviously, it will be more justified to explore the fundamental issues of the theoretical interpretation of the name letter effect if it subsists despite the cultural and linguistic contexts in which people are exposed to own name letters.

Finally, we wish to point out, as will be made clear in the Method and Discussion sections, that the present cross-lingual study is in fact more than a mere replication

of the original name letter experiments. Although the procedure had to be simplified for practical reasons, the prediction tested became more ambitious and the data analysis even more stringent than in the original experiments.

## METHOD

The cross-lingual study was run at universities in 13 European countries, using 12 different mother tongues including one with a non-Roman, *i.e.* the Greek alphabet. Various colleagues of the European Association of Experimental Social Psychology volunteered their precious collaboration as well for the supervision of the translation of the instructions as for the data gathering which typically was organized during their lectures (cfr. *infra* for acknowledgements).

The feasibility of this 'long distance research' did require a less time-consuming method which would lend itself to a collective rather than an individual testing. At the same time, it was also imperative to maximally standardize, across countries, the interactions between experimenter and subject. Therefore we abandoned the name letter paradigm with its technically quite demanding construction of individual *ad hoc* name stimulus lists and its yoking of subjects with identical own and partner's name stimulus lists. Instead we used a paper and pencil approach with completely written instructions (except, of course, for the motivating exhortation of the local experimenter).

Basically, the students were urged to let them only be governed by their feelings while quickly selecting the six most attractive letters from an unforeseen random presentation of all the capital letters of their mother tongue alphabet. One potential drawback of this simplified method might be the fact that a subject can express her/his preference for six letters only, while an average (first and family) name, depending on the language community, has between 8.5 and 11.2 different letters. On the basis of various pilot studies we decided to keep the number of choices relatively small and constant across subjects since this was important for a rigorous analysis of the results.

We wanted indeed that the method would allow us to test a prediction, based on an analysis of the following question for each of the letters in each of the 12 languages: is the probability that letter *x* will be selected among the six most attractive letters of the alphabet higher when letter *x* is an own name letter than when this *identical* letter *x* is not an own name letter? Just as in the original experiments, the mere ownership hypothesis was tested for first and/or family names, with and without initials. Needless to say that the simplified method was first tested out on a new sample of Flemish subjects (from a different university, *viz.* UFSAL at Brussels) and that it was only after a successful replication of the name letter effect that the other eleven language studies were undertaken simultaneously.

### Subjects

After eliminating all participants whose mother tongue was different from the official language at their university, there was a total of 2047 subjects, typically studying social and behavioural sciences, two-thirds of them female. The 12 language studies were based on nonrandom samples with varying numbers of subjects enrolled at universities in the following European countries and cities. *Dutch* study ($N = 277$): Belgium, Brussels; *English* study ($N = 212$): England, Exeter and Kent; *Finnish* study

($N = 119$): Finland, Helsinki; *French* study ($N = 294$): Belgium, Louvain-la-Neuve, and France, Aix-en-Provence; *German* study ($N = 247$): West-Germany, Düsseldorf, and Austria, Graz; *Greek* study ($N = 86$): Greece, Athens; *Hungarian* study ($N = 78$): Hungary, Budapest; *Italian* study ($N = 257$): Italy, Bologna and Padova; *Norwegian* study ($N = 37$): Norway, Lillehammer; *Polish* study ($N = 137$): Poland, Warsaw; *Portuguese* study ($N = 106$): Portugal, Lisbon; *Spanish* study ($N = 197$): Spain, Barcelona.

**Instructions and stimulus material**

The local supervisors dispensed the centrally prepared test booklets which contained, in identical format, the instructions translated in the appropriate language and the capital letter stimuli of the alphabet relevant for each language. The experimenters were invited (1) not to tell the students beforehand that the study had to do with letter preferences; (2) to briefly motivate them to cooperate in a very short cross-cultural study; (3) to work individually without communicating to each other; and (4) not to open the booklet before having carefully read the instructions written on the first page.

Each booklet had on its cover page the letter heading of the Leuven Laboratory for Experimental Social Psychology. The instructions read as follows:

> Thank you very much for your willingness to cooperate during a few minutes in a very simple experiment. We are interested in the scientific study of spontaneous preferences of people from different countries and cultures. Students from some 10 other European countries will answer the same questions which we are about to ask you.
>
> May we insist that you read the instructions very carefully and that you do not turn this page before having read it to the end.
>
> Soon you will be given a series of very simple and familiar 'stimuli'. We intentionally use the neutral term 'stimuli' in order to prevent that you might already start with the mental preparation of your task. The term 'stimulus' refers to any figure, symbol or drawing which will be presented to you.
>
> When you will be asked which 'stimuli' you prefer most, please do not start to ponder on their shape, meaning or format. Let your choices only be governed by your general positive *feelings* towards the stimuli.
>
> The task might seem rather strange to you since you probably will never have been asked before to judge the attractiveness of this type of stimuli. However, on the basis of previous research, we are convinced that the study of this kind of preferences might lead to a better understanding of certain aspects of human affect.
>
> First we ask you to encircle, as spontaneously as possible, the six stimuli which you find *most attractive*, which you *prefer* above the others. This by itself is a rather simple task. It might however become somewhat more difficult when we ask you to make your choices without thinking. So, please try to stop all thinking. As a matter of fact, we are only interested in your spontaneous choosing without reasoning.
>
> Thus, your first task will be to try to *feel* which six stimuli you prefer most in the whole series.
>
> At the same time, we would like you to *rank* your choices in their order of preference: above the stimulus which you find the most attractive, please write number 1, above the stimulus which you find the second most attractive, you

write number 2, etc . . . up to number 6. Do not hesitate too long and decide quickly lest you start thinking instead of being governed by your feelings. Please turn now this and the next green page and start immediately encircling and ranking from 1 to 6 the stimuli which you prefer *most*.

The function of the green page was simply to completely mask the letter stimuli printed in the centre of the next full page. Each subject was exposed to one of 10 random orders of the capital letters of his alphabet. The letter stimuli, each approximately 8 mm high and/or large and 1.5 mm thick, were presented in four rows with horizontal and vertical spaces of $\pm 15$ mm (see Figure 1 for a random order of the alphabet used in the English and the Greek study).

