



UNIVERSITÀ DEGLI STUDI DI TORINO

Laurea Honoris Causa

LAUDATIO DI ALISON JOLLY

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*Aula Magna del Rettorato
23 novembre 2012*

Alison Jolly's focus is the evolution of advanced faculties, leading to the debate on human-animal divide.



Dr. Alison Jolly * Cyril Rouso,
www.ruoso-grundman.com

Over the last few decades, comparative cognitive research has focused on the pinnacles of mental evolution, asking all-or-nothing questions such as which **animals** (if any) possess a theory of mind, culture, linguistic abilities, future planning, and so on.

Research programs adopting this top-down perspective have often pitted one taxon against another, resulting in sharp dividing lines. Insight into the **underlying mechanisms** has lagged behind (DeWaal & Ferrari, Trends in cognitive science 2010)



As early as the 60's Alison Jolly began a bottom-up approach to the evolution of primate abilities by a wide comparative study of prosimians

Manipulation - morphological constraints on manipulation skills



Bishop, A. (1962) Control of the hand in lower primates. Ann. N. Y. Acad. Sci. 102: 316-337

As early as the 60's Alison Jolly began a bottom-up approach to the evolution of primate abilities by a wide comparative study of prosimians

Learning



Jolly, A. (1964) Choice of cue in prosimian learning. *Animal Behaviour*. 12: 571-577

She had a pivotal role in the change in focus that now seems to be under way, with increased appreciation that the basic building blocks of cognition might be shared across a wide range of species.

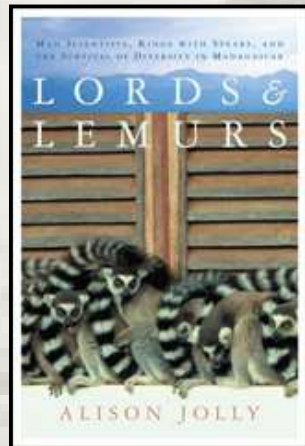
This bottom-up perspective, which focuses on the constituent capacities underlying larger cognitive phenomena, is more in line with both neuroscience and evolutionary biology.

(DeWaal & Ferrari, 2010)



She has also been deeply interested in the evolution of social behavior.

As early as the 60's Alison Jolly went to Madagascar



...and she met the maki



Cyril Rouso, www.ruoso-grundman.com

The females studying females changed the image of primate societies



Alison Jolly began studying lemur behavior at
Berenty Reserve in 1963.

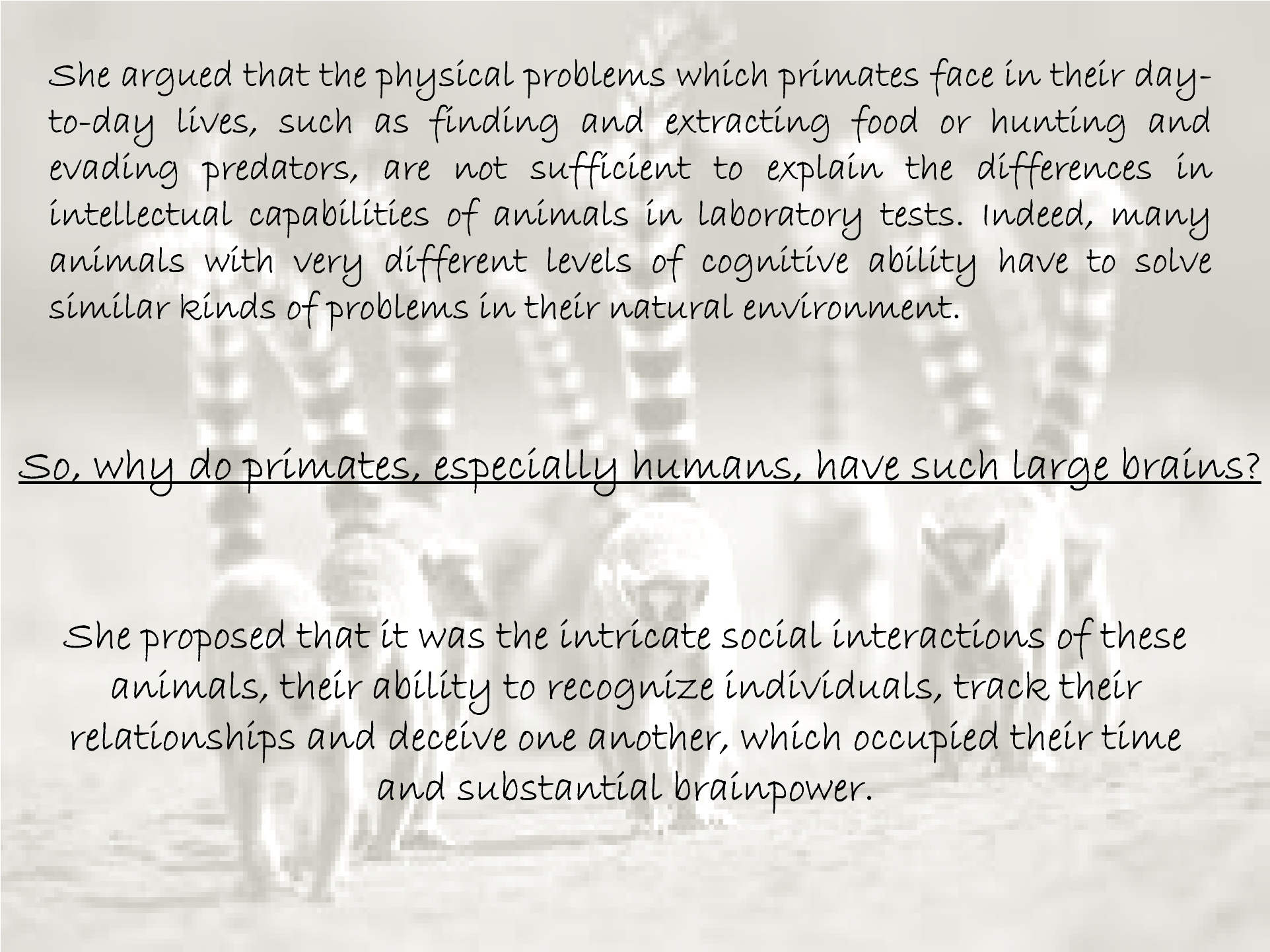
... the fledgling concept of social intelligence was explicitly formulated over 50 years ago by Jolly (1966)

