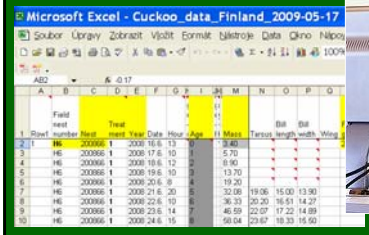
Jak (ne)napsat odborný text?



Tomáš Grim

Katedra zoologie a Ornitologická laboratoř
Univerzita Palackého, Olomouc

Publish or perish ► Publish & flourish

„Omlouvám se za tak dlouhý dopis, neměl jsem čas napsat kratší.“

(B. Pascal)

- nepublikované výsledky neexistují
- je mnoho způsobů psaní ... které nefungují

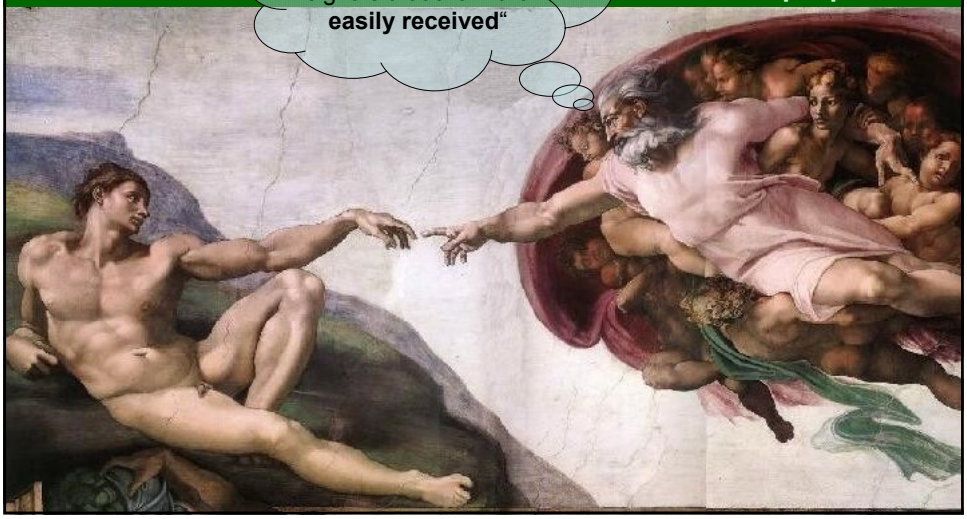
- následující platí (většinou) pro *jakýkoli* text!

Leitmotiv – receiver psychology

nabídka

„Signallers will be selected to produce signals that are more **easily received**“

poptávka



Autorství

- „autorský autismus“ *vs.* dělba práce
- autorství vs. „Poděkování“
- pořadí autorů
- „první píše“
- zodpovědnost
- myšlenky *vs.* sběr dat

Authorship credit should be based only on substantial contributions to (a) conception and design, or analysis and interpretation of data; and to (b) drafting the article or revising it critically for important intellectual content; and on (c) final approval of the version to be published. Conditions (a), (b), and (c) must all be met. Participation solely in the acquisition of funding or the collection of data does not justify authorship. General supervision of the research group is not sufficient for authorship. Any part of an article critical to its main conclusions must be the responsibility of at least one author.

Uniform requirements for manuscripts submitted to biomedical journals

International Committee of Medical Journal Editors

ICMJE 1999: Med. Educ. (http://www.icmje.org/)

Autorství

- myšlenky *vs*. sběr dat

away from the states that were functional in a former ecological context.

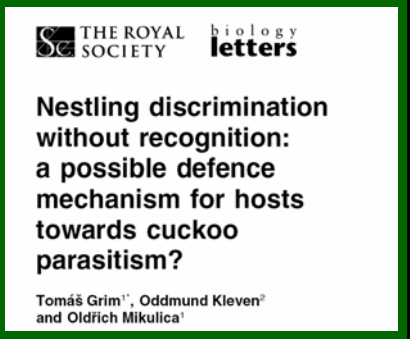
I thank A. Lahti for aiding in the development of the project from the start and performing all field measurements; R. Payne for extensive

Lahti 2005: PNAS

Obsah

Význam výsledků

- autoři **přeceňují** význam své práce
  - až 95% MS „rejected“



- autoři často **neví**, co jejich data říkají:
  - Živa 1993 *vs.* Proc. R. Soc. 2003

Dlouhodobé pozorování vědců a sebereflexe☺

Význam výsledků

Horsfield's Hawk-Cuckoo Nestlings Simulate Multiple Gapes for Begging

Keita D. Tanaka* and Keisuke Ueda

Nestlings of some brood parasitic birds evict hosts' eggs and young soon after hatching, thereby avoiding discrimination by their hosts while monopolizing parental care (*1*, *2*). However, eviction carries a cost, because lone parasitic nestlings attract a reduced provisioning rate (*2*, *3*) and need to beg with supernormal signals (*2*). For example, in the case of the common cuckoo *Cuculus canorus*, a nestling begs with extremely intense begging calls to compensate for the deficient visual stimulus associated with the display of its single gape, which is smaller in total area than the gapes of a whole brood of host chicks (*2*), although the cuckoo chick itself is much larger than a host chick and requires proportionately more food.

With chicks of the evicting Horsfield's parents would reduce their provisioning rates when we dyed the patches black. As expected, the provisioning rates decreased only

(*4*), a hawk-cuckoo chick is likely to induce overestimation of brood size by simulating a begging gape with the patch. Although a wing patch is not gape-shaped (Fig. 1A), it may be that host parents misperceive it as a gape because the inside of the nests built by three host species are typically dark (*4*). The decreased visibility in the dark nests may make host parents incapable of distinguishing between an actual gape and something that is gape-colored and moving like a begging chick.

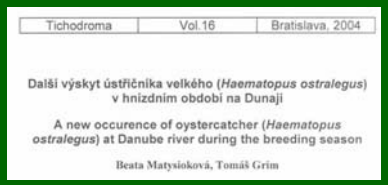
Whereas the common cuckoo chick relies on vocal trickery, the Horsfield's hawk-cuckoo uses visual begging tricks to better exploit its hosts, perhaps because the nest sites of its hosts are more vulnerable to predators. Three host

Tanaka & Ueda 2005: Science

Yoshino 1999

Význam výsledků

- např. obyčejné pozorování:
- kos na zahradě ► mlčet
- ústřičník na Dunaji ►


Tichodroma | Vol.16 | Bratislava, 2004

Další výskyt ústřičníka velkého (*Haematopus ostralegus*) v hnízdním období na Dunaji

A new occurence of oystercatcher (*Haematopus ostralegus*) at Danube river during the breeding season

Beata Matysioková, Tomáš Grim

- lelek bělokřídlý ►


The Wilson Journal of Ornithology 118(1):109–112, 2006

A New Record of the Endangered White-winged Nightjar (*Eleothreptus candicans*) from Beni, Bolivia

Tomáš Grim[1,3] and Radim Šumbera[2]

- datel knížecí ►

Co chci sdělit?

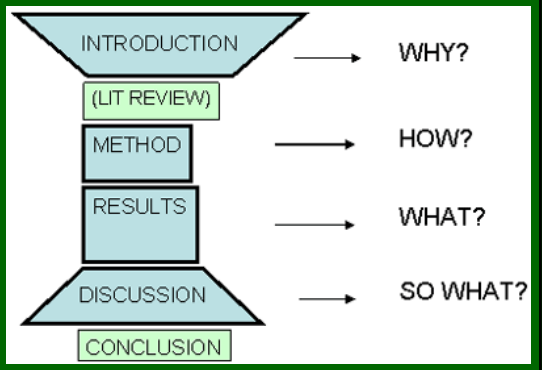
- take-home message

- „Who cares?“ – Koho to bude zajímat?
- „So what?“ – Proč je to zajímavé?
- „zatím nevíme ...“
- ... nic☺

Day & Gastel 2006: How to write and publish scientific paper. G. Press.

IMRAD – pořadí částí

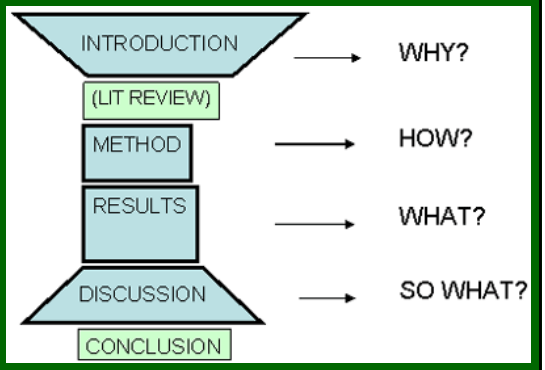
- Title
- Authors
- Abstract
- **I**ntroduction
- **M**ethods
- **R**esults
- **D**iscussion
- Acknowledg(e)ments
- References



O'Connor 1991: Writing Successfully in Science. Routledge.

IMRAD *vs.* pořadí psaní!

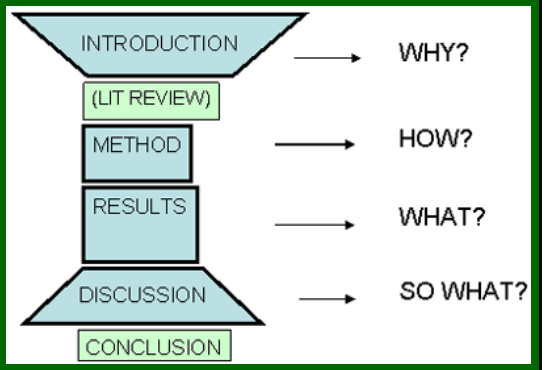
6. Title
- Authors
5. Abstract
4. Introduction
1. Methods
2. Results
3. Discussion
- Acknowledg(e)ments
7. References



O'Connor 1991: Writing Successfully in Science. Routledge.

IMRAD *vs.* pořadí čtení!

1. Title
- Authors
2. Abstract
5. Introduction
6. Methods
3. Results (Fig...)
4. Discussion
- Acknowledg(e)ments
7. References



O'Connor 1991: Writing Successfully in Science. Routledge.

Efekt(iv)ní název

NEST MONITORING DOES NOT INCREASE NEST PREDATION IN OPEN-NESTING SONGBIRDS: INFERENCE FROM CONTINUOUS NEST-SURVIVAL DATA

KAREL WEIDINGER[1]

Begging intensity of nestling birds varies with sibling relatedness

JAMES V. BRISKIE[1]†, CHRISTOPHER T. NAUGLER[2] AND SUSAN M. LEECH[2]

The evolution of nestling discrimination by hosts of parasitic birds: why is rejection so rare?

Tomáš Grim*

Experimentally Constrained Virulence is Costly for Common Cuckoo Chicks

Tomáš Grim*, Jarkko Rutila†, Phillip Cassey‡ & Mark E. Hauber§¶

Listování časopisama

Efekt(iv)ní název

Drdová L. & Hampl R. : Potenciální hnízdní predátoři vodních ptáků a metody jejich zjišťování

Kverek P., Storchová R., Reif J. & Nachman M. W. : Výskyt kříženec slavíka obecného (*Luscinia megarhynchos*) a slavíka tmavého (*Luscinia luscinia*) na území České republiky potvrzen genetickou analýzou

Strachoňová Z. : Hnízdní biologie pěvců v urbánním prostředí města Olomouce

Kopij G. : Hnízdní hustota a výběr hnízdního prostředí rorýse obecného (*Apus apus*) ve Vratislavi

Matysioková B. & Tobółka M.: Co ovlivňuje délku pobytu v teritoriu po vyhnízdění u čápa bílého (*Ciconia ciconia*)?

