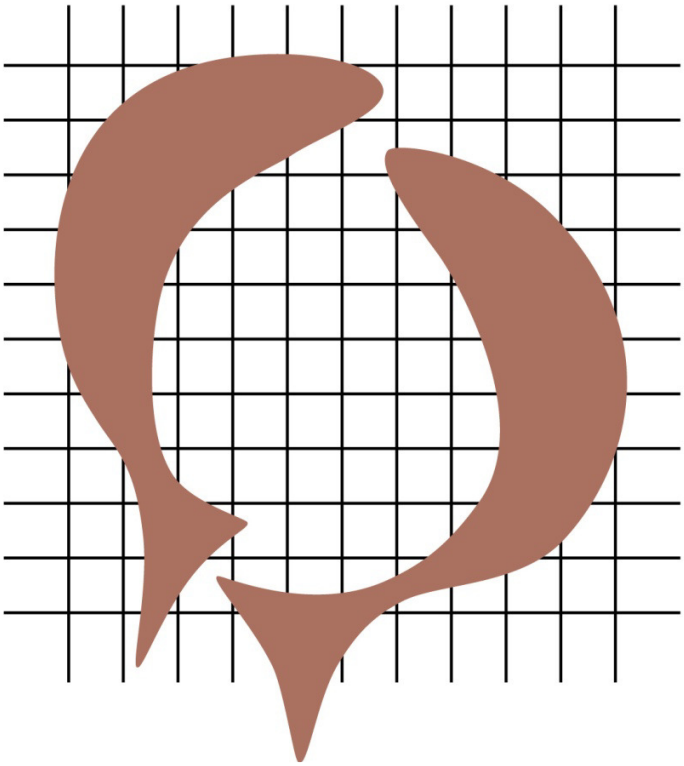
NVG NEWSLETTER

24th year no. 1, June 2015

Nederlandse Vereniging voor

Gedragsbiologie



Contents:

NETHERLANDS SOCIETY FOR BEHAVIOURAL BIOLOGY

The Netherlands Society for Behavioural Biology aims at strengthening behavioural biology in the Netherlands and the direct surroundings. We strive for top quality in all of the behavioural sciences with respect to teaching, research, and public debate. The society organizes a yearly meeting and distributes this biannual newsletter.

Council members:

Prof. Dr. Simon Verhulst (Chair)

Dr. Ruud van den Bos (Secretary)

Dr. Jeroen Stevens (Belgium)

Dr. Kees van Oers (PhD workshop)

Dr. Liesbeth Bolhuis (Treasurer)

Dr. Martine Maan (NVG-meeting)

Dr. Hans Slabbekoorn (Newsletter)

More information available at:
http://www.gedragsbiologie.nl

Contact/Membership:
Dr. Ruud van den Bos

Phone: 00 31 2436 52876
E-mail: ruudvdbos@science.ru.nl

Membership fee: € 25,- per year for (PhD-)students and biologists in-between-jobs. Others: € 30,-.

Contributions newsletter:
Dr. Hans Slabbekoorn

Phone: 00 31 71 527 5049
E-mail: h.w.slabbekoorn@biology.leidenuniv.nl

Editorial Preface

Open house in the ivory tower? More than 11,000 questions were submitted, assessed for usefulness and clustered by theme, to generate the Dutch Science Agenda by the end of 2015. I support involvement of the public and I am for transparency and open access. However, exploring the unknown, revealing the unthinkable, tackling the feasible and critical, while having an overview of the literature, is an explicit part of science and is in better hands with experts within disciplines. I therefore do not expect any positive impact on scientific progress or on the international academic status of the Netherlands. So, open the doors, but do not break down the tower. **Hans Slabbekoorn**

SOESTERBERG 2015 NVG annual meeting.

The 23rdNVG meeting will be held from Wednesday 25th to Friday 27th of November 2015 in conference hotel 'Kontakt der Kontinenten' in Soesterberg, The Netherlands.
(www.kontaktderkontinenten.nl)

Registration will open in September.

