

Lo studio della personalità in animali non-umani

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Scrivi a quale specie appartiene l'animale che hai scelt...



Cane
Simpatico
Timido
Pauroso

Cane
1. gentile
2. simpatico
3. arrogante



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Four ways five factors are basic

Paul T. Costa Jr, Robert R. McCrae

- Analisi aggettivi di uso comune per descrivere altri individui (Allport & Odbert, 1936)
- Fattori stabili nel tempo e robusti al giudizio di valutatori indipendenti, replicati in diverse culture



Per loro natura i Big Five si riferiscono a comportamenti e interazioni tra esseri umani

Possono essere applicati al comportamento animale?

The Big Five dimension traits



Personality in Captive Killer Whales (*Orcinus orca*): A Rating Approach Based on the Five-Factor Model

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- Personale dell'acquario che ospitava ciascuna orca doveva osservarne il comportamento nell'arco della giornata
- Compilare un questionario indicando su scala 1-7 circa quanto ciascun aggettivo sia rappresentativo dell'individuo

Table 5
Personality Structure Obtained in This Study (According to Regularized Exploratory Factor Analysis) for Killer Whales Using the Five-Factor Model (Compared With Humans [Goldberg, 1990] and Chimpanzees [Úbeda & Llorente, 2015])

Adjectives	Killer whales This study	Humans Goldberg, 1990	Chimpanzees Úbeda & Llorente, 2015
Playful	Extraversion	Extraversion	Extraversion
Inquisitive	Extraversion	Openness	Extraversion
Cheerful	Extraversion	Extraversion	Extraversion
Sociable	Extraversion	Extraversion	Extraversion
Affectionate	Extraversion	Agreeableness	Extraversion
Active	Extraversion	Extraversion	Extraversion
Imitative	Extraversion	Openness	—
Friendly	Extraversion	Agreeableness	Extraversion
Gregarious	Extraversion	Extraversion	Extraversion
Inventive	Extraversion	Openness	Conscien-open
Patient	Conscien-agree	Agreeableness	Conscien-agree
Constant	Conscien-agree	Conscientiousness	Conscien-open
Peaceable	Conscien-agree	Agreeableness	Conscien-agree
Predictable	Conscien-agree	Conscientiousness	Conscien-agree
Not defiant	Conscien-agree	Agreeableness	Conscien-agree
Gentle	Conscien-agree	Agreeableness	Extraversion
Stable	Conscien-agree	Neuroticism	Conscien-agree
Trustful	Conscien-agree	Neuroticism	Extraversion
Not bullying	Conscien-agree	Agreeableness	Conscien-agree
Calm	Conscien-agree	Neuroticism	Conscien-agree
Stubborn	Conscien-agree	Conscientiousness	Conscien-open
Impulsive	Conscien-agree	Extraversion	Conscien-agree
Generous	Conscien-agree	Agreeableness	Conscien-agree
Unemotional	Conscien-agree	Neuroticism	Dominance
Bold	Dominance	Extraversion	Extraversion
Brave	Dominance	Neuroticism	Dominance
Dominant	Dominance	Neuroticism	Dominance
Protective	Dominance	Conscientiousness	—
Intelligent	Dominance	Openness	Conscien-open
Laborious	Extraversion	Openness	Conscien-open
Helpful	Conscien-agree	Agreeableness	Extraversion
Prudent	Careful	Conscientiousness	Conscien-agree
Sensitive	Careful	Agreeableness	Extraversion
Sympathetic	Conscien-agree	Agreeableness	Extraversion
Organized	Dominance	Conscientiousness	Conscien-open
Responsible	Conscien-agree	Conscientiousness	Conscien-agree
Independent	—	Neuroticism	Conscien-open
Not decisive	—	Conscientiousness	Extraversion

Note. Ext = Conscien-agree = Conscien-agreeableness; Conscien-open = Conscien-openness.

Pros e cons di applicare i Big Five ad altri animali?

Ma la personalità non si riferisce alle persone?