Zárybnická M.: Cirkadiánní aktivita sýce rousného (*Aegolius funereus*) v Krušných horách: efekt rozdílných rodičovských rolí

Hořák D. & Klvaňa P.: Osvojení cizího vejce během parazitační události u poláka chocholačky (*Aythya fuligula*)

Kondělka D. & Petro R.: Prvé známé případy prokázaného hnízdění jeřába popelavého (*Grus grus*) na Moravě a ve Slezsku

Sylvia 2008

Efekt(iv)ní název

Editorial

Donald A. Windsor

Equal Rights for Parasites

Equal rights for chick brood parasites

Tomáš Grim

Positive effects of alcohol on creativity: I drink, therefore I die – alcohol and n(d)umbness

"[*Scientific*] *ideas are blossoms of virtue that fail to open their petals and wilt quickly in the fumes of boisterous partying.*" Ramón y Cajal [1897] (1999, p. 101)

I drink, therefore I am: alcohol and creativity

Allan Beveridge MPhil FRCPsych Graeme Yorston BSc MRCPsych[1]

Listování časopisama

Efekt(iv)ní název

- maximální stručnost

- **balast**:
  - „Studie...“
  - „Pozorování...“
  - „*Významný* vliv...“
  - (lokalita)
  - čas
  - (*modelový* taxon)
- **klíčová slova**:
  - experimentální
  - důkaz
  - první (hnízdění ...)
  - vliv
  - rozdíl
  - nový (*vs*. replikace!)

Abstrakt

- ≠ summary!
- abstrakt = zkrácená verze článku
- mini-úvod, (metodika), výsledky, implikace
- max. 200 (250) slov

- klíčová slova

- pozor na formulace: suggests *vs*. indicates

Internet: veřejně přístupné abstrakty většiny článků

Abstrakt – klíčová slova + příběh!

Experimental evidence for chick discrimination without recognition in a brood parasite host

Recognition is considered a critical basis for discriminatory behaviours in animals. Theoretically, recognition and discrimination of parasitic chicks are not predicted to evolve in hosts of brood parasitic birds that evict nest-mates. Yet, an earlier study showed that host reed warblers (*Acrocephalus scirpaceus*) of an evicting parasite, the common cuckoo (*Cuculus canorus*), can avoid the costs of prolonged care for unrelated young by deserting the cuckoo chick before it fledges. Desertion was not based on specific recognition of the parasite because hosts accept any chick cross-fostered into their nests. Thus, the mechanism of this adaptive host response remains enigmatic. Here, I show experimentally that the cue triggering this 'discrimination without recognition' behaviour is the duration of parental care. Neither the intensity of brood care nor the presence of a single-chick in the nest could explain desertions. Hosts responded similarly to foreign chicks, whether heterospecific or experimental conspecifics. The proposed mechanism of discrimination strikingly differs from those found in other parasite–host systems because hosts do not need an internal recognition template of the parasite's appearance to effectively discriminate. Thus, host defences against parasitic chicks may be based upon mechanisms qualitatively different from those operating against parasitic eggs. I also demonstrate that this discriminatory mechanism is non-costly in terms of recognition errors. Comparative data strongly suggest that parasites cannot counter-evolve any adaptation to mitigate effects of this host defence. These findings have crucial implications for the process and end-result of host–parasite arms races and our understanding of the cognitive basis of discriminatory mechanisms in general.

Keywords: brood parasitism; coevolution; discrimination; mechanism; recognition

Grim 2007: Proc. R. Soc. Lond. B

Abstrakt – klíčová slova + příběh!

Experimental evidence for chick discrimination without recognition in a brood parasite host

Recognition is considered a critical basis for discriminatory behaviours in animals. Theoretically, recognition and discrimination of parasitic chicks are not predicted to evolve in hosts of brood parasitic birds that evict nest-mates. Yet, an earlier study showed that host reed warblers (*Acrocephalus scirpaceus*) of an evicting parasite, the common cuckoo (*Cuculus canorus*), can avoid the costs of prolonged care for unrelated young by deserting the cuckoo chick before it fledges. Desertion was not based on specific recognition of the parasite because hosts accept any chick cross-fostered into their nests. Thus, the mechanism of this adaptive host response remains enigmatic. Here, I show experimentally that the cue triggering this 'discrimination without recognition' behaviour is the duration of parental care. Neither the intensity of brood care nor the presence of a single-chick in the nest could explain desertions. Hosts responded similarly to foreign chicks, whether heterospecific or experimental conspecifics. The proposed mechanism of discrimination strikingly differs from those found in other parasite–host systems because hosts do not need an internal recognition template of the parasite's appearance to effectively discriminate. Thus, host defences against parasitic chicks may be based upon mechanisms qualitatively different from those operating against parasitic eggs. I also demonstrate that this discriminatory mechanism is non-costly in terms of recognition errors. Comparative data strongly suggest that parasites cannot counter-evolve any adaptation to mitigate effects of this host defence. These findings have crucial implications for the process and end-result of host–parasite arms races and our understanding of the cognitive basis of discriminatory mechanisms in general.

Keywords: brood parasitism; coevolution; discrimination; mechanism; recognition

Grim 2007: Proc. R. Soc. Lond. B

Abstrakt – klíčová slova + příběh!

Signals of need in parent–offspring communication and their exploitation by the common cuckoo

R. M. Kilner, D. G. Noble & N. B. Davies

Department of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ, UK

Nestling birds present vivid gapes and produce loud calls as they solicit food, but the complexity of the display is poorly understood. Here we explain the function of reed warbler begging signals and show how they are exploited by the common cuckoo, *Cuculus canorus*, a brood parasite. Reed warbler parents integrate visual and vocal signals from their young to adjust their provisioning rates, and the two signals convey more accurate information about offspring need than either does alone. The cuckoo chick has a particularly striking begging display which has been suggested to be irresistible to host parents. However, we show that the cuckoo, reared alone in the nest, presents a deficient visual display, and elicits the same amount of care as a reed warbler brood only by compensating with its exaggerated vocal display. Therefore the cuckoo succeeds not through mimicry of the host brood begging signals, but by tuning into the sensory predispositions of its hosts.

Kilner et al. 1999: Nature

Abstrakt – klíčová slova + příběh!

Signals of need in parent–offspring communication and their exploitation by the common cuckoo

R. M. Kilner, D. G. Noble & N. B. Davies

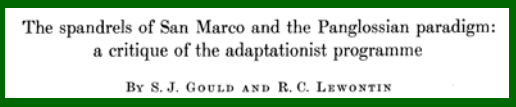
Department of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ, UK

Nestling birds present vivid gapes and produce loud calls as they solicit food, but the complexity of the display is poorly understood. Here we explain the function of reed warbler begging signals and show how they are exploited by the common cuckoo, *Cuculus canorus*, a brood parasite. Reed warbler parents integrate visual and vocal signals from their young to adjust their provisioning rates, and the two signals convey more accurate information about offspring need than either does alone. The cuckoo chick has a particularly striking begging display which has been suggested to be irresistible to host parents. However, we show that the cuckoo, reared alone in the nest, presents a deficient visual display, and elicits the same amount of care as a reed warbler brood only by compensating with its exaggerated vocal display. Therefore the cuckoo succeeds not through mimicry of the host brood begging signals, but by tuning into the sensory predispositions of its hosts.

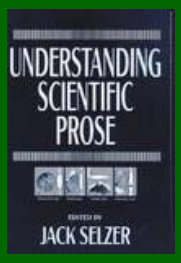
Kilner et al. 1999: Nature

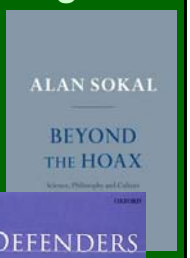
Abstrakt – různá slova = různé úkoly!

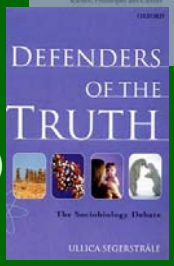
- hledání: (((cuckoo) bird) animal) + recogn*
- klíčová slova se opakují!


The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist programme

By S. J. Gould and R. C. Lewontin







- funkce slov:
  - ➢ informovat (desertion, begging, ...)
  - ➢ přilákat (recognition template, ...)
  - ➢ manipulovat (striking, crucial, enigmatic,...)

Grim 2009: Web Ecol.

Úvod

- proč je to zajímavé?
- co už víme?
- co nevíme a *chceme* vědět?

- obecné ► konkrétní
- běžné ► vzácné
- starší ► novější

- obecný problém *vs*. konkrétní taxon

Číst publikovanou literaturu z oboru ► „background“

Úvod

- *poslední* odstavec/ce:
  - ➢ jakou hypotézu testujeme?
  - ➢ co predikujeme?
  - ➢ efekt: směr, kvantita

- ➢ „… whether there is *any* difference …“
- ➢ „... we predicted correlation ...“ 

Číst publikovanou literaturu z oboru ► „background“

Metodika

- kdy? (měsíce, roky)
- kde? (koordináty)
- jak?

- **replikovatelnost**

Sutherland et al. 2004: Bird Ecology and Conservation. Oxford.

Metodika

- délka zobáku = ?
- hatching day = day 0 (nebo 1?)
- sepsat než jdete do terénu!

... a mnohé další metodické příručky

Metodika – statistika

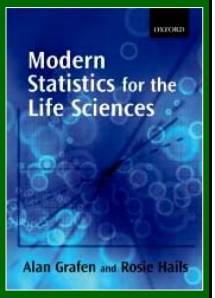
- explanatory variables
- response variables
- confounding variables

- *fixed effects*: treatment, ...
- *covariates*: date in season (centred within year!), quadratic term (interakce), ...
- *random effects*: population, year (nominal!), nestling id, brood id, (nested effects)

Grafen and Hails 2002: Modern statistics for the life sciences. Oxford UP

Metodika – statistika

- multikolinearita
- jak vybrán MAM: backward elimination, AIC_C
- kontrola MAM:
  - ➢ linearity of effect
  - ➢ normality of error
  - ➢ homogeneity of variance



Grafen and Hails 2002: Modern statistics for the life sciences. Oxford UP

Metodika – statistika

- $P < 0.05$ ≠ ponechat proměnnou v modelu
- $P > 0.05$ ≠ vyjmout proměnnou z modelu
- náhodné efekty = *hypotézy* o závislosti dat!
- *a priorní* konzervativní rozhodnutí

[Additional to statistics in ecology, there should be] "much more emphasis on thinking" (Burnham & Anderson 2002).

Bolker et al. 2009: Trends Ecol. Evol.

Metodika – statistika

- vyrovnanost vzorku

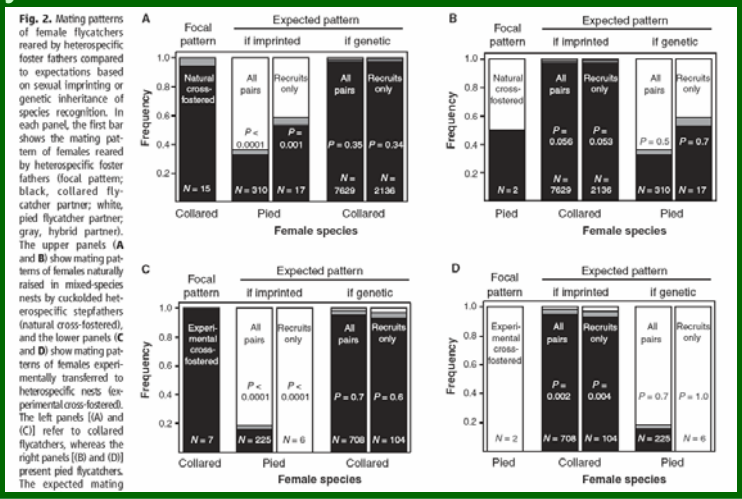


Fig. 2. Mating patterns of female flycatchers reared by heterospecific foster fathers compared to expectations based on sexual imprinting or genetic inheritance of species recognition. In each panel, the first bar shows the mating pattern of females reared by heterospecific foster fathers (focal pattern; black, collared flycatcher partner; white, pied flycatcher partner; gray, hybrid partner). The upper panels (**A** and **B**) show mating patterns of females naturally raised in mixed-species nests by cuckolded heterospecific stepfathers (natural cross-fostered), and the lower panels (**C** and **D**) show mating patterns of females experimentally transferred to heterospecific nests (experimental cross-fostered). The left panels ((A) and (C)) refer to collared flycatchers, whereas the right panels ((B) and (D)) present pied flycatchers. The expected mating

Saether et al. 2007: Science

Metodika – statistika

- velikost vzorku

Zdroj	n	časopis
Brooke & Davies (1988)	4	Nature
Tanaka & Ueda (2005)	6	Science
Badyaev et al. (2002, Fig. 2c)	10	Evolution
Kilner et al. (2004)	10	Science
Albrecht et al. (2006)	12	Am. Nat.

