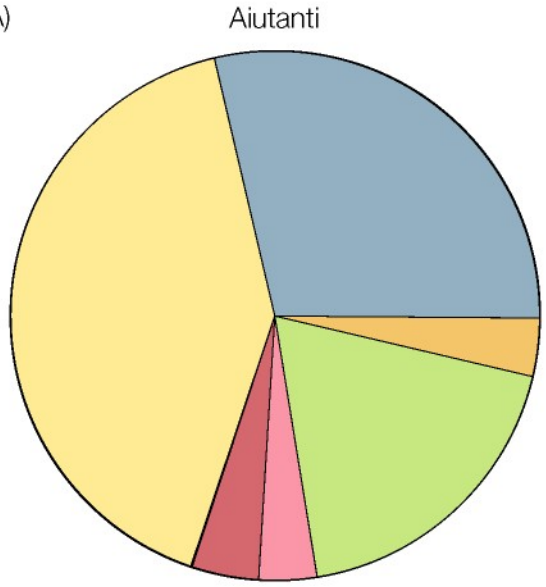
L’evoluzione del comportamento sociale

TABLE 13.1 *Some potential costs and benefits of social living*

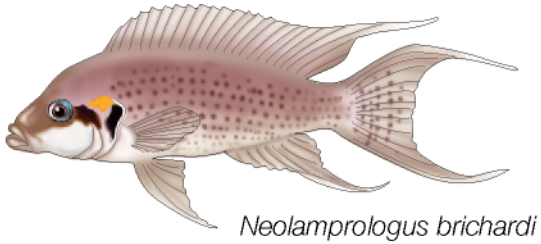
Costs	Benefits
Greater conspicuousness of clumped individuals to predators	Defense against predators via the dilution effect or via mutual defense (see Chapter 6)
Greater transmission of disease and parasites among group members	Opportunities to receive assistance from others in dealing with pathogens
More competition for food among group members	Improved foraging via the information center effect (see Chapter 7)
Time and energy expended by subordinates in dealing with more dominant companions	Subordinates are granted permission to remain safely within the group
Greater male vulnerability to cuckoldry	Opportunity for some males to cuckold others
Greater female vulnerability to egg tossing, egg dumping, and other forms of reproductive interference by companions	Opportunity to toss the eggs of others, dump eggs in others' nests, and interfere with the reproduction of competitors

(A)



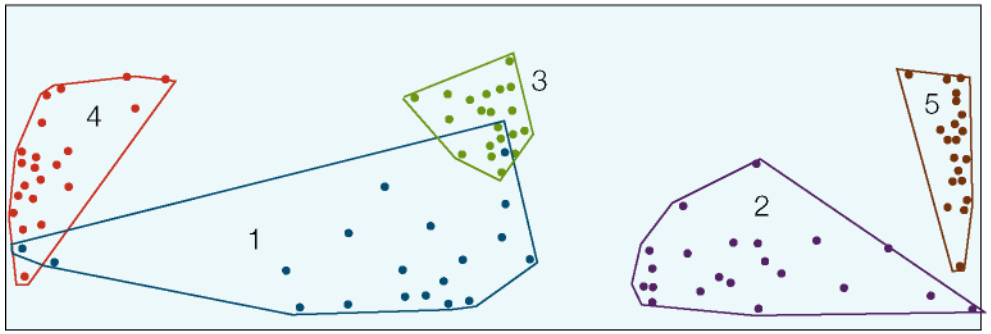
(B)

Comportamenti sociali	Comportamento agonistico
	Comportamento di sottomissione
Cura diretta della covata	Pulizia delle uova
Mantenimento del territorio	Pulizia del fondo
	Scavo
	Trasporto



Neolamprologus brichardi

Giorno 1



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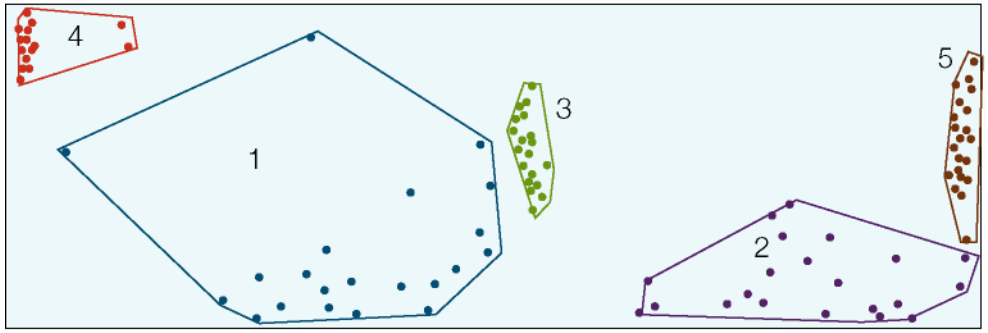