The meeting starts on Wednesday evening, after the PhD workshop (see below), with the Brill Baerends Lecture*. This year, the Brill Baerends Lecture will be presented by Prof. dr. **Felicity Huntingford** (http://www.gla.ac.uk/researchinstitutes/bahcm/staff/felicityhuntingford/). Felicity Huntingford is Emeritus Professor of Functional Ecology at the University of Glasgow. She is a former president of the Fisheries Society of the British Isles and of the Association for the Study of Animal Behaviour. Her research encompasses many different aspects of fish behaviour, ranging from sexual selection and aggression to animal personality and farmed fish welfare. She has written and edited several books and published more than 200 scientific papers.

Other invited speakers include Maria van Noordwijk, Carel van Schaik and Frederic Mery.

Dr. **Maria van Noordwijk** (http://www.aim.uzh.ch/Members/researcherandpostdocs/mariavannoordwijk.html) is at the Anthropological Institute & Museum of the University of Zürich. She is interested in primate ontogeny and maternal care, focusing especially on long-term mother-offspring relationships in orang-utans, which she studies in their natural habitat in Indonesia.

Prof. dr. **Carel van Schaik** (http://www.aim.uzh.ch/Members/profofinstitute/vanschaik.html) is Director of the Anthropological Institute & Museum of the University of Zürich. He studies social evolution in primates, with a special interest in the origin of human-specific traits such as technology and culture, life history, intensive cooperation, brain size, language and sexual behavior.

Dr. **Frederic Mery** (http://www.egce.cnrs-gif.fr/?p=774) is group leader at CNRS in Gif-sur-Yvette and studies the evolution of cognition and social learning. His work addresses the ecological determinants and fitness consequences of variation in learning abilities, using fruit flies as a model system.

Other confirmed speakers include Prof. dr. Simon Verhulst

(University of Groningen) and Dr. Jeroen Stevens (Royal Zoological Society of Antwerp).

As usual, the annual meeting will be preceded by a workshop for (starting) PhD-students, on Wednesday 25th of November. This workshop is organised by Kees van Oers (k.vanoers@nioo.knaw.nl) and will feature a guest speaker and several PhD students who will present work from their research projects. The theme of this year will be: "*Bio-ethics: the use of animals* ***for behavioral research*****". Ample time for discussion is planned in together with a few senior scientists. All PhD students in fields related to behavioural biology are invited to attend!**

More information will follow at www.gedragsbiologie.nl/Soesterberg2015. Please mark the dates and spread the word!

See you at our 23rd meeting!

Martine Maan & Kees van Oers

*** The Brill Baerends Lecture is sponsored by Brill Publishers, publisher of *Behaviour*,one of the major journals in behavioural biology. The lecture is named after Prof.Dr. Gerard Baerends, who was editor of *Behaviour* for many years.**

Behavioural Biology masterclass NVG

NVG-Master Class for PhD-students ~ Leiden 2-3 November 2015

Animal Personality ~ concepts, methodology & applications

What: A two-day event aimed at PhD level, with lectures, practicals, and interactive sessions by researchers working on birds and fish. Two days, nine-to-five, plus a dinner in town to socialize on Monday evening. Physiology, behaviour, genomics, sexual selection & cognition. We will address it all, and more... ☺

Where: Sylvius Laboratory, Leiden

Target group: students in behavioural biology or related fields. The number of participants will be limited to ensure an interactive nature (max 16).

Fee: € 150,- per student (sponsored by the NVG).

Organisation: Hans Slabbekoorn, Katharina Riebel, Christian Tudorache (IBL); Niels Dingemanse (MPI) & Kees van Oers (NIOO).