Zdroj - meta-analýzy	n (median)	vzorek	časopis
Peek et al. (2003)	25	181	Oecologia
Nakagawa et al. (2007)	25	76	Behav. Ecol.
Garamszegi & Møller (2004)	20	21	Behav. Ecol.
Grim et al. (in prep.)	10	278	

Metodika – statistika

- reprezentativnost vzorku ➢ generalizace

bird!!!

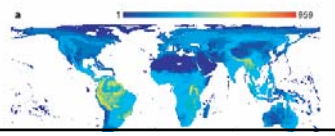
nature Vol 436|18 August 2005|doi:10.1038/nature03850

LETTERS

Global hotspots of species richness are not congruent with endemism or threat

C. David L. Orme[1], Richard G. Davies[3], Malcolm Burgess[1], Felix Eigenbrod[1], Nicola Pickup[1], Valerie A. Olson[4], Andrea J. Webster[5], Tzung-Su Ding[6], Pamela C. Rasmussen[7], Robert S. Ridgely[8], Ali J. Stattersfield[9], Peter M. Bennett[4], Tim M. Blackburn[5], Kevin J. Gaston[3] & Ian P. F. Owens[1,2]

Biodiversity hotspots have a prominent role in conservation biology[1–9], but it remains controversial to what extent different types of hotspot are congruent[4,10–14]. Previous studies were unable to provide a general answer because they used a single biodiversity index, were geographically restricted, compared areas of unequal size or did not quantitatively compare hotspot types[1–10,12–22]. Here we use a new global database on the breeding distribution of all known extant bird species to test for congruence across three types of hotspot. We demonstrate that hotspots of species richness, threat and endemism do not show the same geographical distribution. Only 2.5% of hotspot areas are common to all three aspects of diversity, with over 80% of hotspots being idiosyncratic. More generally, there is a surprisingly low overall congruence of biodiversity indices, with any one index explaining less than 24% of variation in the other indices. These results suggest that, even species richness were grouped into nine distinct biogeographic regions (Fig. 2a), whereas threat hotspots were aggregated into ten regions (Fig. 2b), and endemism hotspots were aggregated in twenty biogeographic regions (Fig. 2c).



Metodika – statistika

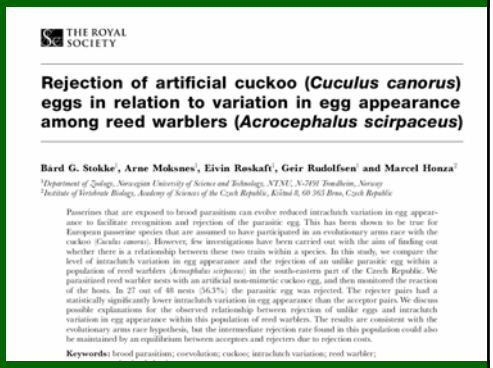
- co je lepší: vzorek 34 nebo 340?
- variabilita prediktorů

"… good design can make such a difference to how big the sample must be"
(Martin & Bateson 2008)

Grim 2005: Biol. J. Linn. Soc., Grim 2005: Auk 2005

Metodika – statistika

- variabilita prediktorů
- matoucí proměnná: věk
- datum hnízdění – *korelát* věku



THE ROYAL SOCIETY

Rejection of artificial cuckoo (*Cuculus canorus*) eggs in relation to variation in egg appearance among reed warblers (*Acrocephalus scirpaceus*)

Bård G. Stokke[1], Arne Moksnes[1], Eivin Røskaft[1], Geir Rudolfsen[1] and Marcel Honza[2]

[1]*Department of Zoology, Norwegian University of Science and Technology, NTNU, N-7491 Trondheim, Norway*
[2]*Institute of Vertebrate Biology, Academy of Sciences of the Czech Republic, Květná 8, 60 365 Brno, Czech Republic*

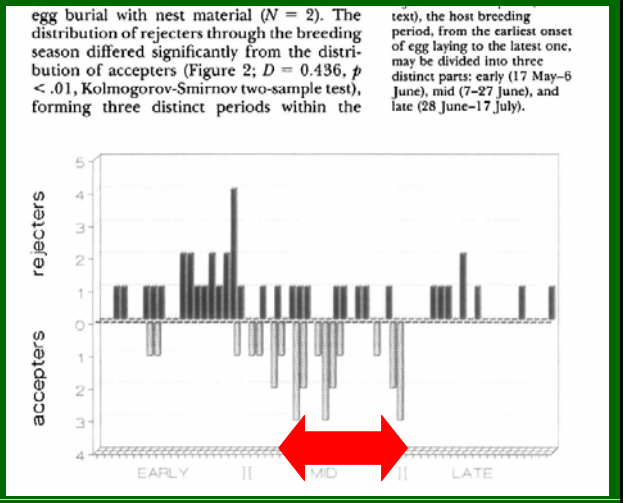
Passerines that are exposed to brood parasitism can evolve reduced intraclutch variation in egg appearance to facilitate recognition and rejection of the parasitic egg. This has been shown to be true for European passerine species that are assumed to have participated in an evolutionary arms race with the cuckoo (*Cuculus canorus*). However, few investigations have been carried out with the aim of finding out whether there is a relationship between these two traits within a species. In this study, we compare the level of intraclutch variation in egg appearance and the rejection of an unlike parasitic egg within a population of reed warblers (*Acrocephalus scirpaceus*) in the south-eastern part of the Czech Republic. We parasitized reed warbler nests with an artificial non-mimetic cuckoo egg, and then monitored the reaction of the hosts. In 27 out of 48 nests (56.3%) the parasitic egg was rejected. The rejecter pairs had a statistically significantly lower intraclutch variation in egg appearance than the acceptor pairs. We discuss possible explanations for the observed relationship between rejection of unlike eggs and intraclutch variation in egg appearance within this population of reed warblers. The results are consistent with the evolutionary arms race hypothesis, but the intermediate rejection rate found in this population could also be maintained by an equilibrium between acceptors and rejecters due to rejection costs.

Keywords: brood parasitism; coevolution; cuckoo; intraclutch variation; reed warbler;

Stokke et al. 1999: Proc. R. Soc. Lond. B

Metodika – statistika

- variabilita prediktorů
- jiný druh
- jiná lokalita
- jiná historie
- (?), …

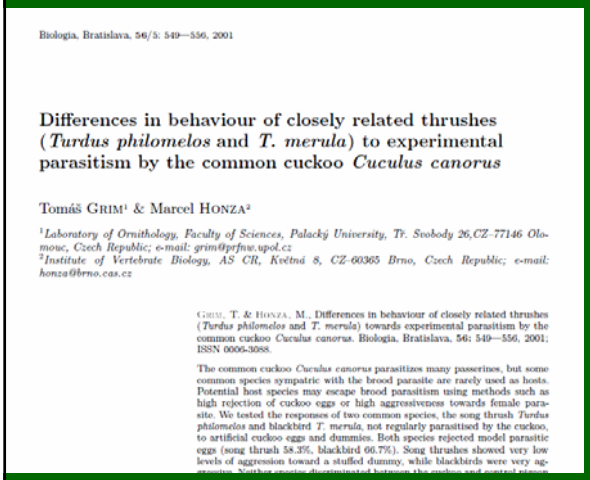


egg burial with nest material ($N = 2$). The distribution of rejecters through the breeding season differed significantly from the distribution of accepters (Figure 2; $D = 0.436$, $p < .01$, Kolmogorov-Smirnov two-sample test), forming three distinct periods within the text), the host breeding period, from the earliest onset of egg laying to the latest one, may be divided into three distinct parts: early (17 May–6 June), mid (7–27 June), and late (28 June–17 July).

Lotem et al. 1992: Behav. Ecol.

Metodika – statistika

- malý vzorek ≠ chybný výsledek, ale nejistota



Biologia, Bratislava, 56/5: 549—556, 2001

Differences in behaviour of closely related thrushes (*Turdus philomelos* and *T. merula*) to experimental parasitism by the common cuckoo *Cuculus canorus*

Tomáš GRIM[1] & Marcel HONZA[2]

[1]*Laboratory of Ornithology, Faculty of Sciences, Palacký University, Tř. Svobody 26,CZ-77146 Olomouc, Czech Republic; e-mail: grim@prfnw.upol.cz*
[2]*Institute of Vertebrate Biology, AS CR, Květná 8, CZ-60365 Brno, Czech Republic; e-mail: honza@brno.cas.cz*

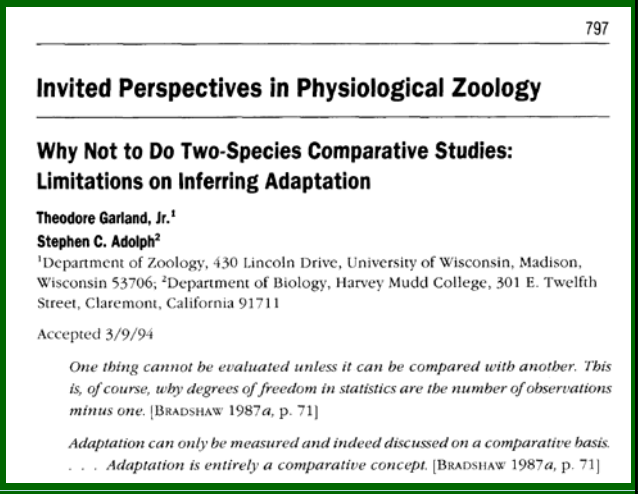
GRIM, T. & HONZA, M., Differences in behaviour of closely related thrushes (*Turdus philomelos* and *T. merula*) towards experimental parasitism by the common cuckoo *Cuculus canorus*. Biologia, Bratislava, 56: 549—556, 2001; ISSN 0006-3088.

The common cuckoo *Cuculus canorus* parasitizes many passerines, but some common species sympatric with the brood parasite are rarely used as hosts. Potential host species may escape brood parasitism using methods such as high rejection of cuckoo eggs or high aggressiveness towards female parasite. We tested the responses of two common species, the song thrush *Turdus philomelos* and blackbird *T. merula*, not regularly parasitised by the cuckoo, to artificial cuckoo eggs and dummies. Both species rejected model parasitic eggs (song thrush 58.3%, blackbird 66.7%). Song thrushes showed very low levels of aggression toward a stuffed dummy, while blackbirds were very ag-

Grim & Honza 2001: Biologia, Grim et al. (MSa,b)

Metodika

- srovnávání *dvou* populací, druhů, ...



Invited Perspectives in Physiological Zoology

Why Not to Do Two-Species Comparative Studies: Limitations on Inferring Adaptation

Theodore Garland, Jr.[1]
Stephen C. Adolph[2]
[1]Department of Zoology, 430 Lincoln Drive, University of Wisconsin, Madison, Wisconsin 53706; [2]Department of Biology, Harvey Mudd College, 301 E. Twelfth Street, Claremont, California 91711

Accepted 3/9/94

One thing cannot be evaluated unless it can be compared with another. This is, of course, why degrees of freedom in statistics are the number of observations minus one. [BRADSHAW 1987*a*, p. 71]

Adaptation can only be measured and indeed discussed on a comparative basis. . . . Adaptation is entirely a comparative concept. [BRADSHAW 1987*a*, p. 71]

Grafen and Hails 2002: Modern statistics for the life sciences. Oxford UP

Metodika

- srovnávání *dvou* X = pseudoreplikace!
- statistická chyba (*ne* chyba designu!)
- „location difference“; obecnost inference

Ecological Monographs, 54(2), 1984, pp. 187–211

PSEUDOREPLICATION AND THE DESIGN OF ECOLOGICAL FIELD EXPERIMENTS[1]

STUART H. HURLBERT
Department of Biology, San Diego State University, San Diego, California 92182 USA

Abstract. Pseudoreplication is defined as the use of inferential statistics to test for treatment effects with data from experiments where either treatments are not replicated (though samples may be) or replicates are not statistically independent. In ANOVA terminology, it is the testing for treatment effects with an error term inappropriate to the hypothesis being considered. Scrutiny of 176 exper-

Hurlbert 1984: Ecol. Monogr.

Metodika

- srovnávání *dvou* X = pseudoreplikace!