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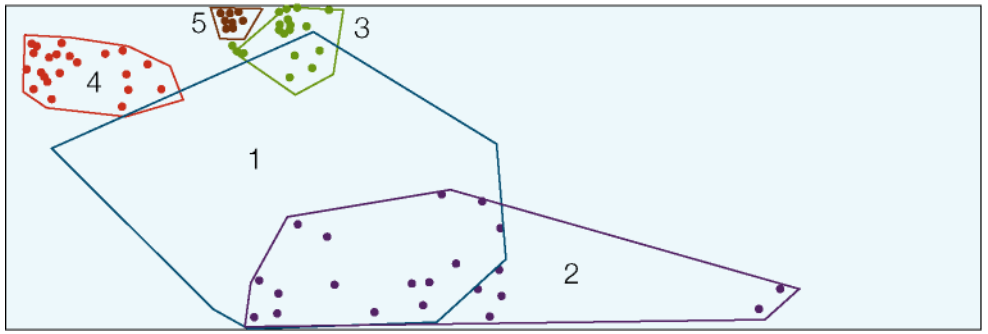
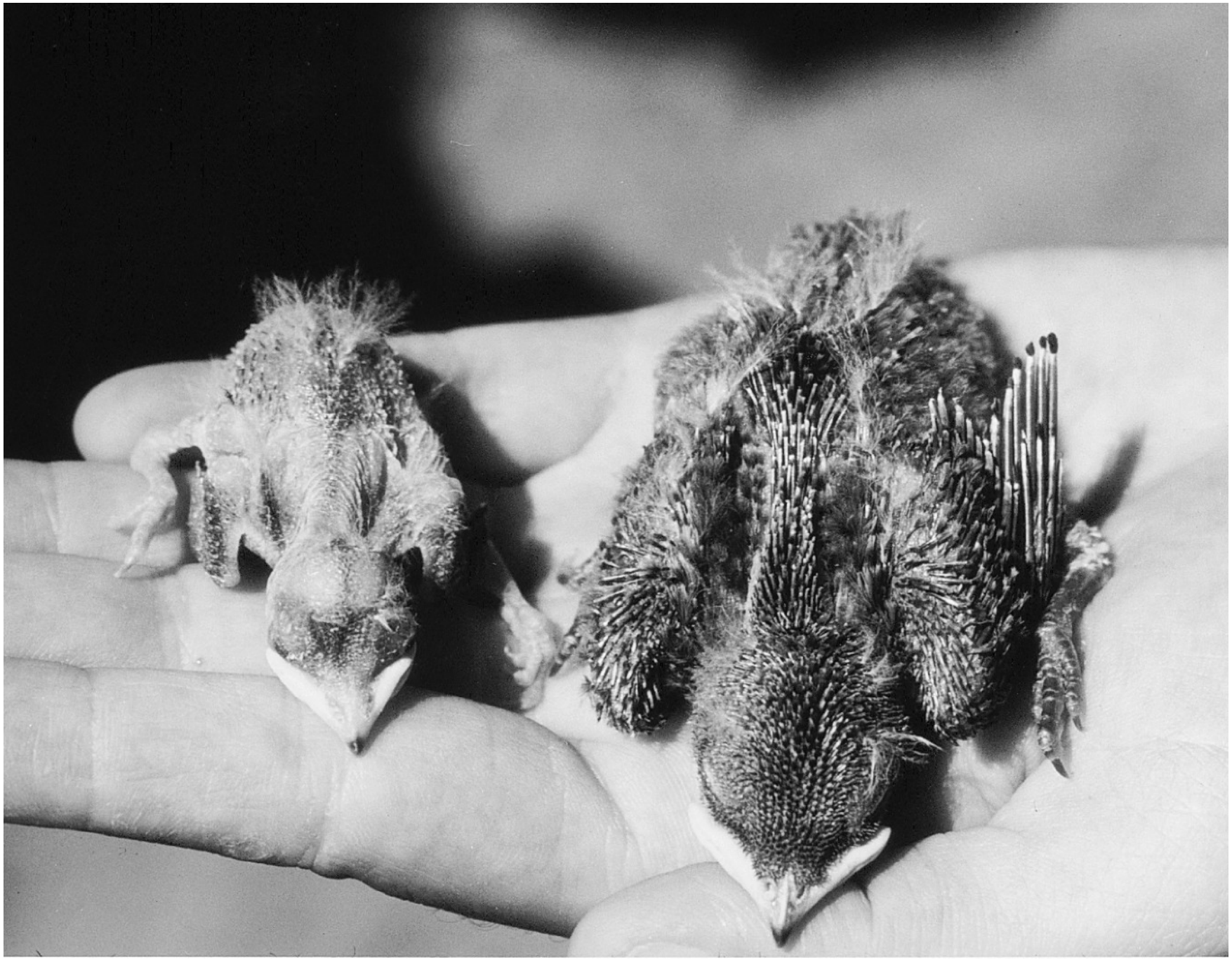