Contact:
h.w.slabbekoorn@biology.leidenuniv.nl

ibl WELCOME! NIOO

NVG Picture contest:

the last stage to eternal fame…

Dr. Hook's song "Cover of the Rolling Stone" says it all: we got it all, but our life ain't perfect unless our picture is on the cover of the Rolling Stone". Well that's the same for us, behavioural biologist, ain't it. We are handsome, rich, and famous, but there's one thing missing: seeing our picture on the NVG website… but then of our animals of course…

Long-tailed weasel ~ Hans Slabbekoorn

So here's your chance for this last stage to eternal fame: send us a nice picture of your favourite animal (humans allowed) and we'll select the one's to be placed on the new website (work in progress). And as we are all familiar with competitions: also this one will be entirely fair, transparent, and unprejudiced.

So please send your animal-pictures to the board of the NVG (R.vandenBos@science.ru.nl) before the 1st of October, and we will present the winners at our annual meeting.

IN THE SPOTLIGHT

~ Special occasions, honorary lectures, prizes, grants and awards for outstanding behavioural biologists.

Dr. Wouter Halfwerk

was recently appointed assistant professor at the Department of Animal Ecology, VU Amsterdam University.

VU VRIJE UNIVERSITEIT AMSTERDAM

His research focus will be sensory ecology in a changing world. In particular he wants to understand how animals perceive their surroundings, how they deal with changes to the sensory environment and how this in turn affects the

interactions between individuals from the same or different species.

The past three years Wouter has worked as a post-doc at the Smithsonian Tropical Research Institute in Panama on the sexual display of the túngara frog, a species that plays a central role in studies on sexual selection and animal communication. Male frogs communicate with so called multimodal signals. They produce sounds while floating on the water surface, but their calling also generates cues in different physical domains, namely movements of the frog's vocal sac, as well as vibrations on the water surface. These additional cues turn out to play an important role in detection and localisation of signallers by receivers, such as rival males, choosy females and predatory bats.

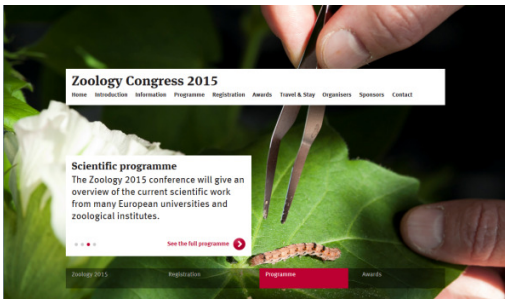
Smithsonian Tropical Research Institute

He has been nominated and awarded several prizes for his post-doctoral work on multimodal communication. He will be awarded the Dutch Zoology prize during the Zoology Congress held from 8-9th of October 2015 in Amsterdam. He also received the Jackson/Knowlton award for best paper published by a Smithsonian fellow in 2014.

He will continue his fieldwork in Panama, but he will shift his attention to the role of environmental sensory conditions on the production and perception of communication signals. He has received a Marie-Curie fellowship to address signal adaptation to the urban environment, with a strong focus on sound and light pollution and he plans to expand his research to other species and communities, such as e.g. predatory spiders that can also pick up the water surface waves produced by frogs.

Wouter also just received a prestigious NWO Veni-grant that allows him to develop a new line of research in the Netherlands. The focus of this research will be on the impact of noise on the interaction between predatory birds and insect prey, but he aims to expand this line to other aspects of sensory pollution as well as species interactions.

Zoology 2015



The **21st Zoology Congress**, formerly called the "Benelux congress of Zoology", will take place

in Amsterdam (the Netherlands) on **8 & 9 October 2015** at the Barbizon Hotel in Amsterdam.

UNIVERSITY OF AMSTERDAM

The meeting is organised by **Astrid Groot** and **Isabel Smallegange**, on behalf of the Royal Dutch and Belgian Zoological Societies.

Zoology 2015 is an excellent opportunity for students and young scientists to meet colleagues and to present and discuss their research. Moreover, the conference will give an overview of the current scientific work from many European universities and zoological institutes, and thus provide ample opportunity for establishing contacts for collaboration.