Lemur Social Behavior and Primate Intelligence

**The step from prosimian to monkey intelligence
probably took place in a social context.**

Alison Jolly

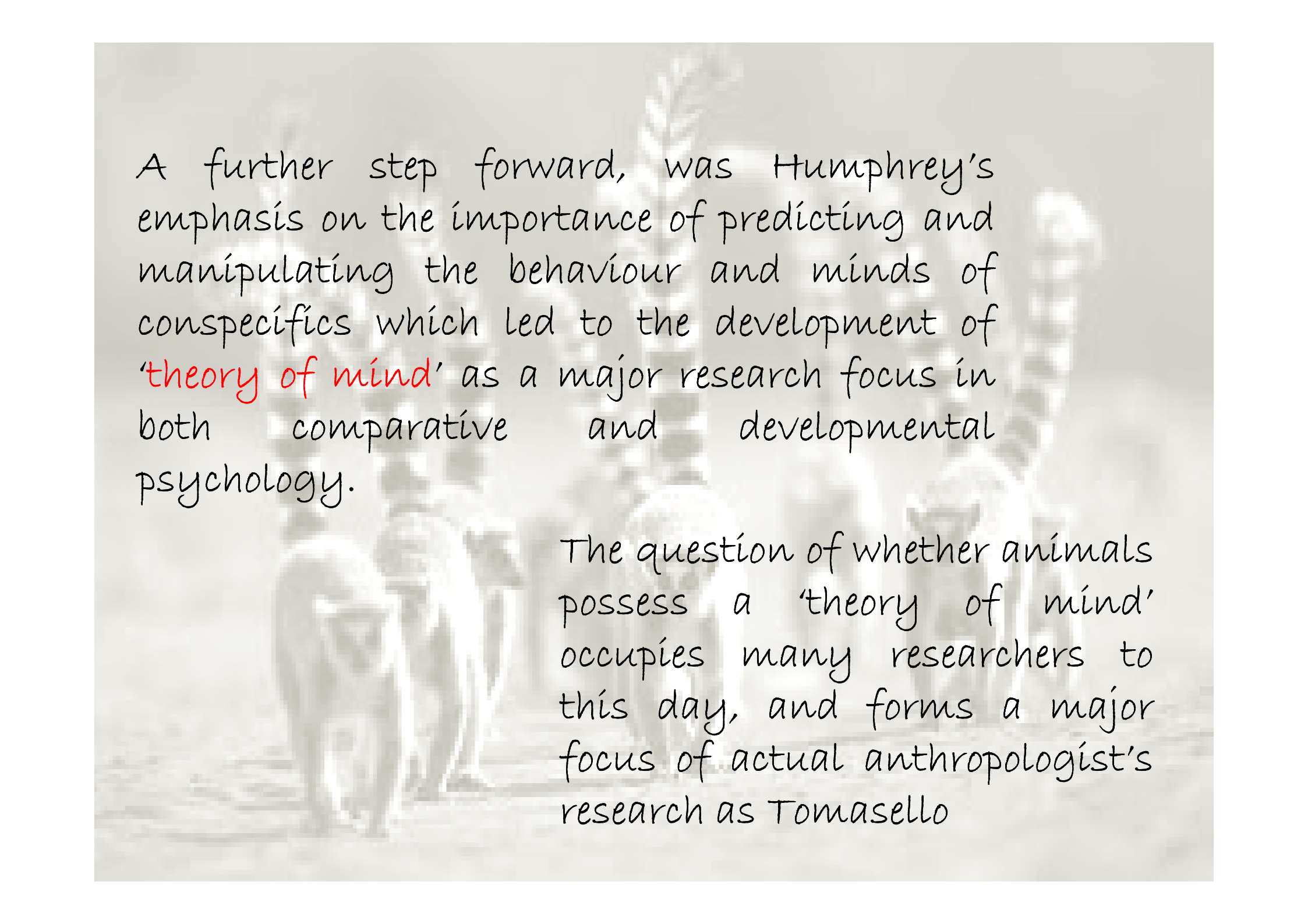
Jolly, A. (1966) Lemur social behavior and primate intelligence. *Science* 153: 510-506