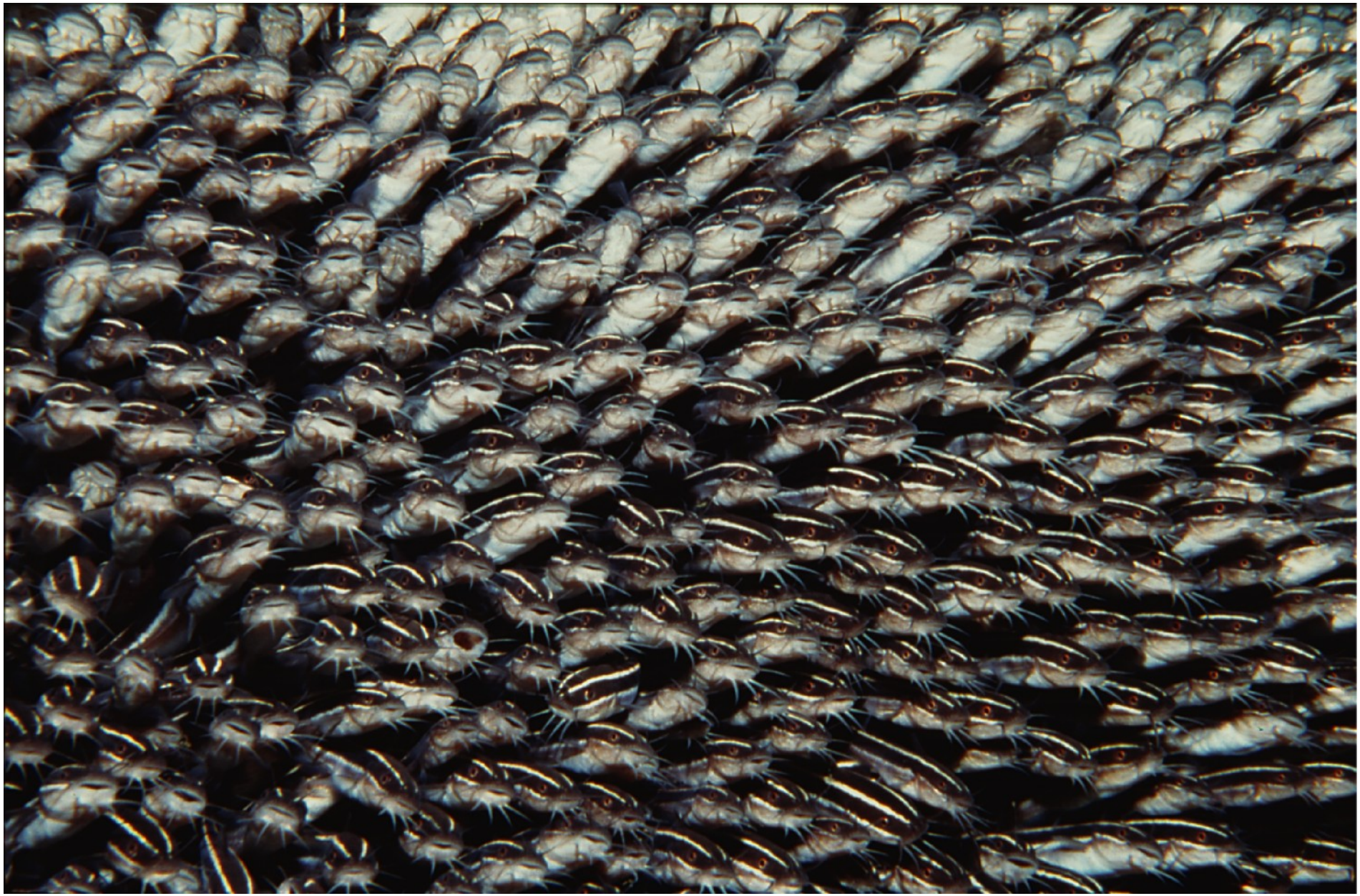
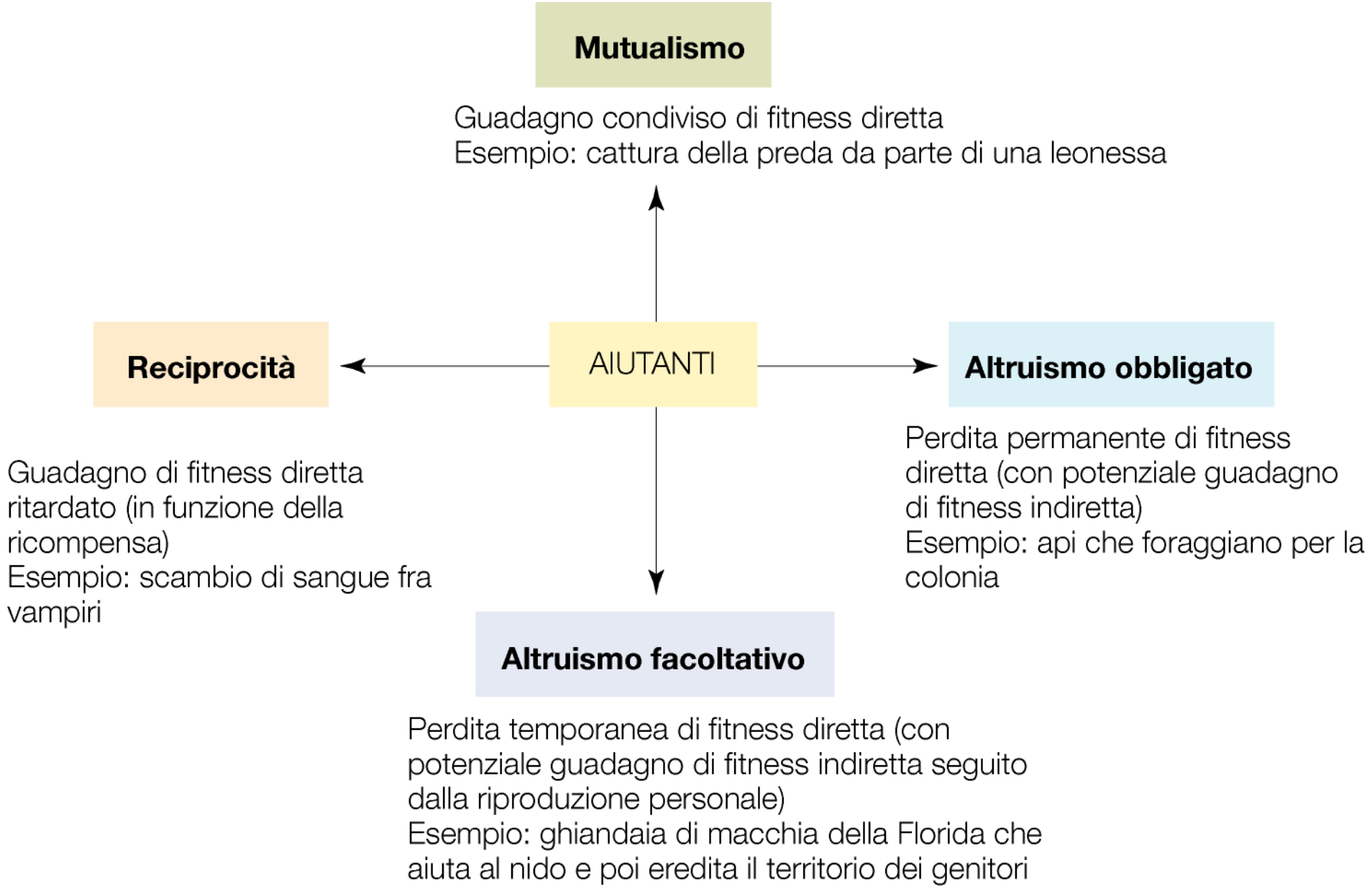