Four general topics will be illustrated by four keynote speakers: genomics of development and behaviour, ecological forecasting, eco-evolutionary dynamics, and microbe – (in)vertebrate interactions.Keynote speakers include Steve Jones (Distinguished Zoologist public lecture), Hanna Kokko, Matthew Evans, Yael Artzy-Randrup and Marcel Visser.

Prof. Hanna Kokko, Institute of Evolutionary Biology and Environmental Studies, University of Zurich, Switzerland

On Friday 9 October, the **NVG sponsors a parallel session** on the role of behaviour in adaptation and coping with change. This session will be opened with a lecture by **Hannah Dugdale** (Universities of Groningen) on "Social effects on parental care behaviour" (preliminary title).

Dr. Hannah Dugdale, Department of Animal & Plant Sciences, University of Sheffield, England

Deadline for abstract submission and early bird registration: 8 September 2015

For more information see: www.zoology2015.nl

FINANCIAL SUPPORT OPPORTUNITY FOR MEETINGS AND SYMPOSIA IN BEHAVIOURAL BIOLOGY

AIM: The NVG wants to support small events with financial contributions if they yield a significant spread of interest, increase the understanding, or stimulate research ideas and collaborations in Behavioural Biology in the Netherlands or Flanders.

Guidelines follow below for applying and receiving financial support from the NVG for Behavioural Biology events (as approved by the board on the 29th of June, 2012).

Budget & Decision Process:

1) A total of maximally €750 is available per budget year (Adjustments can only be determined at the annual meeting);
2) The possibility of support is advertised at the annual meeting and in the newsletter;
3) A board majority is required to award a support request;
4) Board members involved in a request are excluded from the decision making process;
5) Support decisions are communicated through a letter from the treasurer.

Eligibility & Applications:

1) Only NVG-members can apply;
2) Support requests need to be submitted at least six weeks before the event;
3) The application involves a brief explanation of how the event matches our aim;
4) The application should include a budget with costs, benefits and other co-sponsors.

Obligations & Reimbursement:

1) The applicant is obliged to inform NVG-members at least two weeks in advance about the NVG-supported event;
2) The applicant is obliged to write a brief report for the next newsletter about the event;
3) Payment takes place after the event, based on actual receipts, and after having received a newsletter report;
4) All documents will be provided to the audit committee for the annual financial report.

http://www.wetenschapsagenda.nl/

THESIS DEFENSE

~ Recently defended PhD-theses on animal behaviour. Target is to provide some background and to highlight an interesting finding in a single figure.

Nanda Ursinus defended her thesis '*A tale too long for a tail too short? Identification of characteristics in pigs related to tail biting and other oral manipulations directed at conspecifics*' on the 3rd of October 2014. The PhD study was conducted at the Adaptation Physiology Group of Wageningen University, and the Animal Welfare group of Wageningen UR Livestock Research.

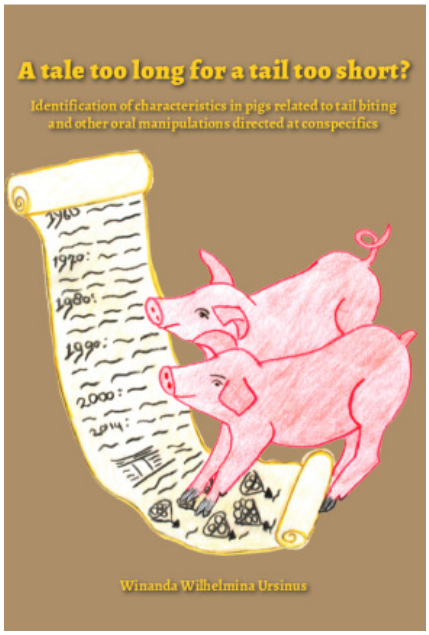
http://library.wur.nl/WebQuery/wurpubs/457142

By: Nanda Ursinus

Damaging biting behaviours (directed at pen mates) expressed by pigs are a huge problem in husbandry systems as they reflect and cause severe health and welfare problems, and economic losses. The expression of such undesired behaviours is thought to be a redirected exploration and foraging strategy that especially occurs when pigs are kept in a barren environment.