- Antropomorfismo: l'attribuzione di tratti umani ad altri animali
- Un comportamento/tratto può avere significati molto diversi per altri animali



Diversi modi di riferirsi allo stesso concetto

- Copying style/strategies (Koolhaas et al., 1999)
- Temperament (Reale et al., 2007)
- Behavioural profile (Groothuis and Carere, 2005)
- Behavioural polymorphism (Canestrelli et al., 2016)
- **Behavioural syndromes** (Sih et al., 2004)

Behavioural syndromes

Insieme di comportamenti correlati tra loro:

1. nel tempo;
2. in diversi contesti e situazioni;
3. in modo indipendente dalle misure (test) impiegati per quantificarli.

Continuum reattività-proattività

Reactive (timidi, *shy*):

- Più **neofobici**;
- Meno esplorativi;
- Meno aggressivi;
- Di basso rango;



Proactive (audaci, *bold*):

- Più **neofilici**;
- Più esplorativi;
- Più aggressivi;
- Di alto rango;



Pulcino proattivo: Consistenza temporale

Giovane



Adulto



Pulcino proattivo: Consistenza contestuale

Contesto foraggiamento



Contesto esplorazione



Pulcino proattivo: Consistenza di misurazione

Test “**Novel Environment**”

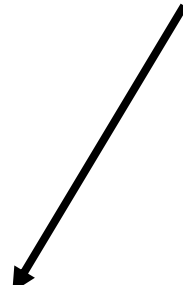
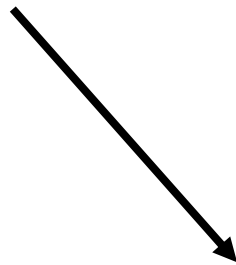
- Latenza primo passo
- Area esplorata
- Nuovo cibo trovato

Test “**Novel Object**”

- Latenza primo passo
- Latenza contatto

Test “**Latency to feed under predation**”

- Latenza avvicinamento cibo in presenza di un predatore
- Quantità di cibo mangiato



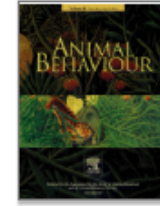
Proattività

Personalities of Octopuses (*Octopus rubescens*)

Jennifer A. Mather and Roland C. Anderson

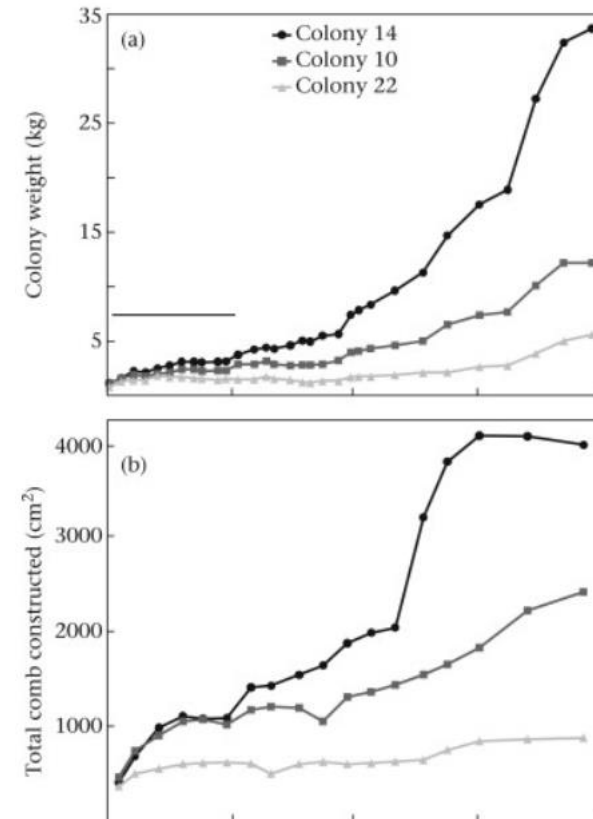
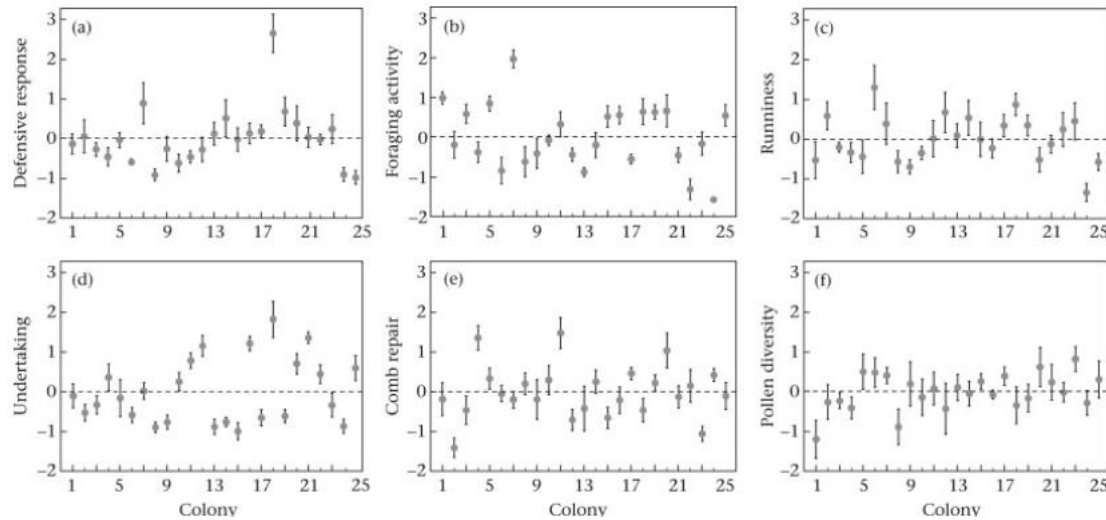
Large individual differences are commonly found in the behavior of octopuses, even in standardized situations. *Octopus rubescens* ($n = 44$) were tested in 3 situations (alerting, threat, and feeding) to quantify this variation. A factor analysis of resulting behaviors isolated 3 orthogonal dimensions of their variability, Activity, Reactivity, and Avoidance, which accounted for 45% of the variance. The similarity of these factors to dimensions of personality in humans and individual differences in animals suggests there may be commonalities in such variation across phyla.