A group of chimpanzees is shown in a natural, wooded environment. Some chimpanzees are standing on the ground, while others are perched on tree branches. The background is filled with trees and foliage, creating a sense of a wild, natural habitat.

She argued that the physical problems which primates face in their day-to-day lives, such as finding and extracting food or hunting and evading predators, are not sufficient to explain the differences in intellectual capabilities of animals in laboratory tests. Indeed, many animals with very different levels of cognitive ability have to solve similar kinds of problems in their natural environment.

So, why do primates, especially humans, have such large brains?

She proposed that it was the intricate social interactions of these animals, their ability to recognize individuals, track their relationships and deceive one another, which occupied their time and substantial brainpower.



A further step forward, was Humphrey's emphasis on the importance of predicting and manipulating the behaviour and minds of conspecifics which led to the development of 'theory of mind' as a major research focus in both comparative and developmental psychology.

The question of whether animals possess a 'theory of mind' occupies many researchers to this day, and forms a major focus of actual anthropologist's research as Tomasello

Research report

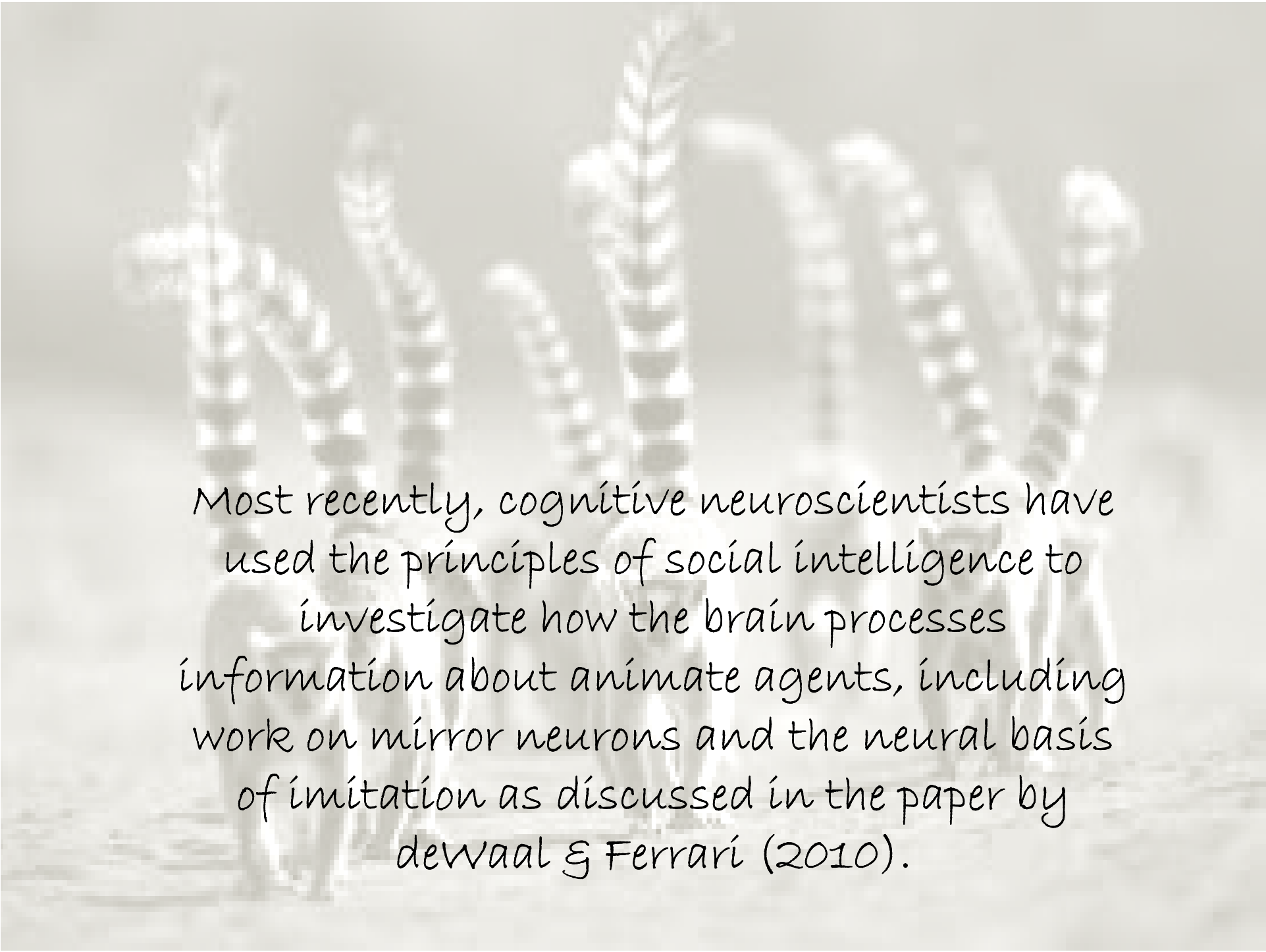
Premotor cortex and the recognition of motor actions