In order to limit and standardize somewhat, across languages, the length of the sequences of capital letter stimuli we decided to only include the elementary forms of the capital letters, without diacritical marks, e.g. Ł (in Polish), or combined letters, e.g. CS and DZS (in Hungarian), even when these variations do strongly affect the pronunciation. Understandably, this rule was only reluctantly accepted by some of the local colleagues, since quite a few of these more complex and/or combined letters are typical for a specific language. We thought, however, that in all these cases the more elementary and universal form of the capital letter always was itself at least an important element of the more complex stimulus with diacritical marks or combined letters. Although this conservative rule might rather inhibit the appearance of the name letter effect, it certainly was completely in line with the elementalistic aspect of our hypothesis. As a matter of fact, an elementary form of a more complex letter can be seen as conceptually equivalent to the letter stimulus being an element of a more complex name stimulus. For exploratory reasons we made only two exceptions to this rule: the Ä and Ö in the Finnish study and the Æ, Å, and Ø in the Norwegian study.

The capital letters used in each stimulus list of the 12 language studies are given in Table 1. It will be noticed that all the Roman alphabets were identical except for: Hungarian (no W), Italian (no J), Polish (no Q, V, and X), Finnish (plus Ä, Ö), and Norwegian (plus Ä, Ø, and Æ). The letters between brackets are 'never-name letters' which were printed on the stimulus page, since they are used in that particular language, but which happened not to belong to any of the names of the subjects sampled

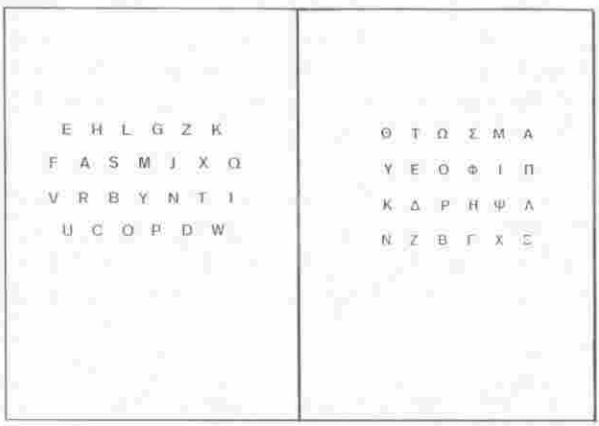


Figure 1. One of the 10 random presentations of the alphabet used in the English and Greek study

in that language study. Unfortunately, the reverse situation also occurred, e.g. in the Italian study. On the advice of a linguist the letter J was not printed on the stimulus sheet 'because this letter is not used in Italian'. This way, several Italian subjects having a foreign first or family name, were prevented from manifesting any preference for their own name letter J or for the initial of their world famous football club with the Latin name Juventus.

On the final page, subjects were asked to specify their mother tongue, age and sex, and how often they read books in other—and in which—languages. Of course, they were also asked to write down their family and first name. In seven of the 12 studies we inquired about eventual nicknames and about the frequency of subject's experience with mathematical symbols like X and Y and letter games such as Scrabble.

## RESULTS

Within each language study, the data were collapsed over the not significantly differing categories related to random order of letter presentation, sex, polyglotism, and experience with mathematical symbols or letter games.

The mere ownership hypothesis was tested via the following prediction: the mere fact that letters are own name letters will enhance the probability that they will rank more often among the six most preferred letters of the alphabet. This implies that the results be analysed in such a manner that all other possible determinants of attractiveness are kept constant. Therefore, within each language study, the unit of analysis is the direction and size of the difference between the proportion of preferences expressed for a particular letter $x$ when this letter belongs to the name of the subjects choosing that letter, and the proportion of preferences expressed for the *identical* letter $x$ when this letter does not belong to the name of the subjects choosing that letter. A positive difference means that the letter $x$ is more preferred when it is an own name letter. Since the name letter effect relates to letters in general, the null-hypothesis, tested by randomization test (Edgington, 1980), is that, across all the letters of the alphabet, and taking into account the relative size and direction of the positive and negative differences, the observed differences are not different from those one would expect if belongingness to own name was a mere coincidence. The only letters excluded from this analysis are those for which no difference could be calculated for the simple reason that the letter was never an own name letter for any of the subjects of a particular language study. These never-name letters did occur in six languages and typically are letters with extremely low letter frequency in the respective languages.

The results are presented in Table 1. For reasons which will become clear in the final section, the letters are not listed in alphabetical order, but in order of letter frequency for each language[2]. The letter stimuli are followed by a + sign whenever the observed difference between the proportion own and not own name letters is positive.

[2]Published letter frequency counts were only available for Dutch (Van Berckel Brandt Corstius, Mokken and Van Wijngaarden, 1965) and English (Solso and King, 1976). For the other languages, the letter frequency counts were made by Hilde Sas. Each count was based on $\pm$ 30 000 letters sampled from newspaper articles on a variety of topics. Except for Finnish and Norwegian, diacritical marks were discounted, whereas double or triple letters (e.g. the Hungarian CS and DZS) were counted as two and three letters, respectively.

Table 1. Attractiveness of own versus not-own name letters (first and family name) in 12 European language groups