Collective personalities in honeybee colonies are linked to colony fitness

Margaret K. Wray^a  , Heather R. Mattila^{b, 1}, Thomas D. Seeley^a



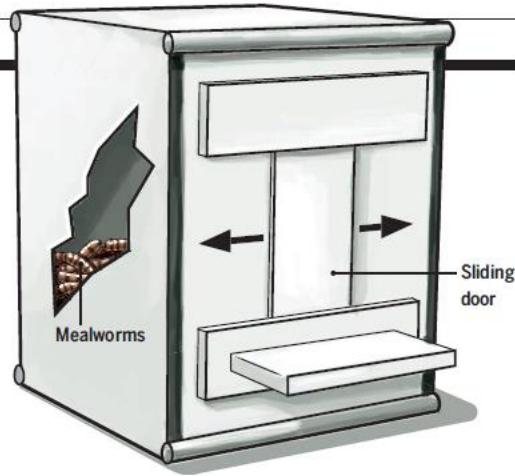
THE POWER OF PERSONALITY

From birds to lizards to spiders, individuals exhibit consistent differences in behavior that shape the fate of their species

By Elizabeth Pennisi

Birds solve a puzzle

Using "puzzle boxes"—feeding stations that require a bird to slide a door in a certain direction to open the box and get the food—researchers at a University of Oxford field site in the United Kingdom are exploring how traditions spread among great tits. The work is part of a larger effort to understand the birds' social networks and how they are shaped by personalities.