Giacomo Rizzolatti *, Luciano Fadiga, Vittorio Gallese, Leonardo Fogassi

Istituto di Fisiologia Umana, Università di Parma, Via Gramsci 14, I-43100, Parma, Italy

Accepted 22 August 1995

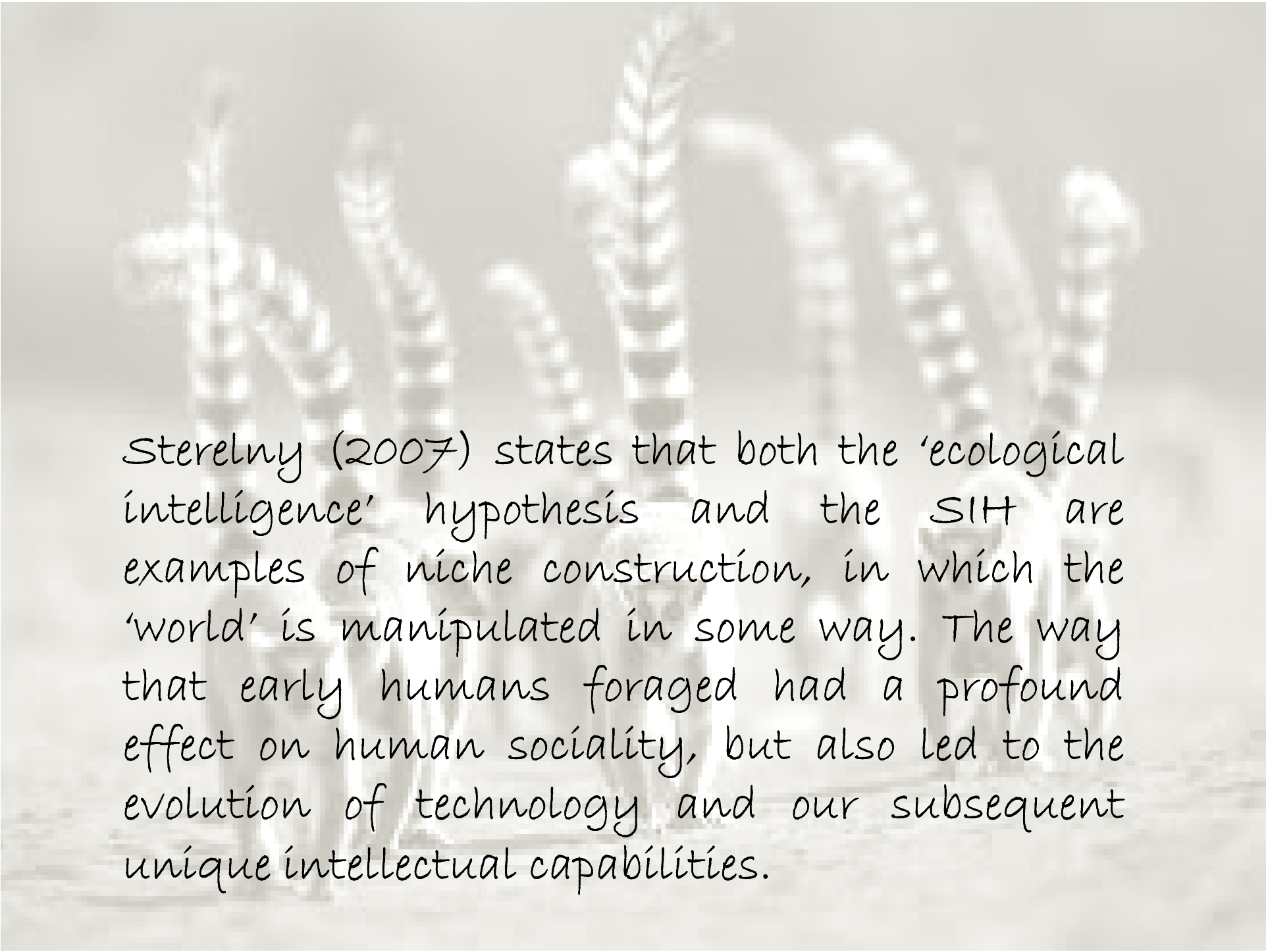
Mirror neurons are a class of neurons (networks) in the premotor cortex which respond to the sight of particular actions and their associated motor patterns performed by the same individual who witnessed the actions. These neurons have been ascribed a multitude of functions, from imitation to empathy to language.