| Dutch | English | Finnish | French | German | Greek | Hungarian | Italian | Norwegian | Polish | Portuguese | Spanish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E | E+ | A+ | E+ | E+ | A+ | E+ | E+ | E+ | A+ | A+ | E+ |
| N+ | T+ | I | S+ | N+ | O | A+ | A+ | R+ | E+ | E | A+ |
| A | O+ | T+ | U+ | R+ | I+ | T+ | I | N+ | I+ | O | O+ |
| I+ | A+ | N | A+ | I | E+ | O | O | T | O+ | S | N+ |
| T+ | I+ | E+ | I+ | A+ | T+ | S+ | N | S+ | Z | R | S+ |
| R | N+ | S+ | N+ | S+ | Σ+ | L+ | T+ | I | N+ | I | I+ |
| D+ | S | O+ | T+ | T+ | N+ | N+ | R+ | A+ | R+ | D+ | R+ |
| O+ | R+ | L | O | D+ | H+ | K+ | L+ | O | S+ | N+ | L+ |
| S+ | H+ | U+ | R | U+ | Y+ | I+ | S+ | L+ | C+ | T+ | D+ |
| L+ | L+ | K+ | L+ | H+ | P+ | Z | C+ | D+ | W+ | M+ | T+ |
| G+ | D+ | Ä | C+ | L+ | K+ | R | D+ | K | T+ | U | C+ |
| H+ | C+ | M+ | M+ | G+ | Π+ | M+ | U | G+ | Y | C+ | U+ |
| V+ | U+ | V+ | D+ | C+ | M+ | G | P+ | M+ | D | P+ | P+ |
| M+ | M+ | R+ | P+ | O+ | Λ | B+ | M+ | F+ | L | L | M+ |
| K+ | F+ | J+ | V+ | M+ | Ω+ | U | V+ | V | P+ | V+ | B+ |
| U | P+ | H | Q+ | B+ | Γ+ | Y | G+ | P+ | K+ | G+ | G+ |
| J+ | G+ | Y+ | H+ | F+ | Δ+ | V | H+ | U+ | U+ | F+ | Q+ |
| W+ | W+ | P+ | F+ | W+ | Χ+ | D | F+ | Å+ | M+ | Q+ | V+ |
| P+ | Y+ | D | B+ | K+ | Θ+ | H | B+ | B | J+ | B+ | F+ |
| C+ | B+ | Ö+ | G+ | Z | Φ+ | J+ | Z+ | H+ | G+ | H | Y |
| B+ | V+ | G+ | J+ | V+ | B+ | P | Q | Ø+ | B+ | Z+ | H+ |
| Z+ | K+ | B | Z+ | P+ | Z+ | C+ | K | J+ | H+ | J+ | Z+ |
| F+ | X | F+ | X | J+ | Ξ | F+ | X | Y+ | F+ | X+ | J+ |
| Y+ | J+ | C+ | Y+ | Y+ | Ψ+ | (Q) | Y+ | Æ+ | | (K) | X+ |
| X+ | (Q)* | W+ | K+ | X+ | | (X) | (W) | (C) | | (W) | K+ |
| Q+ | Z+ | Z+ | W+ | Q+ | | | | (W) | | Y | W+ |
| | | (Q) | | | | | | (X) | | | |
| | | (X) | | | | | | (Z) | | | |
| | | | | | | | | (Q) | | | |
| 22/26† | 23/25 | 19/26 | 23/26 | 24/26 | 21/25 | 13/23 | 17/24 | 18/24 | 19/23 | 15/24 | 25/26 |

A plus sign means that the letter was more often ranked among the six most attractive letters of the alphabet when it was an own name letter than when the identical letter was not an own name letter. (Letters are ranked according to the letter frequency in each language).

* Letters in brackets do not occur as name letters in the studied sample.

† Number of letters with positive difference versus number of letters analysed.

Letters between brackets are never-name letters and cannot have a + sign. Looking e.g. at the Spanish study (the extreme right column), one sees that the differences are in the predicted direction for each of the letters of the alphabet, except for the letter Y, and that the hypothesis is tested for the full alphabet presented to the Spanish sample since there are no never-name letters in this study. Underneath each language column one finds the total number of letters with positive differences and the total number of letters analysed.

In the first column of Table 2, the $p$-values determined by randomization test (2000 permutations) are given for each of the language studies. The observed differences across all the letters of the alphabet, taking into account their direction and size, are highly significant ($p = 0.001$) and in the predicted direction for the Dutch, English, Finnish, French, German, Greek, Norwegian, Polish and Spanish studies; they are in the predicted direction for the Hungarian, Italian, and Portuguese studies, but do not reach significance. A meta-analysis for testing the mean $p$ (Rosenthal, 1978) combining the $p$-values of the 12 independent studies (Bangert-Drows, 1986) turns out to be significant at the 0.0001 level (randomization tests determine 'exact $p$-values'; 0.001 is however the lowest $p$-value calculated for each separate study and 0.0001 for all combined results).

The relative *size* of the name letter effect can be illustrated as follows: across letters and languages, the average probability for a letter to be a most preferred letter is 0.20 for not-own name letters versus 0.30 for own name letters. This means that, in general, letters of the alphabets used in the 12 languages, are 50 per cent more likely to be selected among the top six letters of the alphabet when they happen to be own name letters than when they do not belong to own name. The relative size of the name letter effect for each language study is drawn in Figure 2 (solid lines). The length of the lines indicates the average difference between the probabilities that own name letters versus not-own name letters are selected among the six most preferred letters of the alphabet. Since this difference was positive for each of the 12 studies, the bottom probabilities always refer to not-own name letters. The probabilities are, of course, a function of the total number of letters analysed within each language. The differences between languages are however so small that they do not impede cross-lingual comparisons of the relative size of the effects. It can be seen (solid lines) that the strongest effects were observed in the Scandinavian studies: the likelihood for any letter to become a most preferred letter is almost doubled when the letter happens to belong to the name of a Norwegian (0.18 versus 0.35) or Finnish (0.19 versus 0.35) student. The Dutch, German, and Polish language groups all have average differences between probabilities own versus not-own name letters of more than 0.11.

**Further analysis of the Name Letter Effect**

So far the letter preferences were analysed for the effect of their mere belongingness to the full own first and family name. We will now proceed to a more detailed analysis of the same data, successively for the letters belonging to own first name, to own last name and to initials of own first and last name. In this analysis, the not-own name letters used for computation of their probability as most preferred letters, remain basically the same as in the previous analysis. There are, of course, minor changes in the total number of letters for which the differences 'own versus not-own' have been calculated, due to differences in the number of never-first name, never-last name

