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The universality of Baker-baker paradox

Psycholinguistic studies among Hungarian children

Introduction

Special status of personal names

- specific identifying function and particular semantic status
 - they denote a single individual
 - lack of imaginability
 - Baker-baker paradox
 - it is easier to associate and recall occupations or other information with new faces than personal names, even names with an occupational origin
- wider variety of phonological forms
- lower frequency
- lack of synonyms



more retrieval error

Studies on the mental representation of personal names

- observational studies
 - Young et al. 1985, Burke et al. 1991
 - experimental studies
 - word retrieval tasks based on photos of familiar/famous people
 - Hanley – Cowell 1988, Brennen et al. 1990, Brédart et al. 2005
 - learning experiments, fictitious biographies
 - Cohen – Faulkner 1986
 - names with a common noun origin (i.e. occupational names, descriptive names)
 - McWheeney et al. 1987, Terry 1994, James 2004, Fogler – James 2007, Fogler et al. 2010
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Studies on the mental representation of personal names

- main features of former studies
 - age effect (young adults – middle-aged people – older people)
 - monolingual English speakers
 - areas to be examined
 - other languages
 - developmental aspects
 - contradicting research results (Scanlan – Johnston 1997, Calderwood – Burton 2006)
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Experiment 1

Subjects and procedure

- W.S. Terry: *On the relative difficulty in recalling names and occupation (1994)*
 - the modifications
 - N = 30 (15 female, 15 male students)
 - 3rd grade (9–10 years old) students (Ferenc Kölcsey Reformed Practising Primary School, Debrecen, Hungary)
 - native Hungarian speakers
 - study sheet: 3 minutes (+ 1 extra minute if necessary) and test sheets: 3 minutes (+ 1 extra minute if necessary)
 - detailed verbal instructions
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Materials and design – study sheets



names	occupations	interests
<i>Asztalos Péter</i>	<i>asztalos</i> 'carpenter'	<i>zenélés</i> 'playing music'
<i>Szakács Anna</i>	<i>szakács</i> 'cook'	<i>fotózás</i> 'photography'
<i>Vadász Péter</i>	<i>vadász</i> 'hunter'	<i>versírás</i> 'writing poetry'
<i>Kertész Anna</i>	<i>kertész</i> 'gardener'	<i>táncolás</i> 'dancing'
<i>Halász Péter</i>	<i>halász</i> 'fisherman'	<i>barkácsolás</i> 'do-it-yourself'
<i>Bíró Anna</i>	<i>bíró</i> 'judge'	<i>zenehallgatás</i> 'listening to music'
<i>Pék Anna</i>	<i>pék</i> 'baker'	<i>olvasás</i> 'reading'
<i>Ács Péter</i>	<i>ács</i> 'carpenter'	<i>főzés</i> 'cooking'
<i>Katona Anna</i>	<i>katona</i> 'soldier'	<i>kézműveskedés</i> 'handicraft'
<i>Kőműves Péter</i>	<i>kőműves</i> 'mason'	<i>tévészés</i> 'watching TV'

Materials and design – study sheets

- between-groups design (2 groups)
 - every participant experiences only one condition
 - 1st group – only names (Group N) + interest
 - 2nd group – only occupations (Group O) + interest
- within-subjects design (1 group)
 - every participant experiences every condition
 - 3rd group – names and occupations as well (Group N+O) + interest

names	occupations	interests
<i>Asztalos Péter</i>	<i>asztalos</i> 'carpenter'	<i>zenélés</i> 'playing music'
<i>Szakács Anna</i>	<i>szakács</i> 'cook'	<i>fotózás</i> 'photography'
<i>Vadász Péter</i>	<i>vadász</i> 'hunter'	<i>versírás</i> 'writing poetry'
<i>Kertész Anna</i>	<i>kertész</i> 'gardener'	<i>táncolás</i> 'dancing'
<i>Halász Péter</i>	<i>halász</i> 'fisherman'	<i>barkácsolás</i> 'do-it-yourself'
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<i>Katona Anna</i>	<i>katona</i> 'soldier'	<i>kézműveskedés</i> 'handicraft'
<i>Kőműves Péter</i>	<i>kőműves</i> 'mason'	<i>tévészés</i> 'watching TV'

Study sheet – Group N



Asztalos Péter
zenélés



Szakács Anna
fotózás



Vadász Péter
versírás



Kertész Anna
táncolás



Halász Péter
barkácsolás



Bíró Anna
zenehallgatás



Pék Anna
olvasás



Ács Péter
főzés



Katona Anna
kézműveskedés



Kőműves Péter
tévészés

Materials and design – study sheets

Group N

- names + interests

Study sheet – Group O



asztalos
zenélés



szakács
fotózás



vadász
versírás



kertész
táncolás



halász
barkácsolás



bíró
zenehallgatás



pék
olvasás



ács
főzés



katona
kézműveskedés



kőműves
tévészés

Materials and design – study sheets

Group O

- occupations + interests

Study sheet – Group N+O (v1)