FOLIA ZOOLOGICA - 45(1): 31-34 (1996)

EFFECT OF HABITAT ON THE DIET OF REED WARBLER (ACROCEPHALUS SCIRPACEUS) NESTLINGS

Tomáš GRIM and Marcel HONZA

Received August 21, 1995
Accepted January 16, 1996

Institute of Landscape Ecology, Academy of Sciences of the Czech Republic, Brno

Abstract

The diet of reed warblers (*Acrocepha*
tern part of the Czech Republic. Fo
stlings in the breeding season of 1
Diptera (66.5%), Homoptera (12.7%

Ecology, 88(4), 2007, pp. 882–890

INCREASED SEDENTARINESS IN EUROPEAN BLACKBIRDS FOLLOWING URBANIZATION: A CONSEQUENCE OF LOCAL ADAPTATION?

JESKO PARTECKE[1] AND EBERHARD GWINNER[2]
Max Planck Institute for Ornithology, Von-der-Tannstrasse 7, 82346 Andechs/Erling, Germany

Abstract. Urbanization changes local environmental conditions and may lead to altered selection regimes for life history traits of organisms thriving in cities. Previous studies have reported changes in breeding phenology and even trends toward increased sedentariness in migratory bird species colonizing urban areas. However, does the change in migratory

Hurlbert 1984: Ecol. Monogr.

Metodika

- srovnávání *dvou* X = pseudoreplikace!

RESEARCH PAPERS

Why Does the Frequency of Nest Parasitism by the Cuckoo Differ Considerably Between Two Populations of Warblers Living in the Same Habitat?

Andrzej Dyrcz & Konrad Halupka

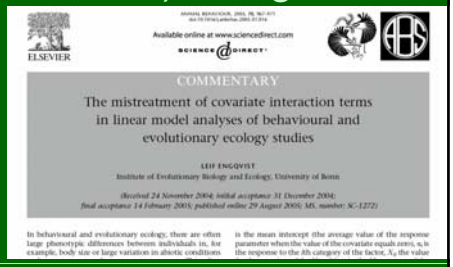
Department of Avian Ecology, University of Wroclaw, Wroclaw, Poland

Parent birds were not marked individually. To avoid pseudoreplication (i.e. testing the same individual more than once), we studied each species only within a single season and refrained from repetitive nest searching in the same reed-bed.

Dyrcz & Halupka 2007: Ethology

Metodika

- interakce
- ~30% článků s nesignif. interakcí chybně!
- ~50% článků se signif. interakcí chybně interpretováno!
- Badyaev et al. (Evolution 2003), Langmore et al. (Evolution 2008)



ELSEVIER

Available online at www.sciencedirect.com

SCIENCE DIRECT

COMMENTARY

The mistreatment of covariate interaction terms in linear model analyses of behavioural and evolutionary ecology studies

LEIF ENGQVIST

Institute of Evolutionary Biology and Ecology, University of Bonn

Grafen and Hails 2002: Modern statistics for the life sciences. Oxford UP

Výsledky

- co potřebuje čtenář vědět?

Table 5. Tests of the relationship between nestling age and effect size for four nestling traits. Negative parameter (regression coefficient) means that the correlation between egg size and nestling trait decreases as the young grow older. The body mass model included interaction between predictor (egg size or parental quality) and chick age. All other tests were only based on egg size as a predictor. See text for further details. F = test statistic, NDF = numerator degrees of freedom, DDF = denominator degrees of freedom, S.E. = standard error.

Nestling trait	F	NDF	DDF	N	P	Parameter	S.E.
Survival	0.73	1	75.8	204	0.396	−0.000380	0.000445
Body mass	14.16	1	524	539	<0.001		
Skeletal size	14.41	1	93.3	111	<0.001	−0.00490	0.00129
Wing/feather length	0.14	1	116	120	0.708	0.000752	0.00201

Krist 2011: Biol. Rev.

Výsledky

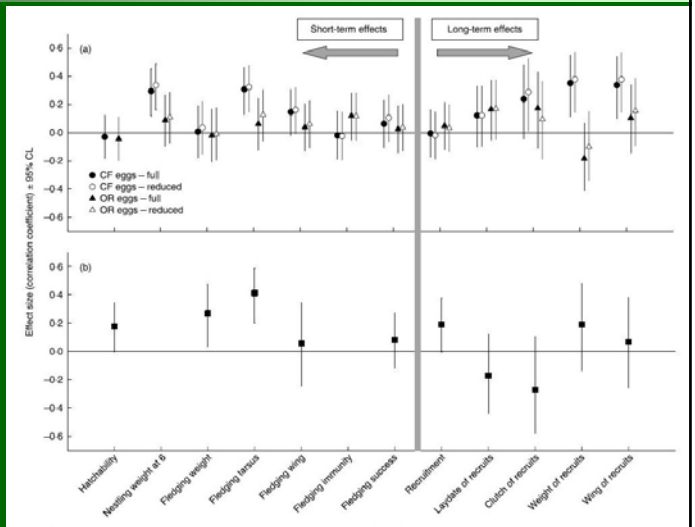


Fig. 1. Effect sizes corresponding to relationships between egg size and offspring traits. The sign of the presented effects corresponds to the sign of statistical covariation between egg size and dependent variables. The exception is the egg-size effect on laying date, where a statistically negative effect means a biologically positive effect. The sample size used for computation of effect size can be inferred from degrees of freedom of the particular test (Table S1). (a) Effects obtained in the cross-fostering experiment. The effect sizes from full and reduced models are compared. The latter models do not include the parental mid-value and feeding frequencies among predictors. Labels 'CF eggs' and 'OR eggs' denote size of the cross-fostered egg (i.e. an egg from which chicks actually hatch) and original egg (i.e. an egg originally laid on the territory) respectively. (b) Effect sizes obtained from the sets of unmanipulated nests.

Krist 2009: JAE

Výsledky

- pořadí významnosti výsledků
- velikost efektu *vs*. P-hodnoty
- směr rozdílu (trendu)
- *vs*. grafy a tabulky (redundance)
- přesné P-hodnoty (*ne* N.S., P>0.05)
- %, poměry (lépe než syrová data!)
- *ne*-interpretovat!
- prezentovat i data proti oblíbené hypotéze

Anderson et al. 2001: J. Wildl. Manage.

Výsledky

articles

Signals of need in parent–offspring communication and their exploitation by the common cuckoo

R. M. Kilner, D. G. Noble & N. B. Davies

- nemístná extrapolace trendu
- pseudoreplikace
- nelinearita

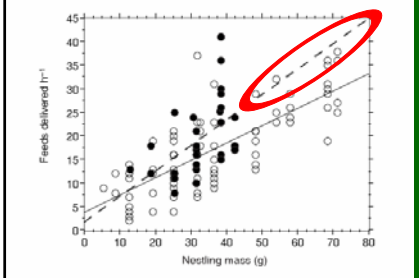


Figure 3 Relationship between nestling mass and feeding rate. The relationship between the mass of young in the nest and the number of feeds delivered per hour by both parents to the nest, for cuckoos (open circles, solid line, $n = 88$ observations of 36 different cuckoo chicks fed by 44 different pairs of hosts; some

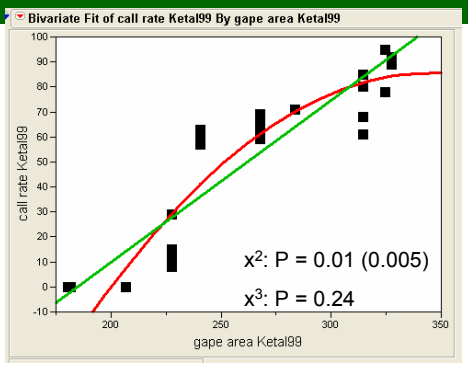
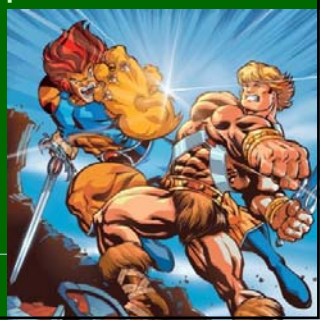


Figure 6 Comparison of observed and predicted begging call rates. Observed cuckoo begging call rate (open circles, solid line) is compared with the predicted cuckoo begging call rate (filled circles, dashed line) that should accompany the display of a particular gape area, assuming that reed warblers use the same rules to feed both a cuckoo nestling and their own young. Numbers refer to sample sizes of cuckoos measured at each age. Both lines increase significantly in relation to gape area ($F_{1,35} = 24.8$, $P < 0.0001$), but there is no significant difference between them in either their slope ($F_{1,35} = 0.018$, $P = 0.89$) or their elevation ($F_{1,35} = 0.77$, $P = 0.78$). Each predicted value corresponds to a particular day of the cuckoo's nestling period (from left to right, day 4–11, day 13 and day 15).

Diskuze

- 1. odst. shrnutí – co nového *a* zajímavého?
- posl. odst. – implikace, omezení & co dál?
- konkrétní ► obecné (*opak* Úvodu!)
- rozlišit fakta *vs*. spekulace
- *ne* statistika, nové výsledky apod.

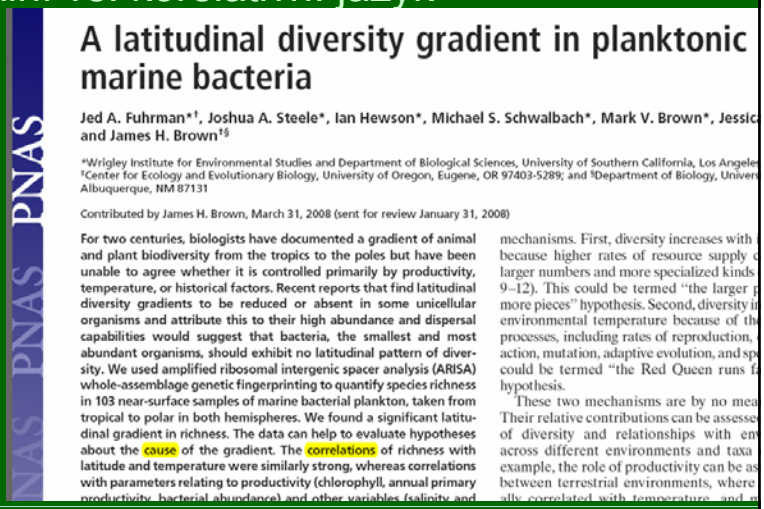


➢ neznalost předešlých studií
➢ „pře-interpretace“
➢ stat. *vs*. biol. významnost

Dawkins *kontra* Gould apod.

Diskuze

- kauzální vs. korelativní jazyk



PNAS PNAS PNAS

A latitudinal diversity gradient in planktonic marine bacteria

Jed A. Fuhrman*[1], Joshua A. Steele*, Ian Hewson*, Michael S. Schwalbach*, Mark V. Brown*, Jessic and James H. Brown[†§]

*Wrigley Institute for Environmental Studies and Department of Biological Sciences, University of Southern California, Los Angele [†]Center for Ecology and Evolutionary Biology, University of Oregon, Eugene, OR 97403-5289; and [‡]Department of Biology, Univer Albuquerque, NM 87131

Contributed by James H. Brown, March 31, 2008 (sent for review January 31, 2008)

For two centuries, biologists have documented a gradient of animal and plant biodiversity from the tropics to the poles but have been unable to agree whether it is controlled primarily by productivity, temperature, or historical factors. Recent reports that find latitudinal diversity gradients to be reduced or absent in some unicellular organisms and attribute this to their high abundance and dispersal capabilities would suggest that bacteria, the smallest and most abundant organisms, should exhibit no latitudinal pattern of diversity. We used amplified ribosomal intergenic spacer analysis (ARISA) whole-assemblage genetic fingerprinting to quantify species richness in 103 near-surface samples of marine bacterial plankton, taken from tropical to polar in both hemispheres. We found a significant latitudinal gradient in richness. The data can help to evaluate hypotheses about the cause of the gradient. The correlations of richness with latitude and temperature were similarly strong, whereas correlations with parameters relating to productivity (chlorophyll, annual primary productivity, bacterial abundance) and other variables (salinity and

mechanisms. First, diversity increases with because higher rates of resource supply larger numbers and more specialized kinds 9–12). This could be termed "the larger more pieces" hypothesis. Second, diversity environmental temperature because of th processes, including rates of reproduction, action, mutation, adaptive evolution, and sp could be termed "the Red Queen runs hypothesis.