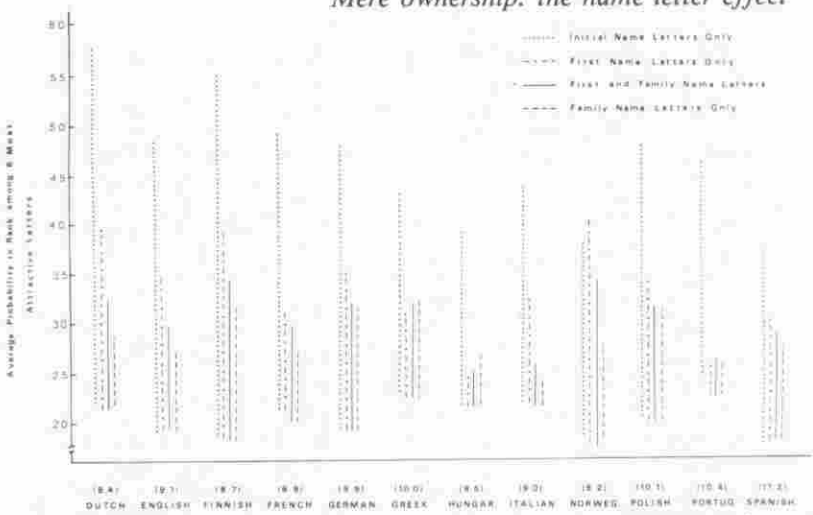


Figure 2. Enhancement of the average probability, for each of 12 languages, that any letter be ranked among the six most attractive letters of the alphabet, as a function of mere belongingness to own first and/or family name or to own initials. All observed differences being in the predicted direction, the bottom probabilities always refer to letters when they are not belonging to own name. (The average number of different letters in full first and family names is given between brackets)

or never-initial letters in each language sample. The own name letters used for computation of their probability as most preferred letters are systematically different: for an analysis of the letters belonging to own first name, the own family name letters are discounted from the analysis (except the own family name letters which also belong to own first name); in a similar manner the own first name letters are discounted in the analysis of the own family name letters, whereas all own name letters, except the first letters of first and family name, are discounted for the analysis of own initials. The statistical analysis, by randomization test, on the observed differences between each of these three categories of own name letters and the not-own name letters, was done in the same way as in the previous analysis.

In Table 2 the $p$-values are given for the various analyses for each of the language studies and for the combined results. The analysis for own *first name* letters basically leads to the same results as the first and family name letters, except that the effect in the Italian study is now very significant ($p = 0.007$). The Hungarian and Portuguese data are the only ones which do not reach significance, but the observed differences are again in the predicted direction. Letters belonging to own *family name* parallel the effects obtained in the own first and family name analysis, with the Hungarian, Italian, and Portuguese studies again not reaching significance, but with all observed differences in the predicted direction. When the name letters are restricted to the *initials* of first and family name, the effect is very significant in all 12 language studies. A meta-analysis on the combined 12 independent studies leads to a very significant effect ($p = 0.0001$) as well for own first name letters only as for own family name letters only as for own initial name letters only.

In Figure 2 the relative sizes of the effects are shown for each of the language groups and for each of the three selected subgroups of own name letters. Across letters and languages, own *first name* letters have an average probability of 0.33 to be most preferred letters, which is to be compared to the probability of 0.20 for not-own name

Table 2. *P*-values, determined by randomization tests (2000 permutations), for various analyses of the name letter effect, in each of the twelve language studies (number of subjects in brackets)

| Language groups | First and family | First only | Family only | Initials only |
|---|---|---|---|---|
| Dutch (277) | 0.001 | 0.001 | 0.001 | 0.001 |
| English (212) | 0.001 | 0.001 | 0.001 | 0.001 |
| Finnish (119) | 0.001 | 0.001 | 0.001 | 0.001 |
| French (294) | 0.001 | 0.001 | 0.001 | 0.001 |
| German (247) | 0.001 | 0.001 | 0.001 | 0.001 |
| Greek (86) | 0.001 | 0.007 | 0.004 | 0.005 |
| Hungarian (78) | 0.061 | 0.115 | 0.090 | 0.009 |
| Italian (257) | 0.073 | 0.007 | 0.102 | 0.001 |
| Norwegian (37) | 0.001 | 0.001 | 0.041 | 0.005 |
| Polish (137) | 0.001 | 0.001 | 0.001 | 0.001 |
| Portuguese (106) | 0.110 | 0.234 | 0.188 | 0.001 |
| Spanish (197) | 0.001 | 0.001 | 0.001 | 0.001 |
| Meta-analyses | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

letters. As can be seen in Figure 2, this effect is especially strong in the Dutch, Finnish and Norwegian samples where the probability for any letter to be selected among the six most attractive letters of the alphabet is twice as high if that letter happens to be an own first name letter. Across letters and languages, the *own family* name letters have an average probability of 0.28, as compared to 0.20 for not-own name letters. The strongest effects are obtained in the Finnish, German, and Polish language studies, where average differences varying from 0.11 to 0.13 are obtained. Overall, the first name letter effect is very significantly stronger than the family name letter effect (repeated measures analysis of variance, $F = 11.04$; $df = 1/11$; $p = 0.007$, two tailed). Let it be noted in passing that a separate analysis of letters belonging to nicknames also yielded very significant effects.

The strongest name letter effect, however, is the effect related to the first letters of the first and family names. Compared to 0.21 for letters which are not-own name letters, the own *initial* name letters have an average probability of as much as 0.46 to be selected among the six most attractive letters of the alphabet. In Table 3 one can see the differences obtained for each letter and each language. However impressive the own name letter effect might be when only the own initial name letters are considered, the cross-lingual study strengthens the results of the original experiments (Nuttin, 1985) where it was demonstrated that the name letter effect is not determined only by an enhanced attractiveness of the initial letters of own first and family name (p. 358). As a matter of fact, across the 12 language studies, a separate analysis of all the data revealed that the combined effects remain highly significant for own first and family name without own initials ($p = 0.0023$), for own first name letters without own initial ($p = 0.0015$), and for own family name without own initial ($p = 0.0005$).