Asztalos Péter
zenélés



Szakács Anna
fotózás



vadász
versírás



kertész
táncolás



Halász Péter
barkácsolás



bíró
zenehallgatás



Pék Anna
olvasás



Ács Péter
főzés



katona
kézműveskedés



kőműves
tévészés

Materials and design – study sheets

Group N+O

- names + occupations + interests

Study sheet – Group N+O (v2)



asztalos
zenélés



szakács
fotózás



Vadász Péter
versírás



Kertész Anna
táncolás



halász
barkácsolás



Bíró Anna
zenehallgatás



pék
olvasás



ács
főzés



Katona Anna
kézműveskedés



Kőműves Péter
tévészés

Materials and design – study sheets

Group N+O

- names + occupations + interests

Test sheet 1



Materials and design – test sheets

Every group

- Write down what the interests of the following people are!

Test sheet 2



Materials and design – test sheets

Group N

- Write down what the **names** of the following people are!

Group O

- Write down what the **occupations** of the following people are!

Group N+O (v1/v2)

- 1. column: Write down what the **names/occupations** of the following people are!
- 2. column: Write down what the **occupations/names** of the following people are!

Mean percentage correct recall of names, occupations, and interests

Group N		Group O		Group N+O		
Name	Interest	Occupation	Interest	Name	Occupation	Interest
M = 76.87% (SD=19.6%)	M = 83.75% (SD=16.3%)	M = 81.87% (SD=14.2%)	M = 75.63% (SD=20.9%)	M = 60.00% (SD=21.9%)	M = 82.50% (SD=25.2%)	M = 68.75% SD=26.3%

Terry 1994

Group N		Group O		Group N+O		
Name	Interest	Occupation	Interest	Name	Occupation	Interest
M = 25.00% (SD=17.8%)	M = 69.00% (SD=19.7%)	M = 68.00% (SD=19.3%)	M = 57.00% (SD=18.3%)	M = 18.00% (SD=12.9%)	M = 36.00% (SD=13.2%)	M = 53.00% (SD=22.6%)

Reszegi – Kenyhercz 2024

Note: N = name; O = occupation; N+O = name plus occupation; M = mean; SD = Standard Deviation.

ANOVA (Analysis of Variance)

1. recalling names versus occupations in the between-groups design

	Terry 1994	Reszegi – Kenyhercz 2024
Group N	recalling names: M = 76.87%	recalling names: M = 25.00%
Group O	recalling occupations: M = 81.87%	recalling occupations: M = 68.00%



$$F(1, 14) < 1 / F_{crit} = 4,600109937$$

$$p = 0,334$$



$$F(1, 18) = 26.8 / F_{crit} = 4,413873419$$

$$p < 0.001$$

the difference in recall interest between Group N (M = 69.00%) and Group O (M = 57.00%):

$$F(2, 27) = 1.68 / F_{crit} = 3,354130829$$

$$p = 0.204$$

Note: F = F -distribution (with degrees of freedom); F_{crit} = critical value for statistical significance in an F -test; p = probability ($\alpha = 0,05$)

ANOVA (Analysis of Variance)

2. recalling names versus occupations in the within-groups design

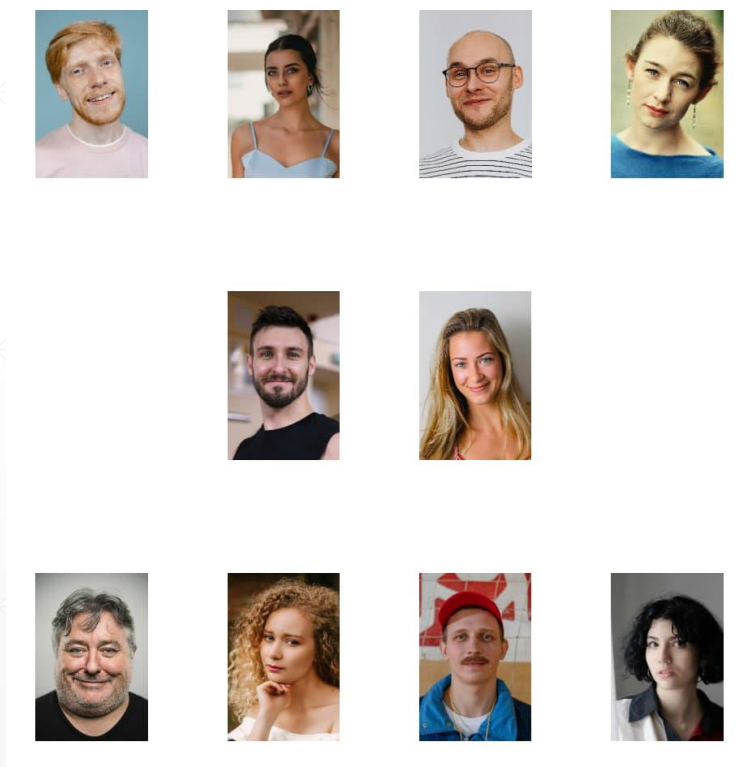
	Terry 1994	Reszegi – Kenyhercz 2024
Group N+O	recalling names: M = 60.00%	recalling names: M = 18.00%
	recalling occupations: M = 82.50%	recalling occupations: M = 36.00%