Most of the Dutch pigs – 99% – are currently tail-docked to prevent severe damage to victim pigs. However, societal pressure to stop tail-docking is increasing as the mutilation procedure effects animal integrity, is painful, and it does not target the actual underlying problem (biting is not fully prevented).

In this thesis, I had as main aim to identify biological characteristics of barren and enriched housed pigs that relate to their tendency to develop these damaging oral manipulative behaviours, with emphasis on tail biting behaviour.



The project showed that tail biting behaviour in intensively kept piglets with undocked tails can start as early as the lactation period, leading to small tail wounds (± 10%

of 480 piglets) observed at time of weaning (i.e. 4 weeks of age). Tail damage was largely prevented by providing straw-bedding, but tail wounds were not fully eliminated (1 pig out of 240 pigs was removed due to a tail wound).

As providing straw-bedding is not feasible in many intensive pig husbandry systems, the use of jute sacks as enrichment device was explored. In partly tail-docked gilts, jute sacks were able to reduce the presence of tail wounds five-fold and reduced the frequency of damaging biting behaviours up to 50%. Furthermore, jute sacks tended to reduce damage to the sows' tail inflicted by piglets during the lactation period.

Post-weaning, tail biting pens could be predicted by an increased activity and increased levels of pig and pen-directed (e.g. jute sack usage) oral manipulative behaviours. Displaying tail biting behaviour by individual pigs is often temporary and consequently inconsistent over time; once a tail biter is not always a tail biter. There seems to be one exception to this rule: gilts that were identified as high-tail biters during the rearing phase, were identified as high-tail biters during the nursery phase as well. This suggests that obsessive tail biters may be more consistent in displaying tail biting behaviour than other types of tail biting behaviour.

The main hazard in this is that obsessive tail biters are only occasionally present on farms and consequently but not surprisingly, it was hard to identify individual behavioural predictors of tail biting pigs. However, tail biters were likely to stem from a litter with a relatively high level of tail biting behaviour. Additionally, in a spin-off project with piglets that received a jute sack for three days (starting at 15 days of age), I saw that individual jute sack manipulation (i.e. nosing, chewing and rooting) is very promising in terms of predicting biting behaviours (mainly directed at other body parts than the tail or ears) at 12 weeks of age.

I also studied pig personality a bit closer; although there are indications that tail biters would be active copers during stressful situations, our study did not find consistent evidence for that. My results suggested a higher level of fearfulness expressed during a novel object test in tail biting pigs. This finding was accompanied with lower blood platelet serotonin levels (i.e. a neurotransmitter involved in for instance mood) in tail biting pigs. In a previous study, I also found signs that blood platelet serotonin and hippocampal serotonin activity were related to a pig's fearfulness. Tendencies to display tail biting and other injurious biting behaviours were also related to both phenotypic and genetic production parameters (e.g. growth

and litter size). My findings match literature about mental disorders in humans and behavioural abnormalities in other animal species (e.g. feather pecking in laying hens). Tryptophan (i.e. the precursor of serotonin) is involved in many biological processes, also in for instance the most important production parameter in pigs: growth.

Both phenotypic and genetic production parameters pointed in the direction of an association with (tail) biting behaviours in gilts, implying that pigs are searching for something with a nutritional value, possibly tryptophan. Although tail biting behaviour is not as consistently displayed in individual animals as previously expected, and the environment seems to play a large (or even the largest!) role in the development of damaging biting behaviours, the results show that also the role of genetics cannot be ignored.