## DISCUSSION

The data lend strong support to the hypothesis that mere ownership of an object is a sufficient condition to enhance its likelihood to become one of the most attractive

Table 3. Attractiveness of own versus not-own initial name letters in twelve European language groups

| Dutch | English | Finnish | French | German | Greek | Hungarian | Italian | Norwegian | Polish | Portuguese | Spanish |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E+ | E+ | A+ | E+ | E+ | A+ | E+ | E+ | E+ | A+ | A+ | E |
| N+ | T+ | I+ | S+ | N+ | O | A+ | A+ | R+ | E+ | E | A+ |
| A+ | O+ | T+ | U+ | R+ | I+ | T+ | I+ | N | I+ | O+ | O+ |
| I+ | A+ | N+ | A+ | I+ | E+ | O | O | T+ | O+ | S | N+ |
| T+ | I+ | E+ | I+ | A+ | T+ | S+ | N+ | S+ | Z+ | R+ | S+ |
| R+ | N+ | S+ | N+ | S+ | Σ+ | L+ | T+ | I | N+ | I+ | I+ |
| D+ | S+ | O+ | T+ | T+ | N+ | N+ | R+ | A+ | R+ | D+ | R+ |
| O+ | R+ | L+ | O+ | D+ | H | K+ | L+ | O | S+ | N+ | L+ |
| S+ | H+ | U+ | R+ | U+ | (Y) | I+ | S+ | L+ | C+ | T+ | D |
| L+ | L | K+ | L+ | H+ | P+ | Z+ | C+ | (D) | W+ | M+ | T+ |
| G+ | D+ | (Ä) | C+ | L+ | K+ | R+ | D+ | K | T+ | (U) | C+ |
| H+ | C+ | M+ | M+ | G+ | Π+ | M+ | (U) | G+ | (Y) | C | U+ |
| V+ | U+ | V+ | D+ | C+ | M+ | G | P+ | M+ | D+ | P+ | P+ |
| M+ | M+ | R+ | P+ | O+ | Λ | B+ | M+ | F | L+ | L+ | M+ |
| K+ | F+ | J+ | V+ | M+ | (Ω) | (U) | V+ | V | P+ | V+ | B+ |
| (U)* | P+ | H+ | (Q) | B+ | Γ+ | (Y) | G+ | P | K+ | G+ | G+ |
| J+ | G+ | Y+ | H+ | F+ | Δ | V+ | H | Ů | U+ | F+ | Q |
| W+ | W+ | P+ | F+ | W+ | Ξ+ | D | F+ | (Å) | M+ | (Q) | V+ |
| P+ | Y | (D) | B+ | K+ | Θ+ | H | B+ | B+ | J+ | B+ | F+ |
| C+ | B+ | (Ö) | G+ | Z | Φ+ | J+ | Z+ | H+ | G+ | (H) | Y |
| B+ | V+ | (G) | J+ | V+ | B+ | P | Q | Ø+ | B+ | (Z) | H |
| Z+ | K+ | (B) | (Z) | P+ | Z | C+ | (K) | J+ | H+ | J+ | Z |
| F+ | (X) | F+ | (X) | J+ | (Ξ) | F+ | (X) | (Y) | F+ | (X) | J+ |
| Y+ | J+ | C+ | (Y) | (Y) | Ψ+ | (Q) | (Y) | (Æ) | | (K) | X |
| X+ | (Q) | W+ | K+ | (X) | | (X) | (W) | (C) | | (W) | K+ |
| Q+ | Z+ | (Z) | W+ | Q+ | | | | (W) | | (Y) | (W) |
| | | (Q) | | | | | | (X) | | | |
| | | (X) | | | | | | (Z) | | | |
| | | | | | | | | (Q) | | | |
| 25/25† | 22/24 | 20/20 | 22/22 | 23/24 | 16/21 | 16/21 | 17/20 | 12/20 | 22/22 | 15/18 | 18/25 |

A plus sign means that the letter was more often ranked among the six most attractive letters of the alphabet when it was an own initial name letter than when the identical letter was not an own name letter. (Letters are ranked according to the letter frequency in each language).

* Letters in brackets do not occur as initial name letters in the studied sample.

† Number of letters with positive difference versus number of letters analysed.

items of the entire set of similar objects. The experimental objects are very significantly more preferred when they happen to be elements belonging to own first and/or family name. Since the analysis of the results was based on belongingness versus not-belongingness to self for each letter of the alphabet separately, it is most unlikely that the effect could in any systematic way be related to other determinants of letter preference, such as visual, acoustical, aesthetic or semantic characteristics or the relative frequency of occurrence of the letter stimuli. The name letter effect, originally assessed on Flemish 7- to 11-year-old children and university students, has gained much strength in the present cross-lingual study, and this for several reasons.

First, it seems warranted to consider the effect as a relatively language- and culture-free phenomenon, at least in societies using written names which comprise alphabetical elements. The fact that, within each language, only very cultivated members—i.e. university students—were used as subjects, strengthens the fundamental relevance of the results. Students are indeed presumed to be professional consumers of tremendous quantities of visual letters. No doubt, for each of the 12 languages, it is only in an infinitesimal small proportion of their total active or passive letter exposure that students write, read and/or see their own name letters in the appropriate own name combination, Gestalt or stimulus compound.

In the second place, it seems very likely that the name letter effect is not restricted to the Roman alphabet. Unfortunately, we were not able to reach a sample of students using the Cyrillic alphabet which is so widespread in Europe. However, the generalization across alphabets is suggested by the strong results of the Greek study. Even if the analysis is restricted to the 10 Greek capitals which do not occur as visual stimuli in the Roman alphabet, differences between own versus not-own name letters turn out to be positive in eight out of 10 cases (see Table 1). The predicted differences were also observed for both capitals H and P which are visual stimuli shared by both aphabets, but which are pronounced quite differently.

In the third place, the method used in the present cross-lingual study allows for a more precise qualification of the predicted enhancement of attractiveness due to mere ownership. The name letter paradigm of the original experiments was designed for an unambiguous test of the prediction that own name letters are more preferred than the name letters of a yoked partner. The original findings did support the hypothesis that mere belongingness to self is a sufficient condition for an *enhanced* liking of the owned object. In the present study, however, the prediction tested was that the subjects would rank own name letters more often among the six *most* attractive letters of the alphabet. The paired or triadic comparisons between own and not-own name letters of the yoked partners in the original experiments were not intended to inform about the ordinal *level* of attractiveness of (own) name letters in comparison to all other letters of the alphabet. Unknown factors might indeed turn a few letters of the alphabet into personally and/or culturally cherished top star letters, e.g. the letters of the name of one's lover, idol or country. In a similar vein, some letters might invariably be ranked in the tail of the preference hierarchy, e.g. as ostracized symbols of repulsive objects. In principle, it could even be that personal names typically do comprise the neutral letters of the alphabet, just as first and family names usually are not the most exciting or repulsive words of the vocabulary. Such a state of affairs would not have prevented the demonstration of the name letter effect in the original experiments and the effect would remain an intriguing phenomenon even if it only did refer to a positive shift in e.g. a relatively neutral mid-zone of the preference hierarchy of the full alphabet.