$F(1, 14) = 9.00 / F_{crit} = 4,600109937$ $p = 0,010$	$F(1, 18) = 2.39 / F_{crit} = 4,413873419$ $p = 0.140$
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Note: F = F -distribution (with degrees of freedom); F_{crit} = critical value for statistical significance in an F -test; p = probability ($\alpha = 0,05$)

Experiment 2

Materials and design – study sheets



descriptive names	non-descriptive names	physical feature
<i>Vörös Péter</i> 'red'	<i>Fekete Péter</i> 'black'	<i>magas</i> 'tall'
<i>Vékony Anna</i> 'thin'	<i>Vörös Anna</i> 'red'	<i>alacsony</i> 'short'
<i>Kopasz Péter</i> 'bald'	<i>Barna Péter</i> 'brown'	<i>sovány</i> 'thin'
<i>Barna Anna</i> 'brown'	<i>Kopasz Anna</i> 'bald'	<i>karcsú</i> 'slim'
<i>Szakáll Péter</i> 'beard(ed)'	<i>Göndör Péter</i> 'curly'	<i>erős</i> 'strong'
<i>Szőke Anna</i> 'blond'	<i>Kövér Anna</i> 'fat'	<i>mosolygós</i> 'smiling'
<i>Kövér Péter</i> 'fat'	<i>Vékony Péter</i> 'thin'	<i>ősz</i> 'silver-headed'
<i>Göndör Anna</i> 'curly'	<i>Bajusz Anna</i> 'moustache(d)'	<i>csinos</i> 'pretty'
<i>Bajusz Péter</i> 'moustache(d)'	<i>Szőke Péter</i> 'blond'	<i>sportos</i> 'sporty'
<i>Fekete Anna</i> 'black'	<i>Szakáll Anna</i> 'beard(ed)'	<i>hajlékony</i> 'flexible'

Materials and design – study sheets

- between-groups design (2 groups)
 - every participant experiences only one condition
 - 1st group – only descriptive names (Group DN) + physical features
 - 2nd group – only non-descriptive names (Group NDN) + physical features
- within-subjects design (1 group)
 - every participant experiences every condition
 - 3rd group – descriptive and non-descriptive names as well (Group DN+NDN) + physical features

descriptive names	non-descriptive names	physical feature
<i>Vörös Péter</i> 'red'	<i>Fekete Péter</i> 'black'	<i>magas</i> 'tall'
<i>Vékony Anna</i> 'thin'	<i>Vörös Anna</i> 'red'	<i>alacsony</i> 'short'
<i>Kopasz Péter</i> 'bald'	<i>Barna Péter</i> 'brown'	<i>sovány</i> 'thin'
<i>Barna Anna</i> 'brown'	<i>Kopasz Anna</i> 'bald'	<i>karcsú</i> 'slim'
<i>Szakáll Péter</i> 'beard(ed)'	<i>Göndör Péter</i> 'curly'	<i>erős</i> 'strong'
<i>Szőke Anna</i> 'blond'	<i>Kövér Anna</i> 'fat'	<i>mosolygós</i> 'smiling'
<i>Kövér Péter</i> 'fat'	<i>Vékony Péter</i> 'thin'	<i>ősz</i> 'silver-headed'
<i>Göndör Anna</i> 'curly'	<i>Bajusz Anna</i> 'moustache(d)'	<i>csinos</i> 'pretty'
<i>Bajusz Péter</i> 'moustache(d)'	<i>Szőke Péter</i> 'blond'	<i>sportos</i> 'sporty'
<i>Fekete Anna</i> 'black'	<i>Szakáll Anna</i> 'beard(ed)'	<i>hajlékony</i> 'flexible'

Mean percentage correct recall of descriptive names, non-descriptive names, and physical features

Group DN		Group NDN		Group DN+NDN		
Descriptive name	Physical feature	Non-descriptive name	Physical feature	Descriptive name	Non-descriptive name	Physical feature
M = 54.00% (SD=25.9%)	M = 76.00% (SD=24.6%)	M = 44.00% (SD=19.0%)	M = 85.00% (SD=8.5%)	M = 28.00% (SD=13.5%)	M = 30.00% (SD=17.2%)	M = 80.00% (SD=10.5%)
F(1, 18) = 12.9 p = 0.002		F(1, 18) = 38.9 p < 0.001		F(1, 28) = 151 p < 0.001		
F(1, 18) = 0.970 p = 0.338					F(1, 18) = 0.0210 p = 0.886	

Note: DN = descriptive name; NDN = non-descriptive name; DN+NDN = descriptive name plus non-descriptive name

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