1 As a great tit trained to solve the "puzzle" opens the box to reach the food, other birds observe.

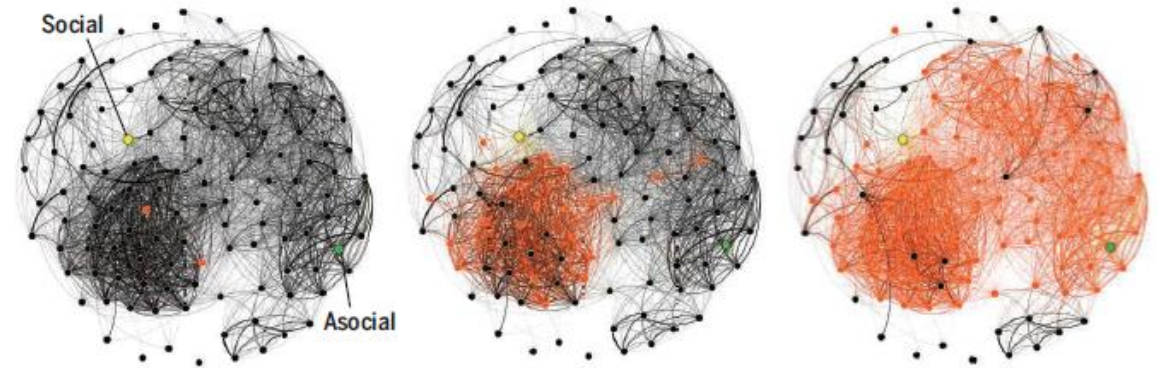


2 An observer then tries to open the box while another bird looks on, and the tradition spreads.



Social networks speed learning

Birds at the field site wear microchips that make it possible to map their social connections, which are more extensive for birds with bold personalities. The networks affect how knowledge spreads through the flock.



A social (**yellow**) and an asocial bird (**green**) are trained on the puzzle box.

The skill (**red**) spreads faster from the social than from the asocial bird.

Within 20 days, 72% of the great tits know how to work the puzzle box.

Fear of novelty in infant rats predicts adult corticosterone dynamics and an early death

S. A. Cavigelli and M. K. McClintock [Authors Info & Affiliations](#)

December 12, 2003 | 100 (26) 16131-16136 | <https://doi.org/10.1073/pnas.2535721100>

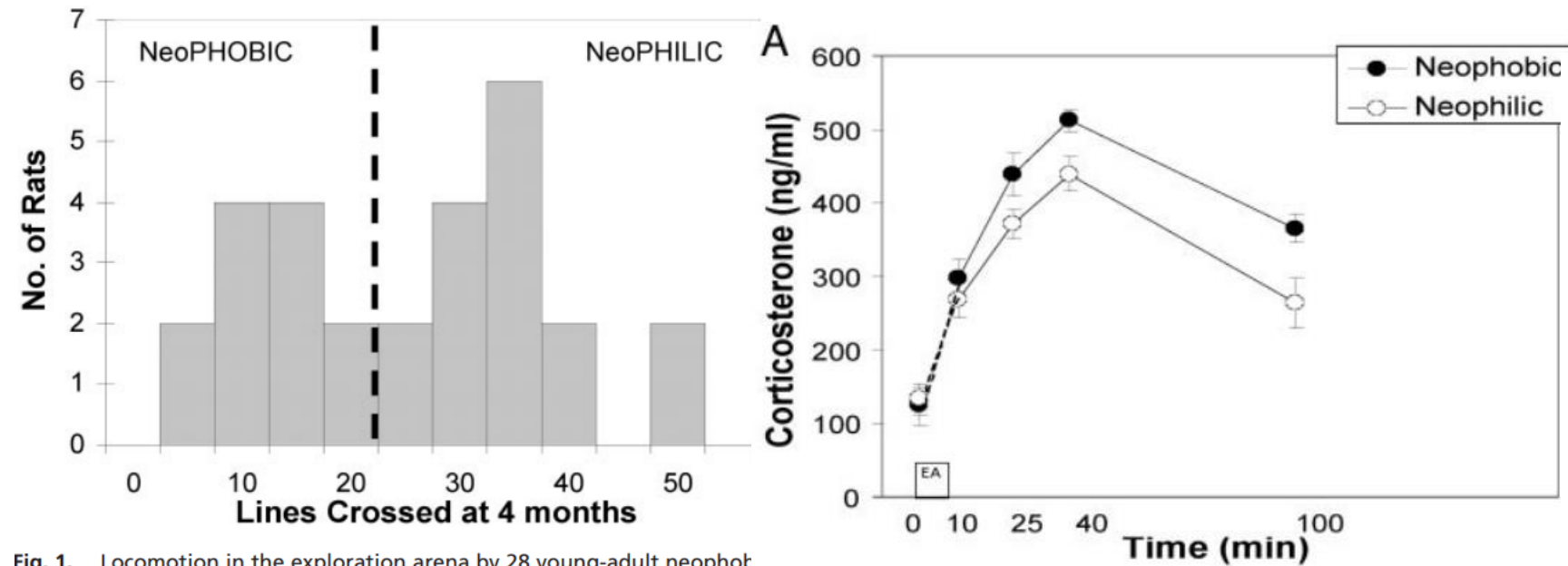


Fig. 1. Locomotion in the exploration arena by 28 young-adult neophob and neophilic males.