The method used in the present study did however set the stage for an unambiguous test of the hypothesis that mere ownership enhances the probability that the owned object will become one of the most attractive objects of the total available set of similar objects. If one substitutes letter objects by social objects, the hypothesis tested could read as follows: the mere fact that a child is my own child is a sufficient condition to enhance the probability that I will rank it among the most attractive children of the entire available set of children.

The results of the cross-lingual study do indeed demonstrate that mere ownership can promote virtually *any* letter stimulus to the level of one of the most attractive letters of the entire alphabet. For an impressive illustration of this, we refer to the preferences for the first letters of first and family names in the Dutch, Finnish, French, and Polish studies (see Table 3). In each of these studies, all letters of the alphabet, without exception, are more likely to be selected among the top six when they happen to be an own initial name letter rather than a not-own name letter. This spread of the effect over the whole range of the alphabet is however not restricted to the initial letters. If e.g. first and family names of the Spanish subjects are analysed without any of their initial letters (not in table), still 22 out of 25 letters are more often selected among the top six of the alphabet when the letter is an own (not-initial) name letter than when it is a not-own name letter. Thus, the name letter effect not only demonstrates an enhancement of attractiveness, but suggests that mere ownership of any item of a set of objects will enhance its likelihood to become one of the most preferred objects of the entire set.

## FINAL OBSERVATIONS AND QUESTIONS

The present study on the affective consequences of mere ownership was not designed to clarify the processes underlying the name letter effect. The important result is that there now exists robust evidence across different languages for a letter preference phenomenon which enables a confrontation with the fundamental issues mentioned in the Introduction. In this last section we would like to point to a few observations which might be helpful for the formulation of further research questions.

### Initials, narcissism and nationalism

No doubt, the affective consequences of mere ownership are dramatically strong for the first letter of first and family name. Across the 12 studies the size of the effect for initials is roughly twice as large as the effect for the letters belonging to the first name: the average difference between proportions own versus not-own name letters ranked among the six most attractive letters of the alphabet is 0.25 for initials versus 0.13 for first (Christian) name letters. In the Hungarian, Italian and Portuguese studies, the full first and family name letter effect did not reach significance, but the effect for initial name letters was very significant. On the other hand, as can be seen in Figure 2, the size of the effect for initials was less impressive than the effect for first name letters in the Norwegian study. In the Spanish study, where a very robust name letter effect was obtained notwithstanding the fact that Spanish names are the longest of all studies (average of 19.3 letters, and 11.2 different letters), the size of the effect for the first letter of first and family name was larger than the size

of the first or family name letter effect. However, 97 per cent of all Spanish subjects have a double family name (typically one from the mother and one from the father) and 23 per cent have double first names. If one takes into account the first letter of each of the reported double names, the size of the effect for initials is virtually the same as that of the overall name letter effect for the full long names (not in figure). Also, the Spanish full first and family name letter effect remains very significant ($p = 0.001$) when the analysis is made without any of the initial letters of the single or double first and family names. Obviously, the question of the privileged attractiveness of initials is, even at the empirical level, not as simple as the strong average effect across the 12 studies might suggest.

Mitzi Johnson (1986), who did several name letter studies on American students of the Ohio State University, essentially replicated our original findings while using a method which allows no direct comparison either with our original or with the present studies. She was however so impressed by her results on preference for own initials that she changed the first initial of the name letter effect (NLE) into ILE, i.e., the initial letter effect. We would like to submit that initials are name letters, and that both her as well as our data do not allow for a reduction of the name letter effect to an initials effect only. The fact that the effect is generally more easily demonstrated with initial than not-initial letters is no sufficient basis for the identification of a new phenomenon. It is as if one would identify the conformity effect demonstrated with the unanimous majority paradigm of Asch as 'the third person effect' on the basis that its demonstration is easier or more impressive with a majority of three than with a majority of two, six, or 16 stooges. The essential feature of the name letter effect is that it enables a critical test of the intriguing hypothesis that mere belongingness to self of universal stimulus elements is a sufficient condition for an enhanced liking of these isolated elements. The available evidence relates both to initial and not-initial letters, provided that they are alphabetical elements used in one's own name. Moreover, the challenge for an adequate understanding of the underlying processes is basically identical for initial and not-initial name letters.

However, for reasons of research economy, it might be wise to concentrate first on an analysis of the processes involved in the enhanced preference for own initials. It seemed to us that the data assembled in the cross-lingual study did offer a rather unique opportunity for an empirical exploration of the specificity of the effect while testing at the same time some of the boundaries between narcissism and nationalism. When narcissism is defined as an (unconscious) affective overevaluation of one's own attributes, nationalism can be defined as an affective overevaluation of the attributes of one's own nation. The relation between the size of the name letter effect and the degree of exclusive ownership is for the time being an empirical question. Our own unpublished pilot studies do suggest that Flemish long time married partners prefer own name letters above the letters of the partner's name, even for women who share the family name of their husband. The difference between first and family name letters obtained in the present cross-lingual study does suggest that first names are more exclusively 'own' than family names which are shared with other members of this primary group.

What about initials which are shared by the whole nation? Would the mere fact that a letter is the national initial enhance its attractiveness? To answer this simple question an analysis of covariance (within national groups) was done on the difference between the average proportions that a letters was selected among the top six of the

alphabet when it was an own national initial versus when it was a not-own nation initial. The total sample of 2047 subjects was divided into 14 national samples (B for Dutch-speaking — Flemish — and French-speaking — Walloon — Belgians; GB for English subjects; S for Suomi, Finland; F for France; BD for Bundesrepublik Deutschland; O for Österreich: E for ΕΛΛΑΣ, Greece, and for España, Spain; M for Magyar, Hungary; I for Italia, N for Norsk, Norway; P for Polska, Poland, and for Portugal). Even when the data were adjusted for relative letter frequency in the local written language, there was no trace of a 'national initial letter effect' ($F = 0.23$, $p = 0.643$). This absence of enhanced preference for initials of the shared name of one's nation offers indeed a sharp contrast with the dramatic effect obtained for the first letters of one's own first and family name. Clearly, the mere fact that a letter is the initial of the name used to denote the identity of one's own country is not a sufficient condition for an enhancement of its attraction, not even in a research situation which made it clear that 'the same questions would be asked to students from some 10 other European countries' (cfr. Instructions). In fact, the data strongly suggest that people are much more deeply attached to objects belonging to own individual identity than to the identity of the own national group: individual ownership has affective consequences which are not observed for collective ownership.