These two mechanisms are by no mea Their relative contributions can be assesse of diversity and relationships with en across different environments and taxa example, the role of productivity can be as between terrestrial environments, where ally correlated with temperature and

Fuhrman et al. 2008: PNAS

Diskuze

Zobecňoval jsi příliš, neopatrný vědecký floutku!

Není generalizace za hranice studijní populace!

(Skoro) jakýkoli ekologický článek

Diskuze – komentář

- kritizujete? ok, ale opatrně!

Journal of Applied Ecology 2007
44, 461–463

FORUM

A call for statistical pluralism answered

PHILIP A. STEPHENS*, STEVEN W. BUSKIRK†,
GREGORY D. HAYWARD†‡ and CARLOS MARTÍNEZ DEL RIO†
*Department of Mathematics, University of Bristol, University Walk, Bristol BS8 1TW, UK; †Department of Zoology & Physiology, University of Wyoming, PO Box 3166, Laramie, WY 82071, USA; and ‡USDA Forest Service, Rocky Mountain Region, PO Box 25127, Lakewood, CO 80225, USA

Stephens et al. 2007: J. Appl. Ecol.

We welcome Lukacs *et al.*'s (2007) response to our paper calling for pluralism in inferential approaches. These are important issues and we sought to clarify the strengths and weaknesses of two inferential approaches in an atmosphere that avoided denigrating either, while emphasizing that poor application of any statistical approach is a weak basis for disregarding it as a tool for science. Lukacs *et al.*'s (2007) contribution is helpful, clarifying the arguments in favour of information theoretic (IT) approaches. The single-parameter example is useful and does much to illustrate the application of the approach. In general, we applaud statistical formalization of the method of multiple working hypotheses, as well as the focus on acknowledging model selection uncertainty, which we see as a principal advantage of that method.

In spite of our broad concurrence with Lukacs *et al.* (2007), it is unsurprising that areas of disagreement remain. Here, we focus on four. First, we question their apparent view that arguments regarding null hypothesis testing (NHT) and IT are widely understood, and that confusion over statistical methods is dissipating. Second, we believe that, whether or not it is the best method for a given problem, NHT can represent a far richer approach to analysis than represented by Lukacs *et al.* (2007). We clarify why this is the case. Third, we are concerned that, by denigrating the statistical theory underlying NHT as relatively weak, Lukacs *et al.* (2007) overstate the degree to which elements of their suggested IT algorithms are established, and their performance known. Last, in disparaging exploratory data analysis (EDA), Lukacs *et al.* (2007) confuse different stages of scientific endeavour. We explain what we see as the purpose of EDA and its role in science.

times as often as approaches based on IT (Whittingham *et al.* 2006). More strikingly, they also found that, of the relatively small number of cases where IT approaches were used, the majority used IT as part of an automated, stepwise procedure. This is in sharp contrast to the recommendations of Burnham & Anderson (2002), and serves as a reminder that IT does not inherently motivate the rigorous development of biologically plausible candidate models. Hobbs & Hilborn (2006) assessed statistical methods used in literature published by the Ecological Society of America. From 1984 to 2003, they found little change in the frequency with which NHT methods had been used. In the same period, the number of articles that include the words 'Bayesian', 'model selection' or 'likelihood' in their text increased, but evidence of an upward trend since 1996 is lacking (Hobbs & Hilborn 2006). Our own assessment of recent issues of four ecological and evolutionary journals showed that, overall, NHT techniques were used in at least 90% of data-based papers, while IT techniques were used in less than 10% (Stephens *et al.* in press). Clearly, the widespread adoption of new methods, even those that have been vigorously promoted, takes time. Nevertheless, these data suggest that we must beware of complacency; statistical approaches remain a source of uncertainty and disagreement. Given prevailing practices among ecologists in a position to mentor students, novice practitioners of ecology, in particular, may be confused by the inferential options available to them.

Our second concern regarding Lukacs *et al.* (2007) relates to their characterization of the process of NHT. In our original paper, we argued both that null hypotheses should often be framed more imaginatively than 'no effect',

We welcome Lukacs *et al.*'s (2007) response to our paper calling for pluralism in inferential approaches. These are important issues and we sought to clarify the strengths and weaknesses of two inferential approaches in an atmosphere that avoided denigrating either, while emphasizing that poor application of any statistical approach is a weak basis for disregarding it as a tool for science. Lukacs *et al.*'s (2007) contribution is helpful, clarifying the arguments in favour of information theoretic (IT) approaches. The single-parameter example is useful and does much to illustrate the application of the approach. In general, we applaud statistical formalization of the method of multiple working hypotheses, as well as the focus on acknowledging model selection uncertainty, which we see as a principal advantage of that method.

In spite of our broad concurrence with Lukacs *et al.* (2007), it is unsurprising that areas of disagreement remain. Here, we focus on four. First, we question their apparent view that arguments regarding null hypothesis testing (NHT) and IT are widely understood, and that confusion over statistical methods is dissipating. Second, we believe that, whether or not it is the best method for a given problem, NHT can represent a far richer approach to analysis than represented by Lukacs *et al.* (2007). We clarify why this is the case. Third, we are concerned that, by denigrating the statistical theory underlying NHT as relatively weak, Lukacs *et al.* (2007) overstate the degree to which elements of their suggested IT algorithms are established, and their performance known. Last, in disparaging exploratory data analysis (EDA), Lukacs *et al.* (2007) confuse different stages of scientific endeavour. We explain what we see as the purpose of EDA and its role in science.

times as often as approaches based on IT (Whittingham *et al.* 2006). More strikingly, they also found that, of the relatively small number of cases where IT approaches were used, the majority used IT as part of an automated, stepwise procedure. This is in sharp contrast to the recommendations of Burnham & Anderson (2002), and serves as a reminder that IT does not inherently motivate the rigorous development of biologically plausible candidate models. Hobbs & Hilborn (2006) assessed statistical methods used in literature published by the Ecological Society of America. From 1984 to 2003, they found little change in the frequency with which NHT methods had been used. In the same period, the number of articles that include the words 'Bayesian', 'model selection' or 'likelihood' in their text increased, but evidence of an upward trend since 1996 is lacking (Hobbs & Hilborn 2006). Our own assessment of recent issues of four ecological and evolutionary journals showed that, overall, NHT techniques were used in at least 90% of data-based papers, while IT techniques were used in less than 10% (Stephens *et al.* in press). Clearly, the widespread adoption of new methods, even those that have been vigorously promoted, takes time. Nevertheless, these data suggest that we must beware of complacency; statistical approaches remain a source of uncertainty and disagreement. Given prevailing practices among ecologists in a position to mentor students, novice practitioners of ecology, in particular, may be confused by the inferential options available to them.

Our second concern regarding Lukacs *et al.* (2007) relates to their characterization of the process of NHT. In our original paper, we argued both that null hypotheses should often be framed more imaginatively than 'no effect',

We welcome Lukacs *et al.*'s (2007) response to our paper calling for pluralism in inferential approaches. These are important issues and we sought to clarify the strengths and weaknesses of two inferential approaches in an atmosphere that avoided denigrating either, while emphasizing that poor application of any statistical approach is a weak basis for disregarding it as a tool for science. Lukacs *et al.*'s (2007) contribution is helpful, clarifying the arguments in favour of information theoretic (IT) approaches. The single-parameter example is useful and does much to illustrate the application of the approach. In general, we applaud statistical formalization of the method of multiple working hypotheses, as well as the focus on acknowledging model selection uncertainty, which we see as a principal advantage of that method.

In spite of our broad concurrence with Lukacs *et al.* (2007), it is unsurprising that areas of disagreement remain. Here, we focus on four. First, we question their apparent view that arguments regarding null hypothesis testing (NHT) and IT are widely understood, and that confusion over statistical methods is dissipating. Second, we believe that, whether or not it is the best method for a given problem, NHT can represent a far richer approach to analysis than represented by Lukacs *et al.* (2007). We clarify why this is the case. Third, we are concerned that, by denigrating the statistical theory underlying NHT as relatively weak, Lukacs *et al.* (2007) overstate the degree to which elements of their suggested IT algorithms are established, and their performance known. Last, in disparaging exploratory data analysis (EDA), Lukacs *et al.* (2007) confuse different stages of scientific endeavour. We explain what we see as the purpose of EDA and its role in science.

times as often as approaches based on IT (Whittingham *et al.* 2006). More strikingly, they also found that, of the relatively small number of cases where IT approaches were used, the majority used IT as part of an automated, stepwise procedure. This is in sharp contrast to the recommendations of Burnham & Anderson (2002), and serves as a reminder that IT does not inherently motivate the rigorous development of biologically plausible candidate models. Hobbs & Hilborn (2006) assessed statistical methods used in literature published by the Ecological Society of America. From 1984 to 2003, they found little change in the frequency with which NHT methods had been used. In the same period, the number of articles that include the words 'Bayesian', 'model selection' or 'likelihood' in their text increased, but evidence of an upward trend since 1996 is lacking (Hobbs & Hilborn 2006). Our own assessment of recent issues of four ecological and evolutionary journals showed that, overall, NHT techniques were used in at least 90% of data-based papers, while IT techniques were used in less than 10% (Stephens *et al.* in press). Clearly, the widespread adoption of new methods, even those that have been vigorously promoted, takes time. Nevertheless, these data suggest that we must beware of complacency; statistical approaches remain a source of uncertainty and disagreement. Given prevailing practices among ecologists in a position to mentor students, novice practitioners of ecology, in particular, may be confused by the inferential options available to them.

Our second concern regarding Lukacs *et al.* (2007) relates to their characterization of the process of NHT. In our original paper, we argued both that null hypotheses should often be framed more imaginatively than 'no effect',

Poděkování

- *vs*. autorství

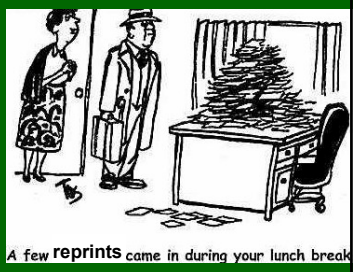
- ano: pomoc technická, *jen* sběr dat
- ne: rutinní laboratorní, úřednická práce

- kdo komentoval rukopis
- kdo výzkum financoval (čísla grantů)
- kdo výzkum povolil – etika, licence
- díky (anonymním) recenzentům!

http://www.icmje.org/

Literatura

- zdroje zastaralé / ne přesně k tématu
- necitovat: diplomky, abstrakty, ...
- přehlédnutí významných studií



- chybné citace – formát

➢necitovat z druhé ruky!

- chybné citace – obsah (25% v ekologii!!!)

➢necitovat naslepo nebo dle abstraktů!

Todd et al. 2007: Oikos

Literatura

- 25% citací v ekologii:
  "ambiguous", "not support", "empty“

Oikos 116: 1599–1601, 2007
doi: 10.1111/j.2007.0030-1299.15992.x,

Subject Editor: Per Lundberg, Accepted 27 June 2007

Horizons

Citing practices in ecology: can we believe our own words?

Peter A. Todd, Darren C. J. Yeo, Daiqin Li and Richard J. Ladle

P. A. Todd (dbspat@nus.edu.sg), D. C. J. Yeo and D. Li, Dept of Biological Sciences, Natl Univ. of Singapore, 14 Science Drive 4, SG-117543 Singapore, Singapore. – R. J. Ladle, Oxford Univ. Centre for the Environment, Dyson Perrins Building, South Parks Road, Oxford, OX1 3QY, UK.

Peer-reviewed articles are the foundation of modern four groups by a majority decision (Table 1). At all

Obrazové přílohy

- graf > tabulka >> text

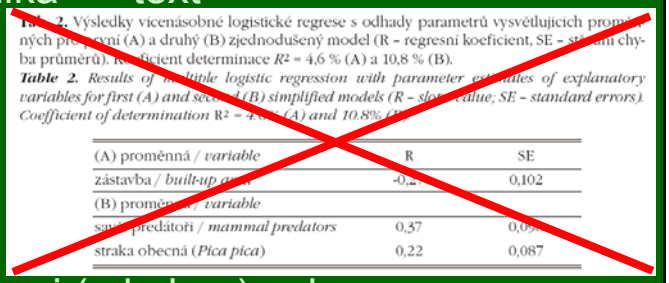


Table 2. Results of multiple logistic regression with parameter estimates of explanatory variables for first (A) and second (B) simplified models (R – slope value; SE – standard errors). Coefficient of determination R^2 = 4.6 % (A) and 10.8% (B).