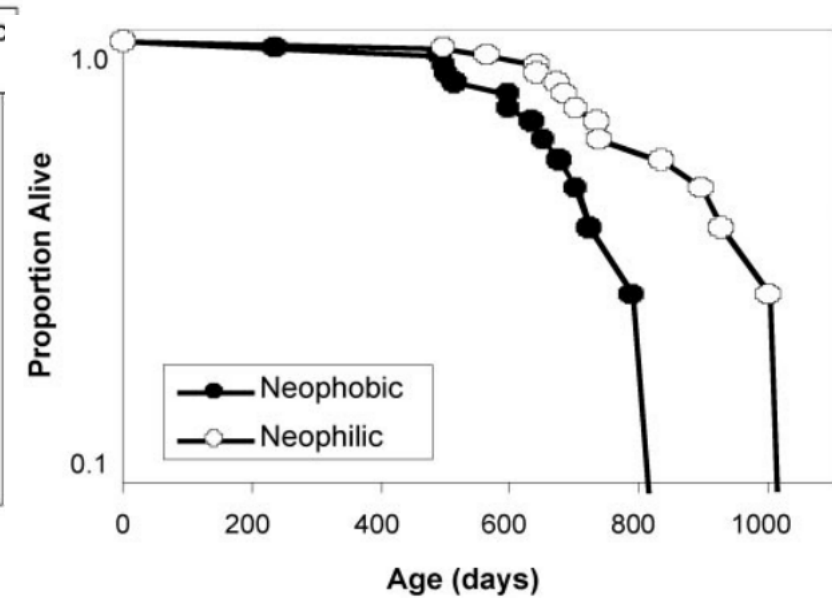



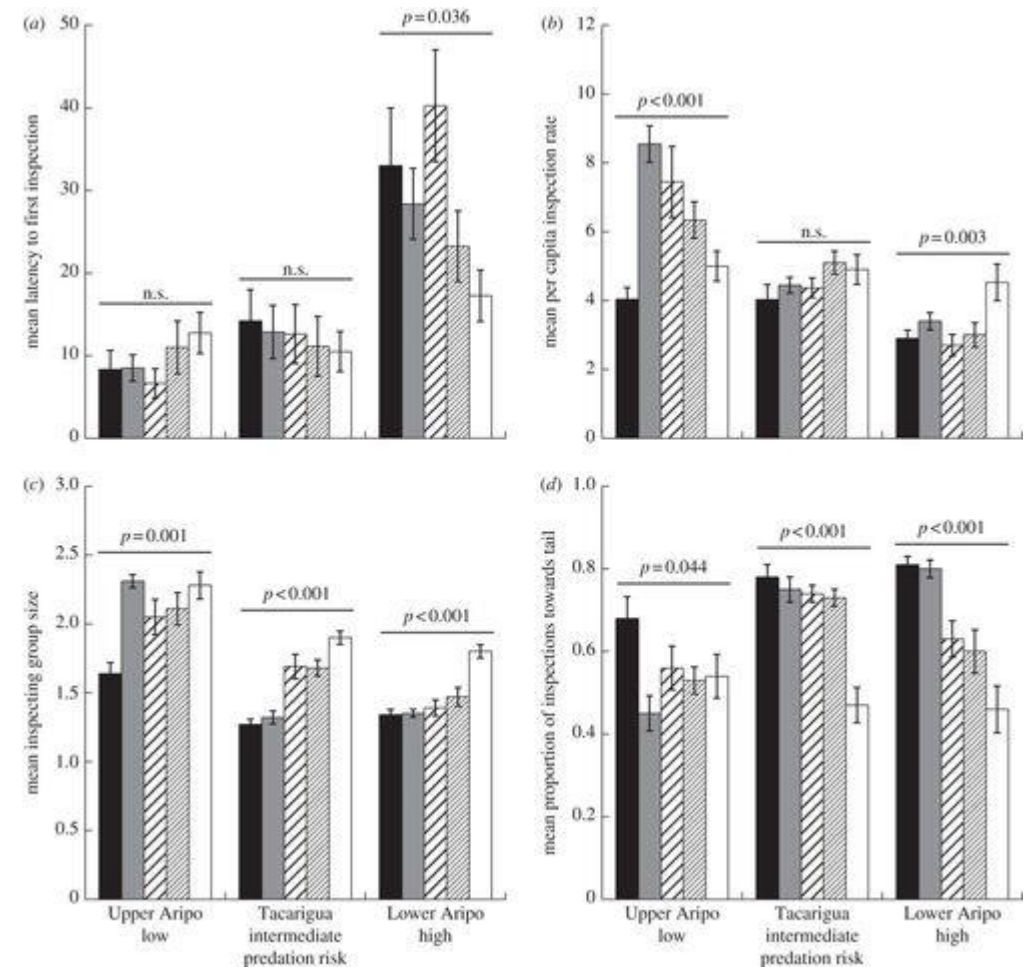
Fig. 3. Lifespan of neophobic (●) and neophilic (○) males.