In a similar manner, we briefly examined the possibility that own initials could become so attractive because of the high frequency of their visual appearance as isolated capital letters. It seems plausible to state that within each of the 14 nations one or two capital letters are more frequently and more saliently advertised as isolated capital initials than any other letter of the alphabet. As a matter of fact, in most countries the national identity of cars (and their owner) is conspicuously indicated with internationally recognized initial capital letters. Therefore, an analysis of covariance was done comparing attractiveness of own national car initials versus not-own national car initials. These letters are similar to the initials of own country except for Austria (A), Finland (SF), Hungary (H), Poland (PL), and West-Germany (D). The Greek sample was discounted from this analysis since there were no Greek preference data available for the letters GR which do not belong to the Greek alphabet. Again, the analysis did not reveal any enhanced preference for the subjects' own national car initials ($F = 0.37$; $p = 0.556$). These results suggest that visual prominence of very frequently displayed and isolated capital letters is not a likely candidate as an important determinant of the name letter effect.

**Affective asymmetry and mere relative low exposure**

Finally, we would like to point to another letter preference phenomenon which, it seems to us, deserves attention in its own right, and could also prove to be relevant for research on positive-negative asymmetry (see e.g. Kanouse and Hanson, 1971; Peeters, 1971; Czapinski, 1980) and on mere repeated stimulus exposure (Zajonc, 1968). For the sake of clarity, we did so far not mention the fact that the subjects of the cross-lingual study were not only invited to select the six most attractive but also the six least attractive letters of the alphabet. The test booklets did in fact contain two stimulus sheets, preceded by the appropriate instructions which were counterbalanced for order. Just as in the original experiments, we had indeed predicted that mere ownership would also enhance the probability that an own name letter would not be rejected. The combined results for the 12 language studies were very significant

and in the predicted direction (first and family name, $p = 0.0001$; first name only, $p = 0.0004$; family name only, $p = 0.0023$; initials only, $p = 0.0001$; and first and family name without initials, $p = 0.02$; the order of presentation—preferences first or rejections first—seemed to have no effect). In general, however, the size of the effects was typically reduced to approximately half the size obtained for the positive preferences. At the moment, we have no adequate explanation for this difference but suggest that it might be worthwhile to study this issue in conjunction with an analysis of what seems to be an affective asymmetry phenomenon in the letter preference hierarchy.

Years ago we were struck by the fact that a large sample of Flemish students revealed an impressive consensus with regard to the least preferred letters of the alphabet, and much less so for the most preferred letters. Although these students had never before been invited to rank letters for their attractiveness, and certainly could not communicate with each other while doing the task, as much as 40 per cent of the subjects chose the letter Q as the number one least attractive item of the 26 letters of the alphabet. More than two-thirds of the subjects did rank the letters Q, X, and Y among the four least preferred letters, the letter Q obtaining 78 per cent of the votes. These three letters happen to be the lowest frequency letters in the Dutch language (between 0.016 per cent and 0.098 per cent). Interestingly, however, at the other end of the frequency continuum, there was a marked absence of massive consensus on preference for the most frequent letters. The number one most frequent letter E (18.7 per cent) was the most preferred letter for only 10 per cent of the subjects, whereas the second highest frequency letter N (10.1 per cent) was never chosen as the star of the alphabet. The letter A was the only letter to be ranked by half of the students among the four most preferred letters, and was followed by B and E collecting only one-third of the preferences.

These observations induced us to formulate two different but probably not unrelated questions. The first question deals with the cross-lingual generality of an affective asymmetry phenomenon, revealing more unanimity for rejections than for preferences when isolated individuals are confronted with a set of letter stimuli. We merely point here to the fact that a statistical analysis of the relative unanimity for preferred versus rejected letters indicates that in each of the 12 language studies there is more 'unanimity', or interindividual similarity in the choices expressed, for the least than for the most preferred letters. If we replace the elements of the alphabet by the children of a schoolclass, our cross-lingual results are analogous to the results of Czapinski (1980) who found more unanimity for the three least preferred than for the three most preferred class companions for a holiday trip.

The second question deals with the relation between letter frequency (in the own written language) and preference versus rejection of isolated letter stimuli. One is surprised to see that so far no cross-lingual research has been done on letter preferences and this despite the fact that different languages are bound to create different quasi-experimental conditions allowing for massive stimulus-frequency manipulations which impossibly can be realized in the laboratory. As a matter of fact, each language typically has two or three letters (with frequencies between 10 and 19 per cent) to which people have been exposed about a thousand times more than to the two or three least frequent letters (between 0.003 and 0.01 per cent) of the same language. The circumstances that identical visual letter stimuli have extreme low frequencies in some languages and quite high frequencies in other languages, offers interesting

research possibilities for a confrontation with Zajonc's mere repeated stimulus exposure theory (1968). The capital letter Y e.g. is massively rejected in Dutch and German, where it is an extremely low frequency stimulus, but it is also massively rejected by the Polish and, indeed, by the Greek, notwithstanding the fact that its frequency is roughly 50 times higher in the Polish and Greek language (see Table 1 for rankorders of letter frequency in the 12 languages). The capital letter Q is massively rejected by all language groups who use it, even by the French, Spanish, and Portuguese speaking subjects for whom the letter Q is not a very low frequency letter. It has even a higher frequency for French and Portuguese than the letter B which happens to be the second most preferred letter for these groups.