(A) proměnná / *variable*	R	SE
zástavba / *built-up area*	-0,2	0,102
(B) proměnná / *variable*		
savci predátoři / *mammal predators*	0,37	0,09
straka obecná (*Pica pica*)	0,22	0,087

- ptejte se sami (a kolem) sebe:
  - ➢ je příloha *samostatně* srozumitelná?
  - ➢ je příloha nezbytná?

Less is more.
And when in doubt – delete.
(Mark E. Hauber)

Matthews & Matthews 2008: Successful scientific writing. Cambridge UP.

Jak nemá vypadat tabulka?

Sp.	Přežilo (n)	Přežilo (%)	Sežráno (n)	Sežráno (%)	Celkem	chi	P
Drozd	1	33.33	2	66.67	3	0,171	0.6788
Kos	2	66.7	1	33.33	3	0,2	NS
Pěnkavy	9	90.00	1	10.00	10	1.13	***
Ost.	...	...	...	...	...	...	***

Tab. 1: Jak přežívala hnízda?

- desetinná místa vs. přesnost měření & biologická smysluplnost
- nekonzistentní formátování
- redundance, nejasnosti, opakování informací

Matthews & Matthews 2008: Successful scientific writing. Cambridge UP.

Jak (ne)má vypadat tabulka?

Tabulka 1 Rozdíly v hmotnostech (průměr ± S.E.) mláďat drobných pěvců v různých prostředích. Data pro mláďata ve věku 5 dnů (den líhnutí = den 0). Detaily viz Metodika.

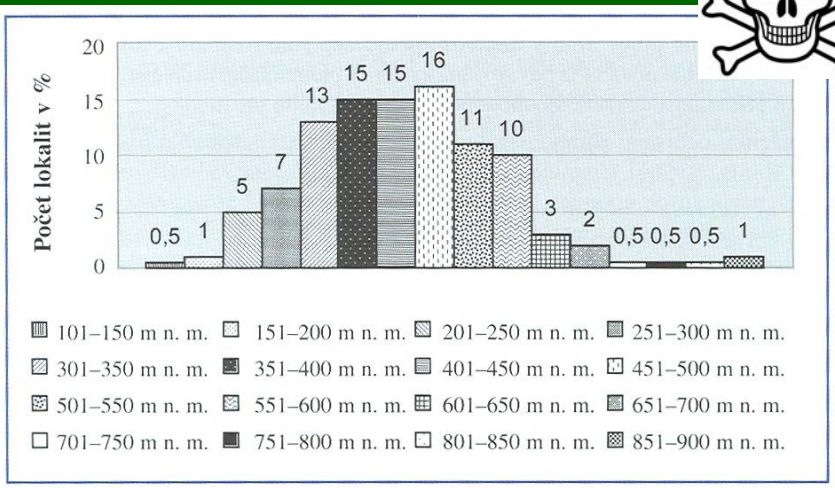
Druh	Hmotnost (g)		t	P
	Město	Vesnice		
Kos černý	23,0 ± 12,5	13,9 ± 3,3	4,39	<0,001
Drozd zpěvný	28,7 ± 30,1	29,1 ± 18,7	0,11	0,36
Pěnice …	…	…	…	…

Tab. 1 Jak se liší růst ptáků?

Sp.		g	%
Kos	Město	22,98 ± 12,52	6
	Vesnice	13,85 ± 3,3	1
	P	<0,001	
	t	4,39	
		mm²	%
Drozd	Město	28,66± 30,11	8
	Vesnice	29,11 ± 18,66	8
	P	n.s.	
	t	-	
Pěnice	Město	12,658 ± 0,54	5
	Vesnice	10 ± 1,589754	4
	t		
	P		

Ze smyšleného nepublikova(tel)ného rukopisu

Jak nemá vypadat graf?



Graf 1: Nálezy mihule potoční v České republice podle nadmořské výšky (n = 275), HANEL (2004)

Hanel & Lusk 2005: Ryby a mihule České republiky. ČSOP, Vlašim

Jak nemá vypadat graf?

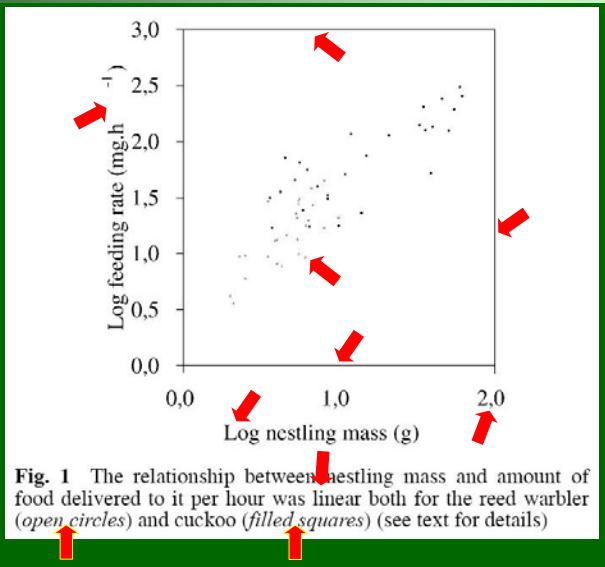


Fig. 1 The relationship between nestling mass and amount of food delivered to it per hour was linear both for the reed warbler (*open circles*) and cuckoo (*filled squares*) (see text for details)

Grim & Honza 2001: Behav. Ecol. Sociobiol.

Jak má vypadat graf?

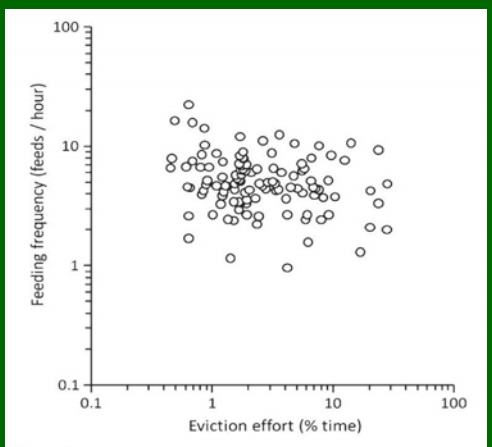


Figure 4
Trade-off between eviction effort by common cuckoo chicks and feeding frequencies by the fosterer common redstarts. Results from GLMM with the eviction effort as a predictor, the feeding frequency as a response, the chick age as a covariate (all log transformed), and the chick identity as a random effect (see Results).

Grim et al. 2009: Behav. Ecol.

Jak má vypadat graf?

- osy
- popisky
- jednotky
- vysvětlivky

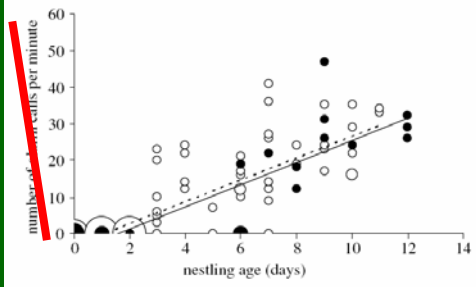
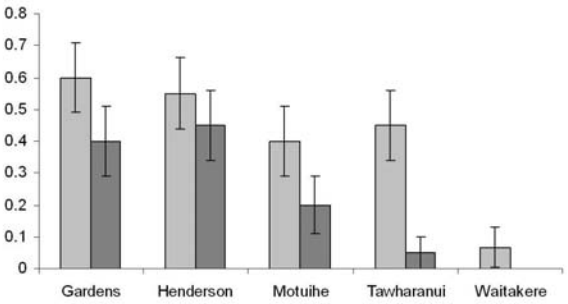


Figure 2. Alarm calling rate (churrs per minute) of one parent reed warbler in response to a human observer near the nest increased with nestling age ($F_{1,107} = 204.36$, $p < 0.0001$), but did not differ between nests containing broods of reed warbler nestlings (open circles, dashed regression line) and those with a cuckoo nestling (solid circles, solid regression line; $F_{1,107} = 0.099$, $p = 0.75$). Day 0 is day of hatching. The smallest symbol refers to one observation and the area of the larger symbols is directly proportional to the sample size (for largest, $n = 15$). Data from 24 nests with a cuckoo nestling and 86 nests with a reed warbler brood, with one observation per nest.

Davies et al. 2006: Proc. R. Soc. Lond. B

Jak nemá vypadat popiska grafu?



12

13 **Figure One: Nest predation, as a proportion of total nests, subdivided by nest size for the**

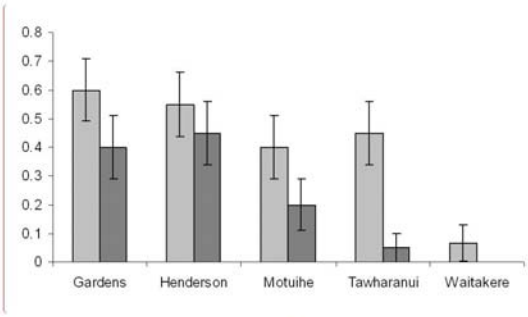
14 **artificial nest dataset. Light bars denote small artificial nests; dark bars denote large**

15 **artificial nests. Error bars are +/- 1SE under a canonical binomial distribution.**

16

XXX

Jak má vypadat popiska grafu?



18

19 **Figure 1** Nest predation estimates (mean±S.E.) for small (light bars) and large artificial nests

20 (dark bars) across study sites. Estimates are from XX short descripiton of stat. model XX.

Odstraněno: :

Naformátováno: Písmo: není Tučné

Odstraněno: , as a proportion of total nests, subdivided by nest size for the artificial nest dataset.

Naformátováno: Písmo: není Tučné

Odstraněno: L

Naformátováno: Písmo: není Tučné

Odstraněno:

Naformátováno: Písmo: není Tučné

Odstraněno: denote

Naformátováno ...

Odstraněno: small artificial ...

Naformátováno ...

Naformátováno: zvýrazněné

Odstraněno: denote large ...

Naformátováno ...

XXX

Jak nemá vypadat popiska tabulky?

3

4 **Table Two: Tracking tunnel records for each site. A y in a given column denotes that that**

5 **species' marks were found in at least one tracking tunnel in the site, whereas an n denotes**

6 **that the species was not recorded in any of the tunnels left at the site.**

	Weta	Mice	Rats	Hedgehogs	Other mammals
Tawharanui	y	y	n	n	n
Henderson	y	y	y	y	y
Gardens	n	y	y	y	y
Motuihe	y	n	n	n	n
Waitakere	y	n	n	n	n

7

8

9 No difference was seen in overall rates of predation between real and artificial

10 nests (z=1.08, p=0.28), and overall rates of predation were lower in sites with mice

XXX

Jak má vypadat popiska tabulky?

the findings is presented in Table Two.

Table 2 Presence ("y") vs. absence ("n") of predators across study sites. Data from tracking tunnels.

	Weta	Mice	Rats	Hedgehogs	Other mammals
Tawharanui	y	y	n	n	n
Henderson	y	y	y	y	y
Gardens	n	y	y	y	y
Motuihe	y	n	n	n	n
Waitakere	y	n	n	n	n

No difference was seen in overall rates of predation between real and artificial nests ($z=1.08$, $p=0.28$), and overall rates of predation were lower in sites with mice only than in sites with all mammals ($z=2.08$, $p=0.0380$). However, analysis comparing rates of predation on real nests and large artificial nests in sites with all

Odstraněno: Two
Odstraněno: :
Naformátováno: Písmo: není Tučné
Odstraněno: T
Naformátováno: Písmo: není Tučné
Naformátováno: Písmo: není Tučné
Komentář: extremely redundant text☺
Odstraněno: records for each site. A "y" in a given column denotes that that species' marks were found in at least one tracking tunnel in the site, whereas an "n" denotes that the species was not recorded in any of the tunnels left at the site
Naformátováno: Písmo: není Tučné
Vloženo: "
Vloženo: "
Vloženo: "
Vloženo: "

XXX

Formát & styl

Formát & styl

How to write consistently boring scientific literature

Fig. 1. "*Congratulations, you are now capable of writing technical, impersonal and boring papers like myself and the other gentlemen – welcome to Academia*". Drawing by Sverre Stein Nielsen.