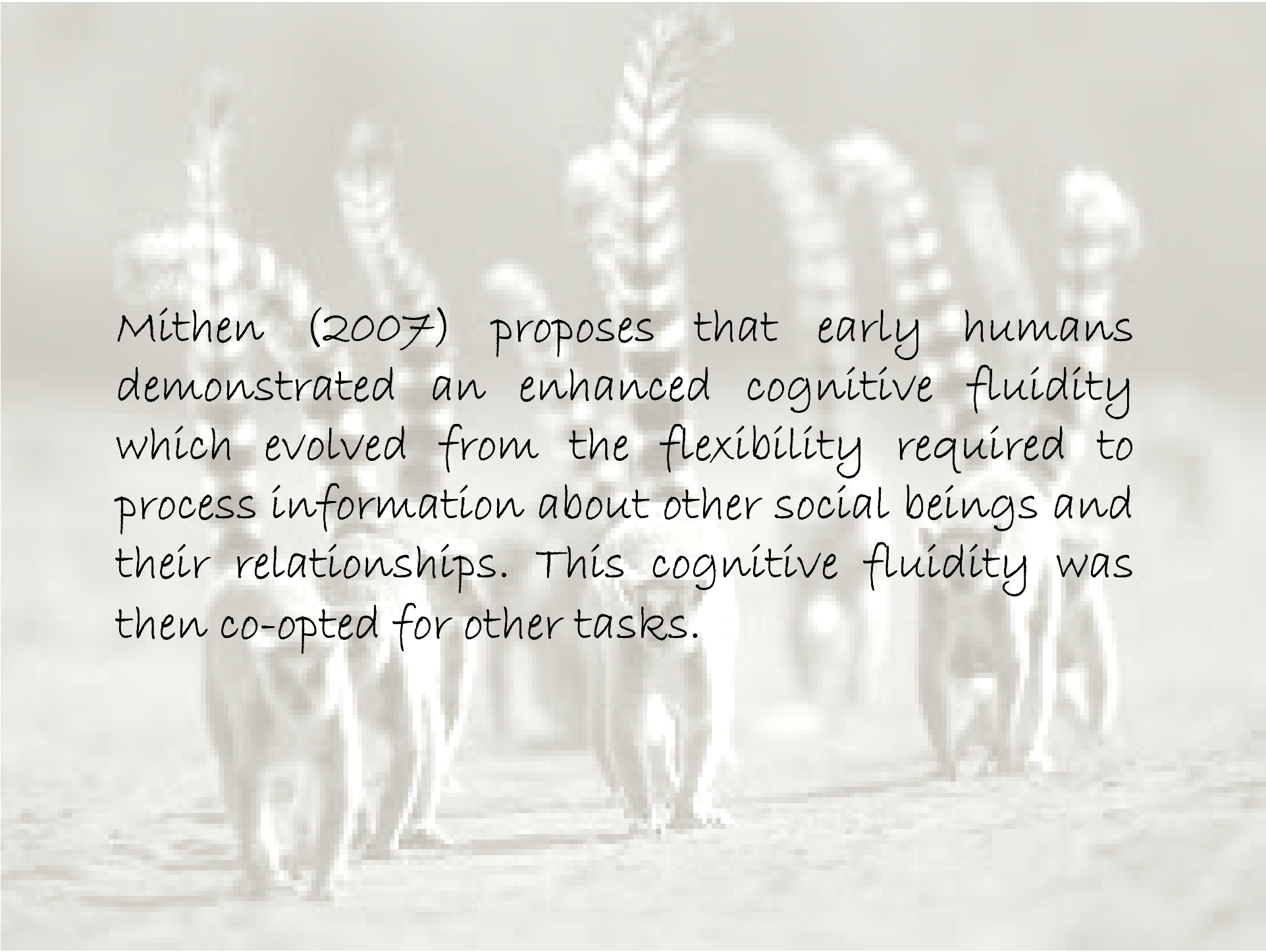
Most recently, cognitive neuroscientists have used the principles of social intelligence to investigate how the brain processes information about animate agents, including work on mirror neurons and the neural basis of imitation as discussed in the paper by de Waal & Ferrari (2010).