Phenotypically plastic neophobia: a response to variable predation risk

Grant E. Brown , Maud C. O. Ferrari, Chris K. Elvidge, Indar Ramnarine and Douglas P. Chivers

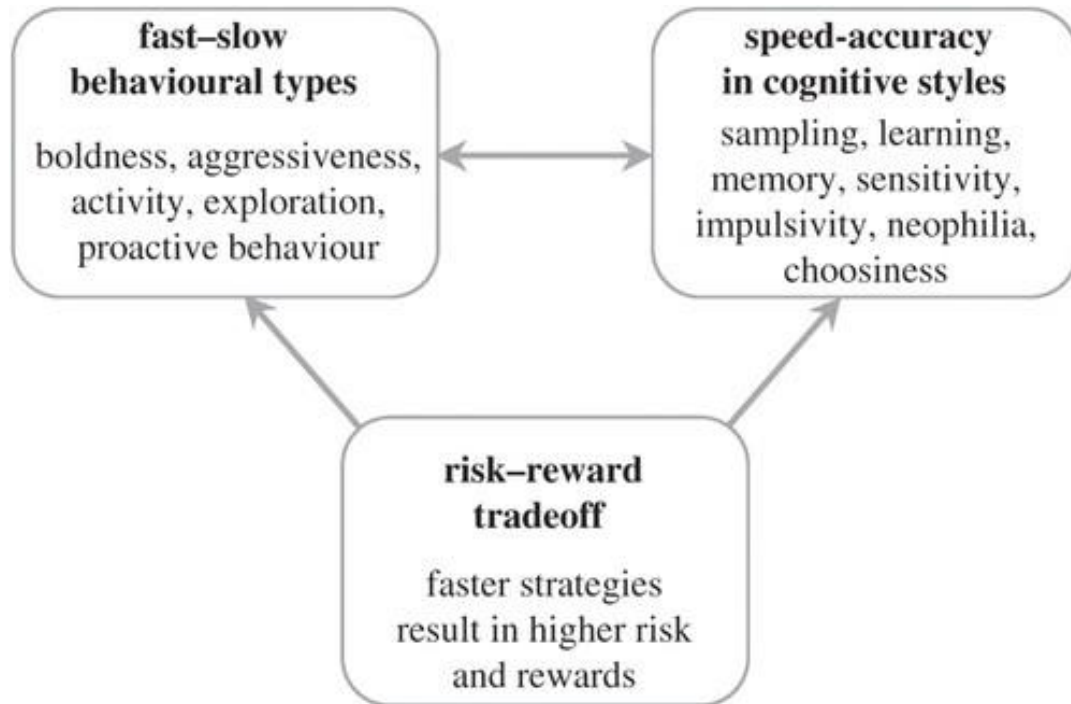
Published: 07 April 2013 | <https://doi.org/10.1098/rspb.2012.2712>

- Agendo sul contesto è possibile alterare l'espressione delle caratteristiche comportamentali degli animali
- Pesci d'acqua dolce sono più neofobici in habitat con alta frequentazione di predatori
- Un comportamento più "cauto" consente agli animali di sopravvivere più a lungo
- La convivenza di caratteristiche comportamentali opposte all'interno della medesima popolazione facilita l'adattamento ai cambiamenti che si verificano nell'habitat



Personalità e cognizione

Differenze individuali nelle capacità cognitive sono funzionalmente collegata a variazioni nel comportamento