Sand-Jensen 2007: Oikos

Formát & styl

- věda ≠ beletrie – pište:

- jasně (*vs*. „květnatost“)
- jednoznačně
- bez odboček
- gramaticky správně
- rozlišujte podstatné a ne...
- stručně (souvětí!)
- opakování termínů nevadí!

Williams 1995: Style. Toward clarity and grace. Chicago UP.

Formát & styl

- „lajdácké psaní naznačuje lajdácké myšlení“
- trpný rod = 
- čas přítomný – obecné pravdy
- čas minulý – konkrétnosti + nová zjištění
- abstraktní podst. jména ► aktivní slovesa

Place explanatory matter in footnotes, not in the heading. Explain in footnotes all non-standard abbreviations that are used in each table. For footnotes use the following symbols, in this sequence: ⋆, † , ‡, §, ||, ¶, ⋆⋆, ††, ‡‡ etc.

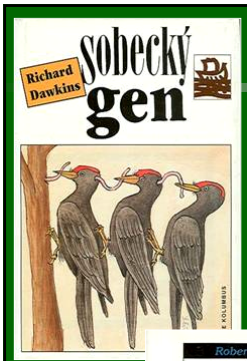
Identify statistical measures of variation such as standard deviation and standard error of the mean.

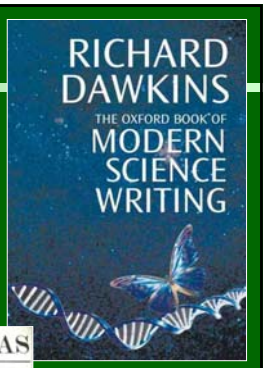
Do not use internal horizontal and vertical rules.

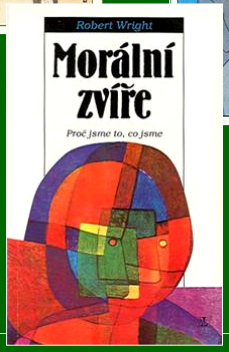
Be sure that each table is cited in the text.

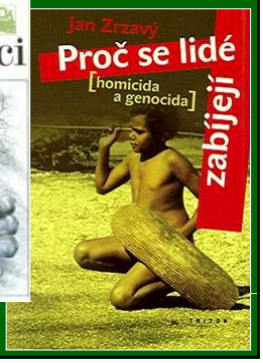
author guidelines

Formát & styl









Lidé – čtěte!

Kolik toho napsat?

optimální	slov
název	10–12
abstrakt	200
rukopis	6 000
věta	15–20
odstavec	150

Automatický formát

Účastníci řízení (podle § 27 odst. 1 správního řádu)
- doc. RNDr. Tomáš Grim, Ph.D., nar. 13.9.1973, trvale bytem Bohuslava Martinů 13, 602 00

Žádost podali:
TG
Mark Hauber
Jarkko Rutila
Csába Moskát

Odůvodnění

vního řízení bylo stanovení odchylného postupu za účelem řešení významného mezinárodního vědeckého výzkumného projektu v oblasti odchytu jedinců kosa černého a drozda zpěvného, dále odběry krevních vzorků a mimo jiné i pozorování chování obou uvedených druhů. Na uvedeném projektu žadatel spolupracuje s Dr. Markem Gaunerem (Auckland University, Nový Zéland), Dr. Philipem Casseym (University of Birmingham, Velká Británie), Dr. Jarkkoem Rutinou (Finsko) a Dr. Chabo Moskytem (Maďarsko). Výzkumný projekt je součástí základního výzkumu nezbytného pro poznání evolučních vztahů mezi hnízdními parazity a jejich hostiteli. Projekt navazuje na dlouholetou práci žadatele v oblasti, která už vedla k celé řadě významných zjištění.

Na základě výše uvedených skutečností bylo rozhodnuto tak, jak je uvedeno ve výroku rozhodnutí.

Poučení o odvolání

Proti tomuto rozhodnutí lze podat odvolání do 15ti dnů ode dne jeho oznámení. Odvolání se

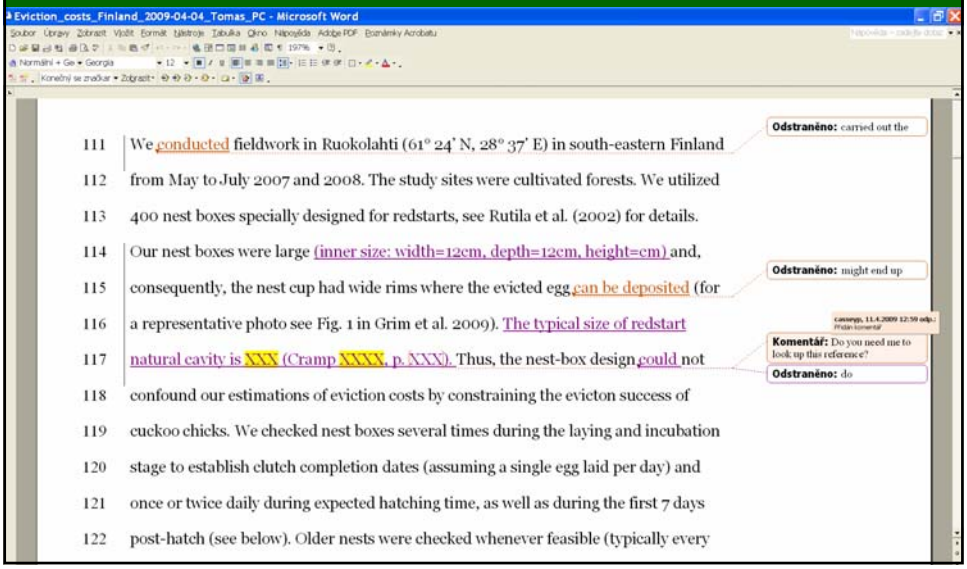
Zdravý rozum

Během přípravy MS

- psát *rychle*
- nebo psát „po kouskách“
- ukládat kopie („..._2009-05-26“)
- „neleštit“ formát před obsahem!
- MS nechat „uležet“ (odstup!)

Matthews & Matthews 2008: Successful scientific writing. Cambridge UP.

Psaní



Před odesláním do redakce...

- citace v textu vs. Literatura
- formát pro daný časopis
- gramatika – Nástroje ► Pravopis!
- překlepy – Ctrl+H
- formát obrazových příloh

- „dát někomu přečíst“ *před* submitací

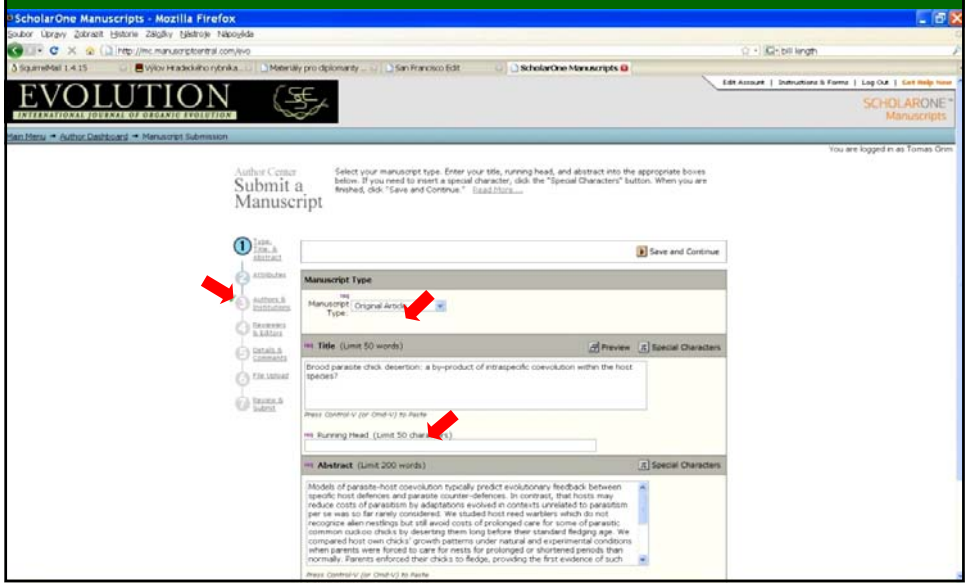
Zdravý rozum☺

... ale do které redakce?

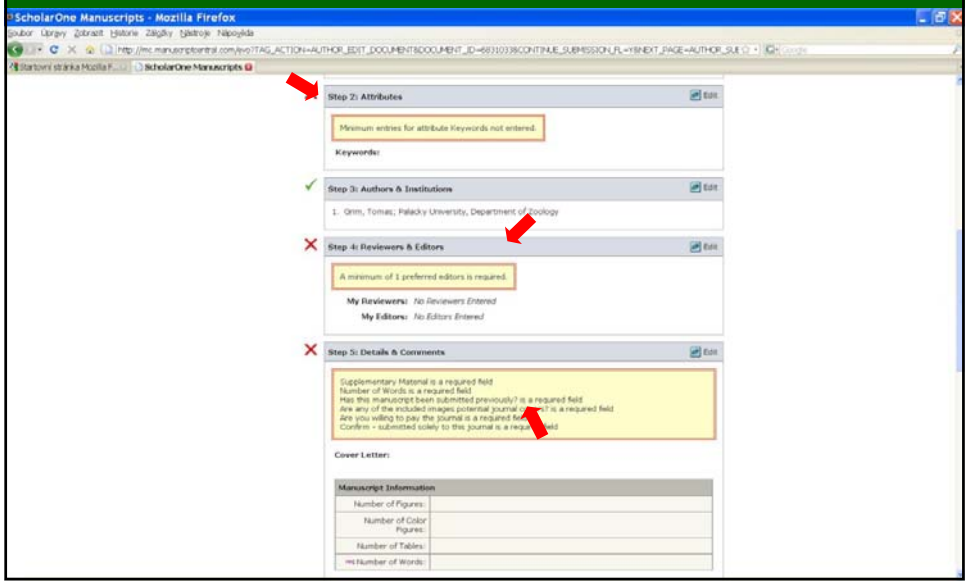
- zaměření časopisu
- oborový či obecný?
- IF (~ rejection rate)
- rychlost redakční práce
- omezená délka textu?
- platí se za překročení stránkového limitu?
- platí se za otištění a/nebo barevné foto?