Up until now it is difficult to capture the level of expressed tail biting in direct breeding values as phenotyping is too laborious. However, indirect breeding values or 'indirect genetic effects' have been associated with tail damage. Pigs differ in their heritable effect on their group mates' growth (i.e. indirect genetic effect on growth) and pigs with a positive effect on their group mates' growth were found to cause less tail damage. Tail biting behaviour in pigs thus seems to be caused by a variety of temporary states and more stable traits that influence their motivation to display foraging and exploratory behaviours.

In my view, preventing and reducing such unwanted behaviours requires a joint effort of science, livestock industry and society to optimize many factors at once: housing conditions, feeding, management and breeding of pigs.

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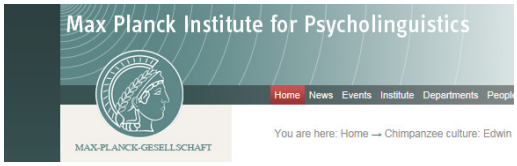
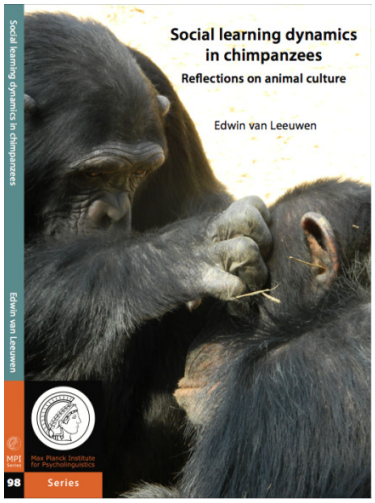


Edwin van Leeuwen defended his thesis 'Social learning dynamics in chimpanzees: reflections on (nonhuman) animal culture' on the 16th of June 2015. The PhD study was conducted at the Comparative Cognitive Anthropology group at the Max Planck Institute for Psycholinguistics in Nijmegen.

By: Edwin van leeuwen

I investigated social learning dynamics of chimpanzees with the aim to better understand non-human primate behavior and by extension human behavior.

On the one hand, acquiring knowledge about the specific ways in which other social animals organize their lives and how those strategies affect the interplay between social behavior and environments teaches us about the many forms and functions of evolutionary processes. On the other hand, chimpanzees are one of our closest living relatives and for that reason form an interesting species to compare to humans. By investigating social dynamics in closely related species, we might obtain valuable insights into our evolutionary blueprint. Following is a concise overview of the projects that I have worked on in light of these leitmotivs.



In Project 1, I looked at group-specific grooming tendencies within the so-called 'grooming handclasp' . This project was carried out in a Zambian sanctuary called "Chimfunshi" where four stable groups of chimpanzees live under semi-captive conditions in one stretch of Miombo woodland. The grooming handclasp (GHC) is a specific grooming posture where two chimpanzees clasp onto each other's arms, raise these arms up in the air, and groom each other with their other arm. The GHC is not part of the typical behavioral repertoire of chimpanzees and was therefore proposed to be a culturally transmitted trait. However, over time, the GHC has been observed in an increasing number of wild and captive populations and as such lost its initial appeal in terms of

nonhuman animal culture. My first project regains some of this initial appeal: I show that chimpanzees use group-specific styles by which they clasp their arms into each other's. These group specific styles were shared by all group members, were stable over three points in time (2007, 2010, 2011) and were not explained by ecological, genetic or phenotypic determiners. We conclude that GHC behavior is a socially transmitted trait with characteristics reminiscent of human culture (van Leeuwen et al., 2012).

In Project 2, I investigated whether chimpanzees are also inclined to copy arbitrary behavior from their group members. Whereas the GHC behavior is an intense social interaction and most likely fulfills a function within chimpanzees' social world, the behavior where chimpanzees put grass in their ears and leave it hanging there during subsequent activities seems less socially relevant and arguably devoid of a discernible function. Finding that chimpanzees copy this idiosyncratic behavior would indicate that chimpanzees' social learning proclivities would allow for arbitrary fads which are central to human cultures.