Review article

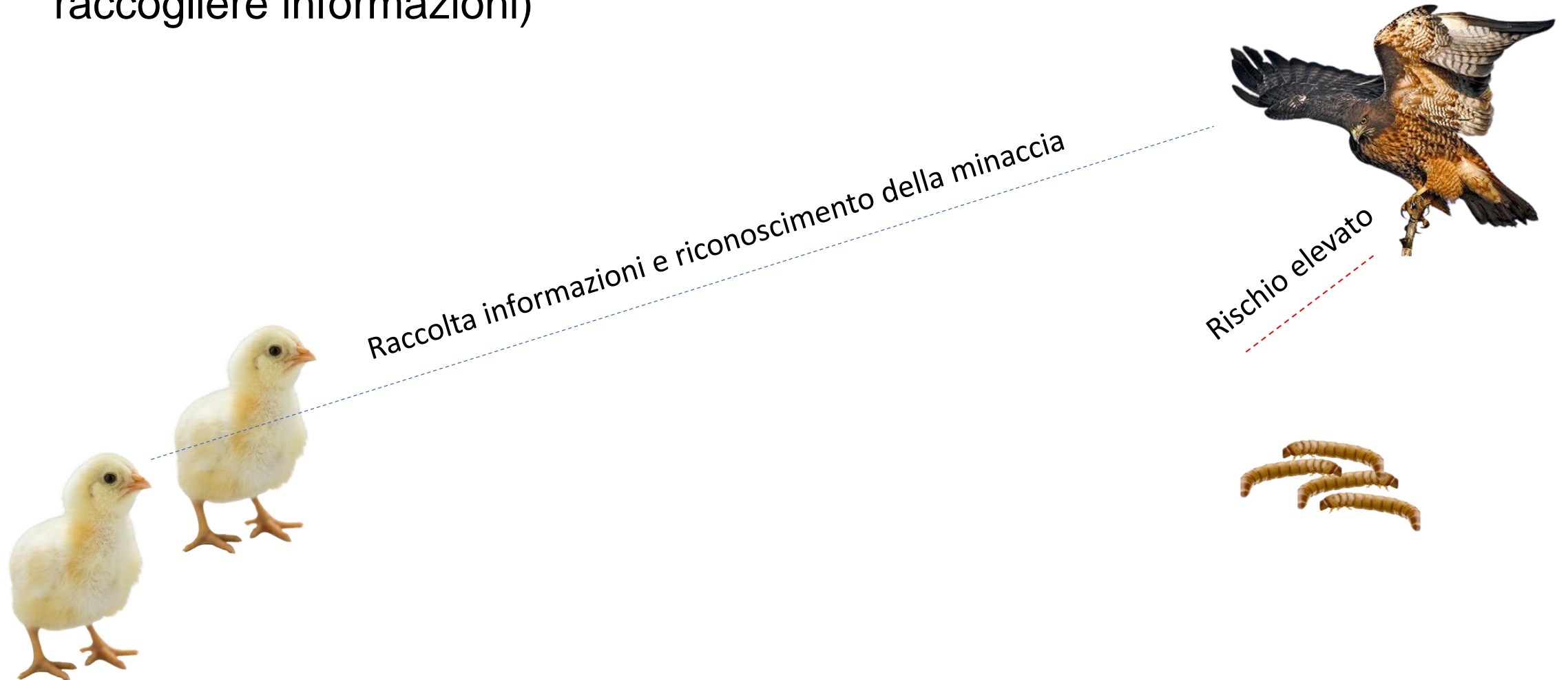
Linking behavioural syndromes and cognition: a behavioural ecology perspective

Andrew Sih  and Marco Del Giudice

Published: 05 October 2012 | <https://doi.org/10.1098/rstb.2012.0216>

Trade off

- Compromesso tra caratteristiche vantaggiose ma conflittuali del comportamento (ad esempio, proattività nel comportamento e precisione nel raccogliere informazioni)



Feedback loop

- Se un comportamento produce un esito favorevole per l'individuo, allora l'animale continuerà a ripeterlo.
- Così emergono e si mantengono le differenze stabili tra individui.



Proattività +



Reattività -



To sum up:

- Esistono differenze nel comportamento degli animali che sono costanti nel tempo e nei contesti
- Il grado con cui tali differenze si esprimono negli individui influenza il fitness individuale e della popolazione
- Le differenze comportamentali sono associate a differenze nei processi cognitivi che determinano le interazioni animale-ambiente