author guidelines

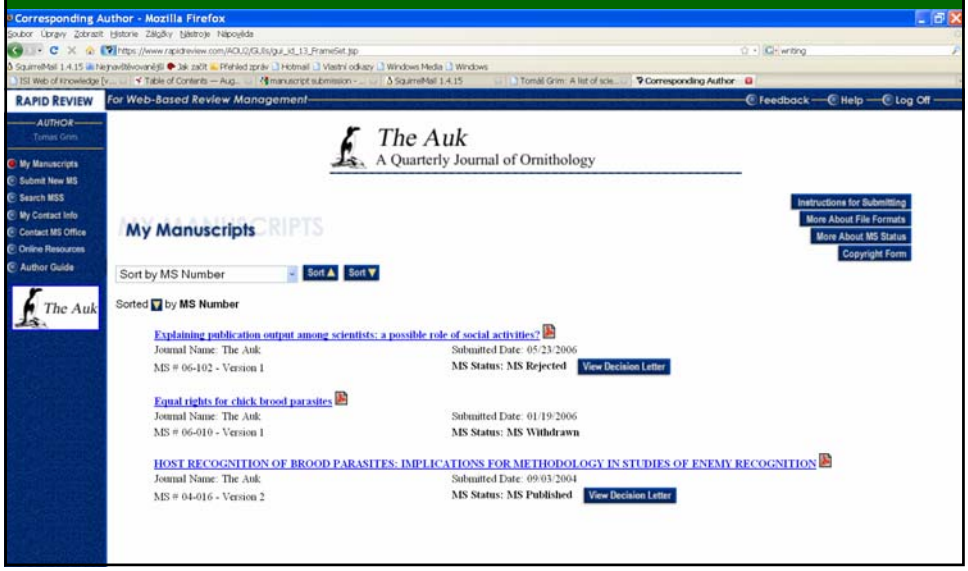
Odeslání do redakce



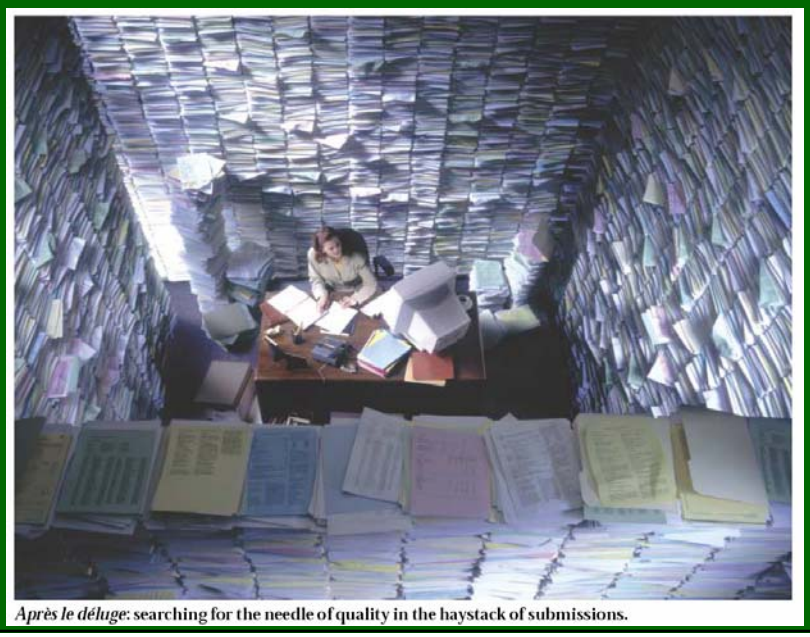
Odeslání do redakce



Odeslání do redakce



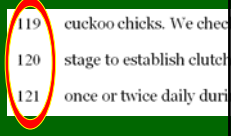
Ostatní však také odeslali do redakce...



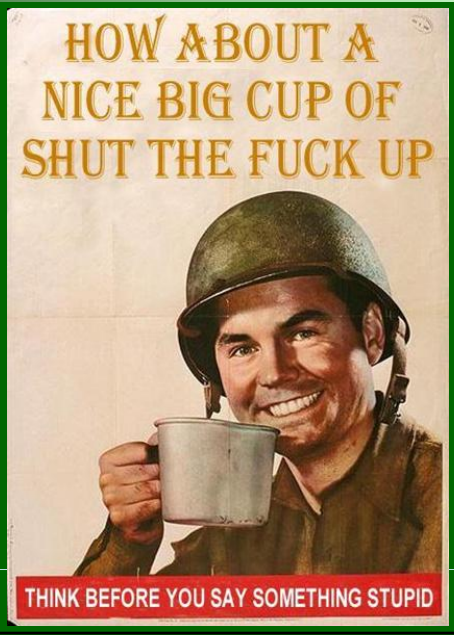
Après le déluge: searching for the needle of quality in the haystack of submissions.

Proč jsou rukopisy odmítány?

- ignorování „Pokynů pro autory“
- Czenglish
- nezajímavé téma (opakování známého)
- nevhodný design, malý vzorek
- chybná statistika
- „over-interpretation“
- formát tabulek a grafů
- zastaralé literární zdroje
- ignorování recenzentů



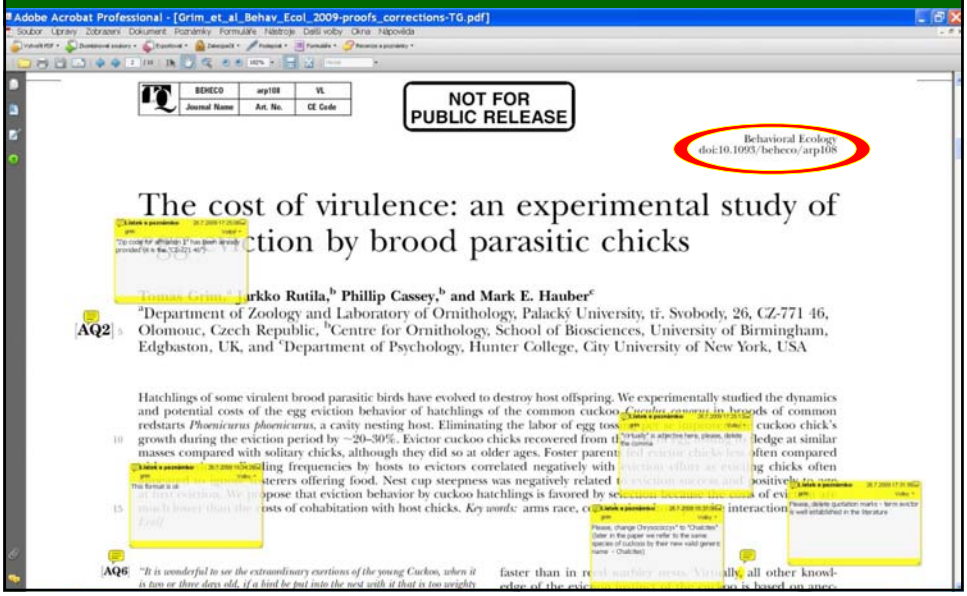
Rejection ► kafe ► resubmission



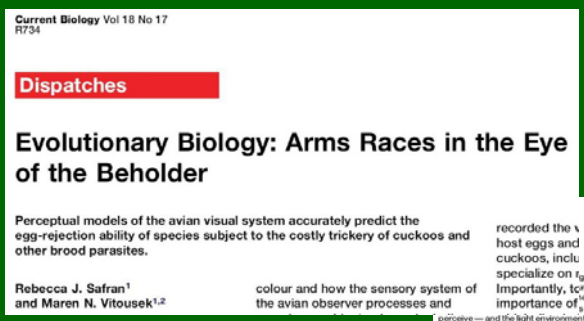
Proč jsou rukopisy přijímány?

- význam výsledků (rozšiřují poznání)
- kvalita designu studie
- adekvátnost statistického zpracování
- stylistická úroveň

Korektura



Propagujte své publikace!


Current Biology Vol 18 No 17
R734

Dispatches

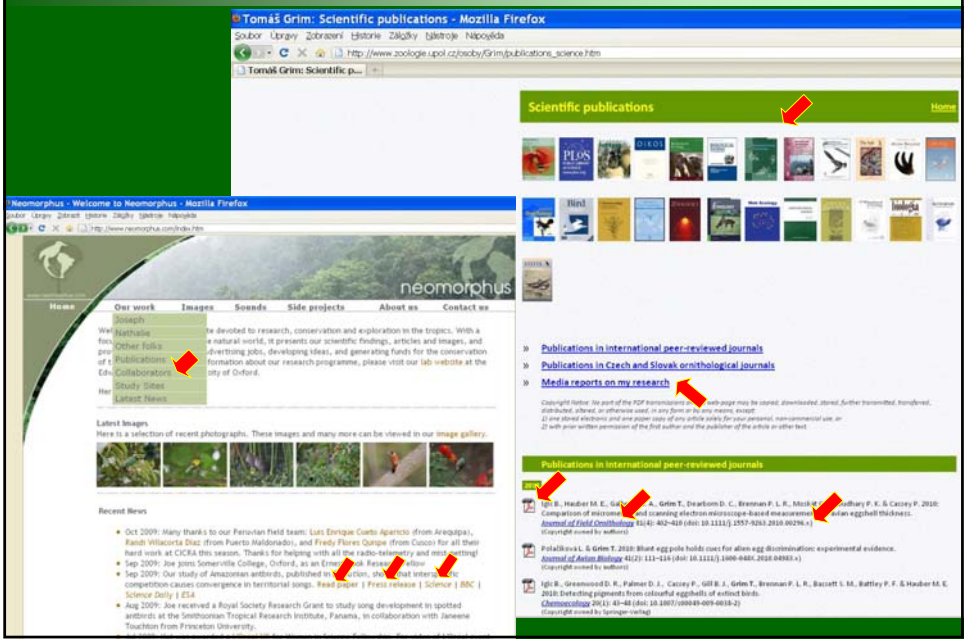
Evolutionary Biology: Arms Races in the Eye of the Beholder

Perceptual models of the avian visual system accurately predict the egg-rejection ability of species subject to the costly trickery of cuckoos and other brood parasites.

Rebecca J. Safran[1] and Maren N. Vitousek[1,2]

- e-mail kolegům
- e-mail pomocníkům
- press release
- media reports
- popularizace

Propagujte své publikace!



Ke čtení a zamyšlení

FORUM | ROZHOVOR

O vědcích a pivech

Tomáš Grim | FORUM

IF: triky a pověry

Af se to komu líbí či ne, vyhnout se hodnocení ve vědě podle jednoznačných kvantifikovatelných kritérií nelze. V sázce

článků determinuje IF (z definice), naopak IF neurčuje citovanost článků (jak se naivně domnívají zvláště začínající autoři. See-

(Citovaná literatura) bývá v biochemii dvakrát delší než v matematice. Přičteme k tomu fakt, že matematici mají ve zvyku publikovat méně často, zato velké články, zatímco biochemici jsou typičtí snahou produkovat menší publikovatelné jednotky – výsledky po částech do více článků.

Ve velkých oborech IF dosahuje vyšších hodnot – čím více časopisů v oboru, tím větší rozptyl v IF (a tím větší šance, že distribuce budoucí bude obsahovat i vyso-

Tomáš Grim | FORUM

Citace: triky a pověry

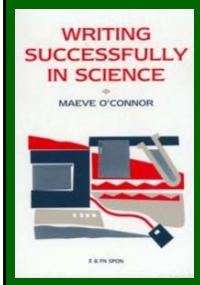
„…v českých vědeckých kruzích [probíhá absurdní debata] o tom, zda se vůbec dají měřit a hodnotit výsledky vědecké práce a jak. Zpochybňování zjevné skutečnosti, že jedna skvělá práce je lepší než sto průměrných a že důležité práce se zpravidla objevují ve špičkových časopisech a jsou zpravidla hojně citovány, zatímco práce bezvýznamné nikoli, je tak nutno vidět spíše jako zábavný materiál k eseji … než seriózní příspěvek do vážně míněné diskuse."
V. Novotný: Kargo kult, český vědecký. Vesmír 2000, 79 (5): 284

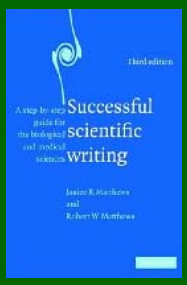
vity spoluautorů, což nemá nic společného s kvalitou publikační aktivity sledovaného autora. Proporce autocitací a citací spoluautory může být překvapivě vysoká. Některé – na poměry v oboru – silně citované články se při detailním pohledu překvapivě ukážou jako v podstatě zapomenuté všemi (tedy kromě jejich autorů). Nedávno jsem např. narazil na článek za 15 let citovaný celkem 38× – na ornitologii nadprůměr. Po vyřazení autocitací však zůstalo pouhých 10 plnohodnotných citací – v tomto oboru podprůměr.

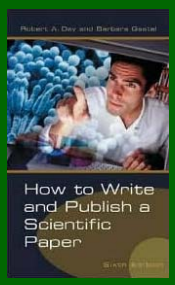
[3] WoS umožňuje volbu bez autocitací (View without self-citations), která jednak nevylučuje citace spoluautory a naopak může omylem vyloučit platné citace stejnojmenným autorem. Ta ovšem uvádí celkový počet článků, které daného autora citu-

Grim 2009: Živa

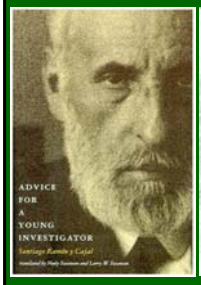
Užitečné zdroje informací

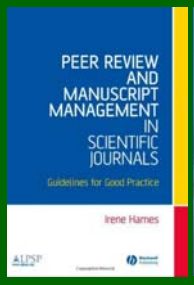






Užitečné zdroje informací





- http://www.icmje.org/
- http://www.sfedit.net/newsletters.htm