Similar to Project 1, I studied the four groups of semi-captive chimpanzees at Chimfunshi. I found that 8 of 12 chimpanzees belonging to the same group as the inventor of the grass-in-ear behavior (GIEB) also engaged in GIEB, while only one GIEB occurrence was observed in one of the three other groups. The distribution of GIEB over all subjects was highly unlikely to be due to chance. In conjunction with the fact that ecological and genetic influences are leveled out in the Chimfunshi environment (the groups live in similar woodlands and are not sorted on subspecies), this result led us to conclude that the GIEB diffused through social learning processes. Overall, we conclude that chimpanzees spontaneously copy arbitrary behavior and discuss our findings in light of human culture (van Leeuwen et al., 2013).

In project 3 and 4, I investigated whether chimpanzees

create their cultural diversity through the behavioral mechanism of conformity. Project 3 entails a critical review of the currently held conviction that conformity has been evidenced in chimpanzees. By scrutinizing methodological details, I advocate that the evidence so far is not conclusive and that chimpanzees might have been acting out of a conservative nature instead (van Leeuwen & Haun, 2013). Project 4 entails an empirical investigation of the theoretical critique advocated in Project 3. Studying one group of chimpanzees in the Wolfgang Kohler Research Center (Leipzig, Germany, in collaboration with Dr. Josep Call) and one group of chimpanzees in Chimfunshi, we show that when conservatism and conformity are pitted against each other, chimpanzees act conservatively rather than conforming to the majority of group members. As further empirical inquiry and a positive control for chimpanzees' capacity to flexibly adjust behavior,we subsequently pitted conservatism against the opportunity to obtain higher pay-offs. In this scenario, we found that chimpanzees abandon their familiar strategy and adopt the more profitable one. We conclude that chimpanzees do not readily conform to majorities but do favor increased payoffs over their familiar strategy (van Leeuwen et al., 2013).

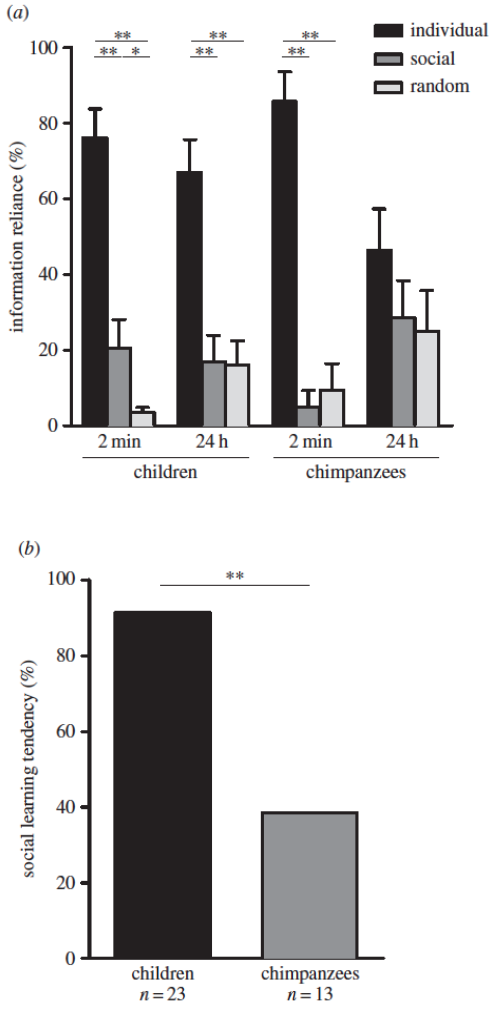


Figure: Children rely more on social information than chimpanzees do. (**a**) Mean (+s.e.m.) information reliance for the children and chimpanzees across bothtime-delay conditions as a percentage, and (**b**) percentage of children and chimpanzees who explored the location that had been observed to be rewarding for aconspecific during their first individual trial. One asterisk, **p** < 0.05; two asterisks, **p** <0.01.