Gallese (2007) expands his theory that mirror neurons are essential nodes of a 'theory of mind' network by suggesting that they play a role in **linking mental states in the self** with the same mental states in another (simulation). He goes further to suggest that mirror neurons allow the sharing of communicative intentions, and foster cooperation and collaboration with others (see also Moll & Tomasello 2007) through a process of empathy and embodied simulation.

Perhaps the most striking application of the SIH has been as a tool to describe how human intelligence may have evolved, how early human societies were structured and how the development of these societies leads to technological advances including farming, computers and communication between individuals living thousands of miles apart.

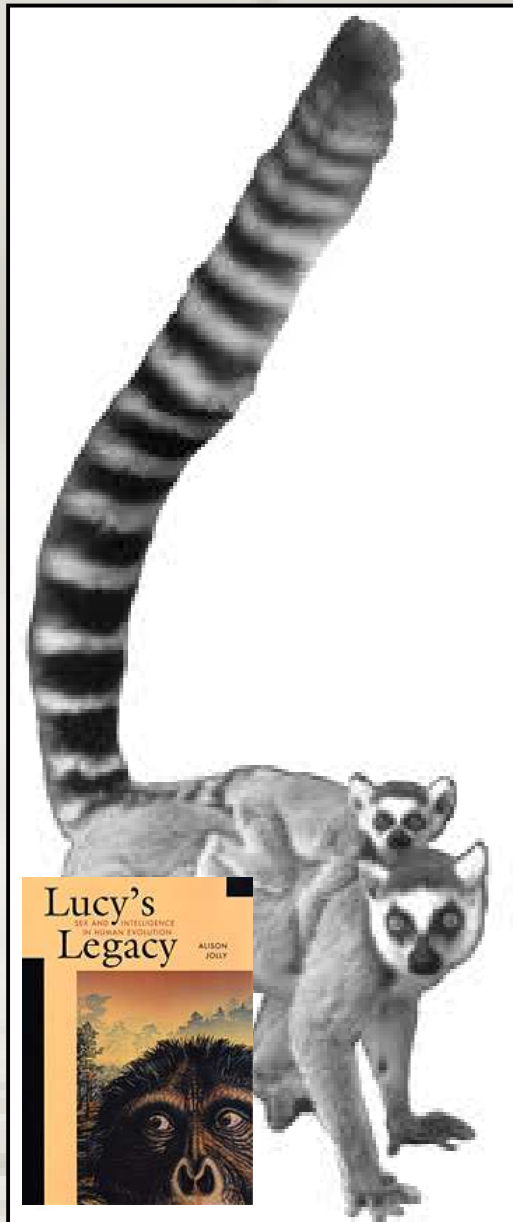


Sterelny (2007) states that both the 'ecological intelligence' hypothesis and the SIH are examples of niche construction, in which the 'world' is manipulated in some way. The way that early humans foraged had a profound effect on human sociality, but also led to the evolution of technology and our subsequent unique intellectual capabilities.



Mithen (2007) proposes that early humans demonstrated an enhanced cognitive fluidity which evolved from the flexibility required to process information about other social beings and their relationships. This cognitive fluidity was then co-opted for other tasks.

The females studying females changed the image of primate societies



Alison Jolly believes that biologists have an important story to tell about being human—not the all-too-familiar tale of selfishness, competition, and biology as destiny but rather one of cooperation and interdependence, from the first merging of molecules to the rise of a species inextricably linked by language, culture, and group living. This is the story that unfolds in *Lucy's Legacy*, the saga of human evolution as told by a world-renowned primatologist who works among the female-dominant ringtailed lemurs of Madagascar.

Long term field studies

For 50 years, she has studied the ring-tailed and white sifaka lemurs in Madagascar, primarily at the Berenty Reserve, a small private reserve located in the desert area of the island nation.