Such observations might look trivial, except if one is prepared to consider letters as universal visual objects or stimuli which allow for a valid estimation of their relative and absolute cross-lingual exposure frequency. We are indeed puzzled by the fact that for each language the lowest frequency letters, whatever their visual appearance might be, are clearly overrepresented among the four least preferred letters of the alphabet, whereas the four most preferred letters are much less to be found among the highest frequency letters. We are however even more puzzled when considering that the lowest frequency letters are so massively rejected despite the fact that our subjects — university students — certainly have been exposed many thousand times (absolute frequency of exposure) to these very low frequency letters (relative frequency of exposure, in comparison to the other elements of the alphabet).

One simple example to illustrate this point. The capital letter W is the least frequent letter in the written French language, and is at the same time the most massively rejected letter for French-speaking students both from France and from Belgium. Since a very high proportion of the latter students are Walloons (inhabitants — des Wallons — of the southern part — la Wallonie — of Belgium), there is no doubt that the students had a very high absolute frequency of exposure to the letter W which is the initial letter of the names denoting their own cultural-national identity and country. The fact that Walloons massively reject their cultural-national initial is not in contradiction with the mere ownership hypothesis (see the above observations on narcissism versus nationalism) but, in our opinion, it seriously challenges the mere repeated stimulus exposure theory. It is well known that in the classic mere exposure experiments subjects are typically asked to evaluate meaningless, originally relatively neutral visual stimuli ('Turkish' words or 'Chinese' characters) to which they were briefly exposed with absolute frequencies varying between 0 and 25 or 50. For the 'high' frequencies, often even after no more than 10 short stimulus presentations, the experimental objects reach an asymptotic attractiveness level. To us, it is difficult to understand why, in our cross-lingual letter preference study, massive and consensual rejections are so typically associated with a variety of the lowest frequency letters whose absolute frequency of exposure is incomparably much higher than the highest frequencies of meaningless letter string stimuli ever manipulated in the laboratory. How can mere exposure explain massive rejection (negative evaluation) of cross-lingually *different* visual letter stimuli which have in common that they are very *low relative* frequency stimuli but also that they share very *high absolute* exposure frequencies which are probably, especially for students, a thousand times higher than the laboratory frequencies at which the classic asymptotic level for attractiveness should be reached for this type of meaningless stimuli?

We submit that mere exposure theory, which makes no distinction between absolute and relative amounts of exposure, might profit from a systematic confrontation with cross-lingual letter preference data. It is our conjecture that such an analysis might reveal: (1) that mere exposure effects are essentially mere *low* exposure effects, and (2) that, rather than absolute low exposure, it is the *relative* low exposure to some of the objects of a larger set of originally neutral but similar objects which determines the development and maintenance of a *rejection* hierarchy. On the other hand, such a systematic confrontation might also invalidate or qualify the implicit assumption that mere high absolute and/or relative exposure is a sufficient condition for a stimulus to be ranked among the most attractive of the entire set of similar objects. The initial letter of Europe is both the number one absolute and relative (averaging 12 per cent) top frequent letter across the European languages studied. It is however for none of the 12 language groups the most attractive letter of the alphabet; it is only once the second most preferred (Dutch) and two times the fourth most preferred letter (Hungarian and Finnish).

Whatever the effects might be of absolute versus relative high or low repeated exposure, the difference between mere (relative low?) exposure and mere ownership can be illustrated with the same capital letter W. As said before, the capital W is the least frequent letter of the French alphabet, and has low relative but very high absolute frequency. This does not prevent the stimulus to be the number one massively most disliked letter as well for Walloons as for students from France. As a matter of fact, more than two-thirds of the French-speaking students rank the capital W among the six *least* attractive stimuli of the whole alphabet. Still, as one can see in the French results of Tables 1 and 3, and as predicted by our mere ownership hypothesis, the same capital W—just as almost any other letter—is more likely to become one of the six *most* attractive letters of the alphabet, provided that the letter W merely belongs to one's own name.

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## ZUSAMMENFASSUNG


Es wird die Hypothese geprüft, daß das bloße Eigentum eines Objekts eine hinreichende Bedingung für die Erhöhung der Wahrscheinlichkeit ist, dieses Objekt als eines der attraktivsten in einer Menge von ähnlichen Objekten anzusehen. Es werden Belege dafür beschrieben, daß isolierte, visuell dargebotene Buchstaben, die zum eigenen Namen gehören, öfter zu den sechs am meisten bevorzugten Buchstaben des Alphabets gehören als Buchstaben, die nicht dem eigenen Namen entstammen. In zwölf unterschiedlichen europäischen Sprachen wurde dieser Namen-Buchstaben-Effekt für Anfangsbuchstaben oder Nichtanfangsbuchstaben, die zum Rufnamen oder Familiennamen gehören, gefunden. Die fundamentale theoretische Relevanz dieses Effekts ist umrissen, ebenso wie der heuristische Wert für Forschungen zum individuellen vs. kollektiven Eigentum und zur affektiven Asymmetrie. Eine Analyse der 6 in unterschiedlichen Sprachen am wenigsten bevorzugten Buchstaben bestätigt ebenfalls die Hypothese des bloßen Eigentums und weist auf die Notwendigkeit einer Reformulierung von Zajoncs Theorie der bloßen Anwesenheit hin.

## RÉSUMÉ

*Les conséquences affectives de la seule appartenance: l'effet lettre du nom propre dans douze langues européennes*

On teste l'hypothèse selon laquelle la simple possession d'un objet est une condition suffisante pour renforcer la possibilité qu'il devienne un des items les plus attractifs parmi une suite d'objets similaires. On montre que les stimuli visuels constitués d'une seule lettre isolée figurant dans le nom du sujet sont très souvent classés comme les six lettres les plus préférées de tout l'alphabet, comparées aux mêmes lettres n'y figurant pas. Pour douze langues européennes différentes, un effet du nom propre est apparu pour les lettres (initiales ou non) appartenant au prénom et/ou au nom de famille. On souligne la pertinence théorique fondamentale de cet effet de même que sa valeur heuristique qui doit susciter des recherches sur l'effet de l'appartenance individuelle ou collective et sur l'asymétrie affective. Une analyse comparative des six lettres les moins préférées dans différentes langues — même si elle confirme l'hypothèse de l'effet de la simple appartenance — nécessite une reformulation critique de la théorie du temps d'exposition de Zajonc.

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