In project 5 and 6, I investigated the differential preference for individually versus socially acquired information between chimpanzees and children. Project 5 entails an

extensive review of all purported conformity findings across the animal kingdom. Following up on project 3, I show that many of the conformity findings can be alternatively understood in terms of animals' general susceptibility to social information. I conclude with suggestions to improve the study of learning biases by embedding conformity more directly in social influence theory, by systematically complementing majority-influence manipulations with singleton-influence manipulations and by taking into account individuals' habit adherence (van Leeuwen & Haun, 2014).

Project 6 entails an empirical investigation of information source preferences in chimpanzees and 3-4 year old children. An experimental procedure was contrived in which chimpanzees and children obtained equally reliable individual and social information (from a conspecific model) about the location of a reward. The order by which the subjects obtained individual and social information was counter-balanced within and across subjects such that some subjects received individual information first and other subjects received social information first.

I found that both chimpanzees and children mostly relied on their individually acquired knowledge, regardless of the time delay between information acquisition and testing. However, in the trials where subjects received social information first, human children showed a stronger preference for integrating social information in their subsequent individual explorations than chimpanzees. We concluded that predictions on information usage when individuals are knowledgeable were confirmed that children may be more poised toward using social information in the absence of individual information than chimpanzees, and that this latter finding may explain part of the difference in cultural proliferation between humans and chimpanzees (van Leeuwen et al., 2014).

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Conferences & Meetings

- **Behaviour 2015,** Joint meeting of the International Ethological Conference (IEC), the Australasian Society for the Study of Animal Behaviour (ASSAB), and the Australasian Evolution Society (AES), 9-14 August, Cairns, Australia: http://www.behaviour2015.org/

- **IBAC 2015**, the 25th meeting of the International Bioacoustics Council, 7-12 September, Murnau, Bavaria, Germany: http://2015.ibac.info/

- **ISAE–2015**, 49th Congress of the International Society for Applied Ethology, 14-17 September, Saporro Hokkaido, Japan: http://www.jsaab.org/isae2015/

- **Zoology 2015**, the 21st Zoology Congress, formerly Benelux congress of Zoology, co-organized by the Royal Dutch and Belgian Zoological Societies, 8-9 October, Barbizon Hotel, Amsterdam, the Netherlands: http://www.zoology2015.nl

- **ISAE - Benelux Conference 2015**, 15 October at the "Hooibeekhoeve" in Geel, Belgium: https://www.applied-ethology.org/benelux.html.

- **NVG–2015**, Annual Meeting of the Netherlands Society for Behavioural Biology, 25-27 November, Soesterberg, the Netherlands: www.gedragsbiologie.nl

- **ASAB Winter Meeting 2015,** Animal Social Learning and Culture, 3-4 December, London, UK: http://asab.nottingham.ac.uk/meetings/

- **EHBEA–2016,** Annual meeting of the European Human Behaviour and Evolution Association, 4-8 April, London, UK: http://ehbea.com/

- **BGA–2016,** 46th Annual meeting of the Behavior Genetics Association, 20-23 June, Brisbane, Australia: http://bga.org/meetings/

- **ISBE–2016**, 16th congress of the International Society for Behavioral Ecology, 29 July-2 August, Exeter, UK: http://www.isbe2016.com/

- **ABS-2016**, 53th Annual Conference of the Animal Behavior Society, Missouri, USA: http://www.animalbehaviorsociety.org/2016/

- **EcoSummit 2016,** The 5th International EcoSummit Congress, Ecological Sustainability: Engineering Change, 29 August - 1 September, Montpellier, France: http://www.ecosummit2016.org/

- **ICBM 2016**, the international Congress of Behavioral Medicine, 7-10 December, Melbourne, Australia: http://www.icbm2016.com/

- **IOC-2018**, 27th International Ornithological Congress, Vancouver, Canada: http://ioc27.ca/