She has authored countless articles on lemur behavior, as well as books



Photo by Cesare Avesani Zaborra



Photo by Viviana Sorrentino



Photo by Daniela Antonacci

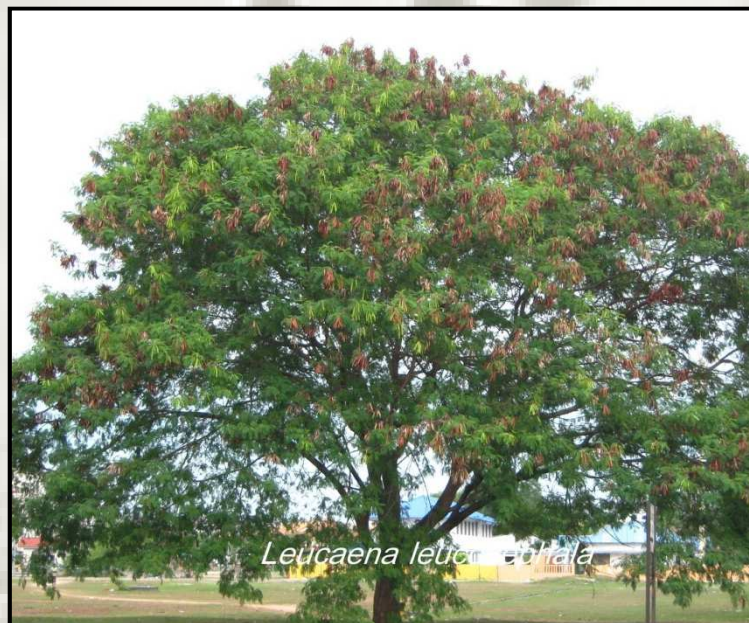


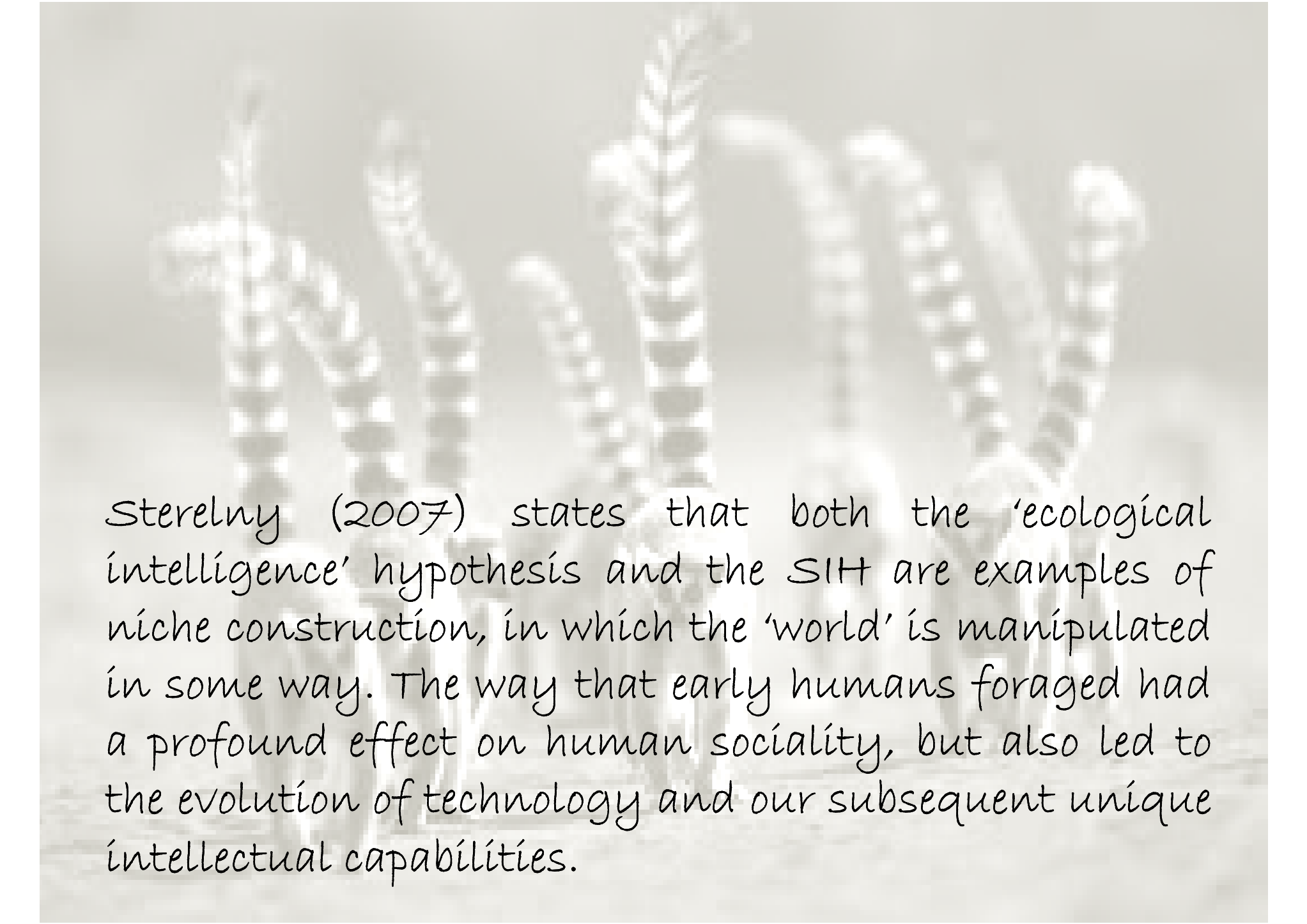
Photo by Viviana Sorrentino

27 researchers work now at Berenty

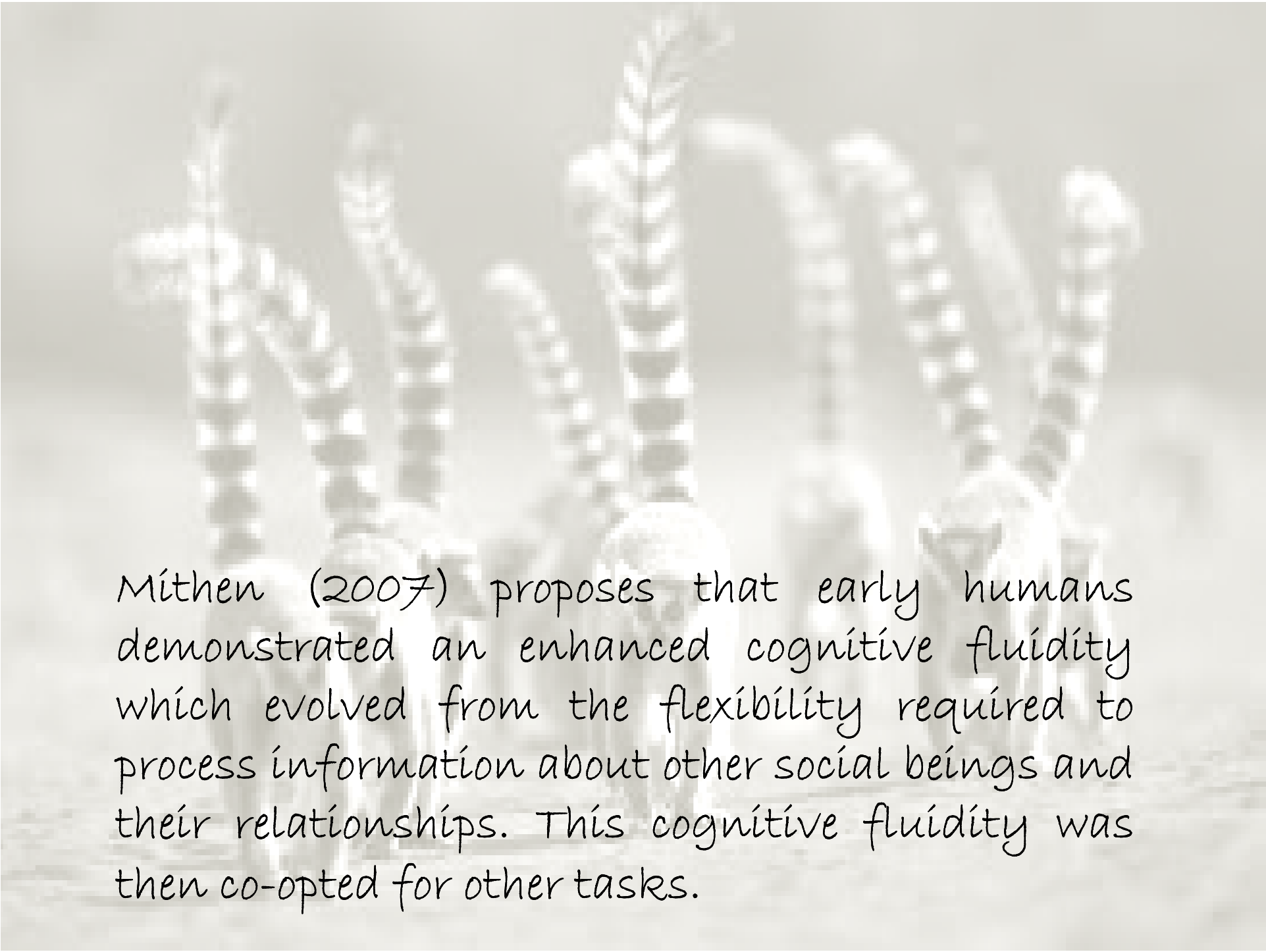


Photo by Cesare Avesani





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She has taught at such diverse institutions as the University of Zambia; Cornell, Princeton and Yale in the United States; and Cambridge University in England.



She has served as the president of the International Primatological Society and was named an Officer of the National Order of Madagascar.

She has received multiple other awards for her research and conservation efforts, but perhaps....



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... her most meaningful distinction came in 2006 when a new species of mouse lemur (*Microcebus jollyae*) was named in her honor.

Currently Alison Jolly is based at Sussex University in the United Kingdom.



Jolly's Mouse Lemur
Microcebus jollyae

Design from Lemurs of Madagascar.
Conservation International