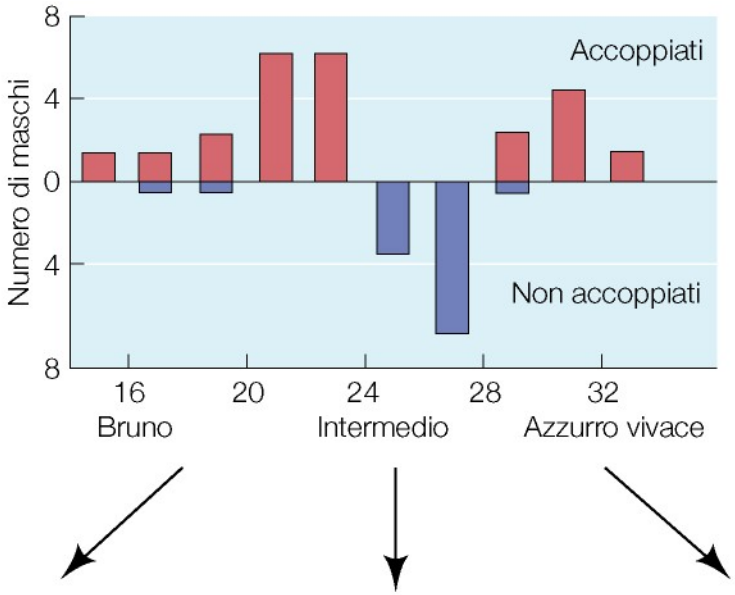


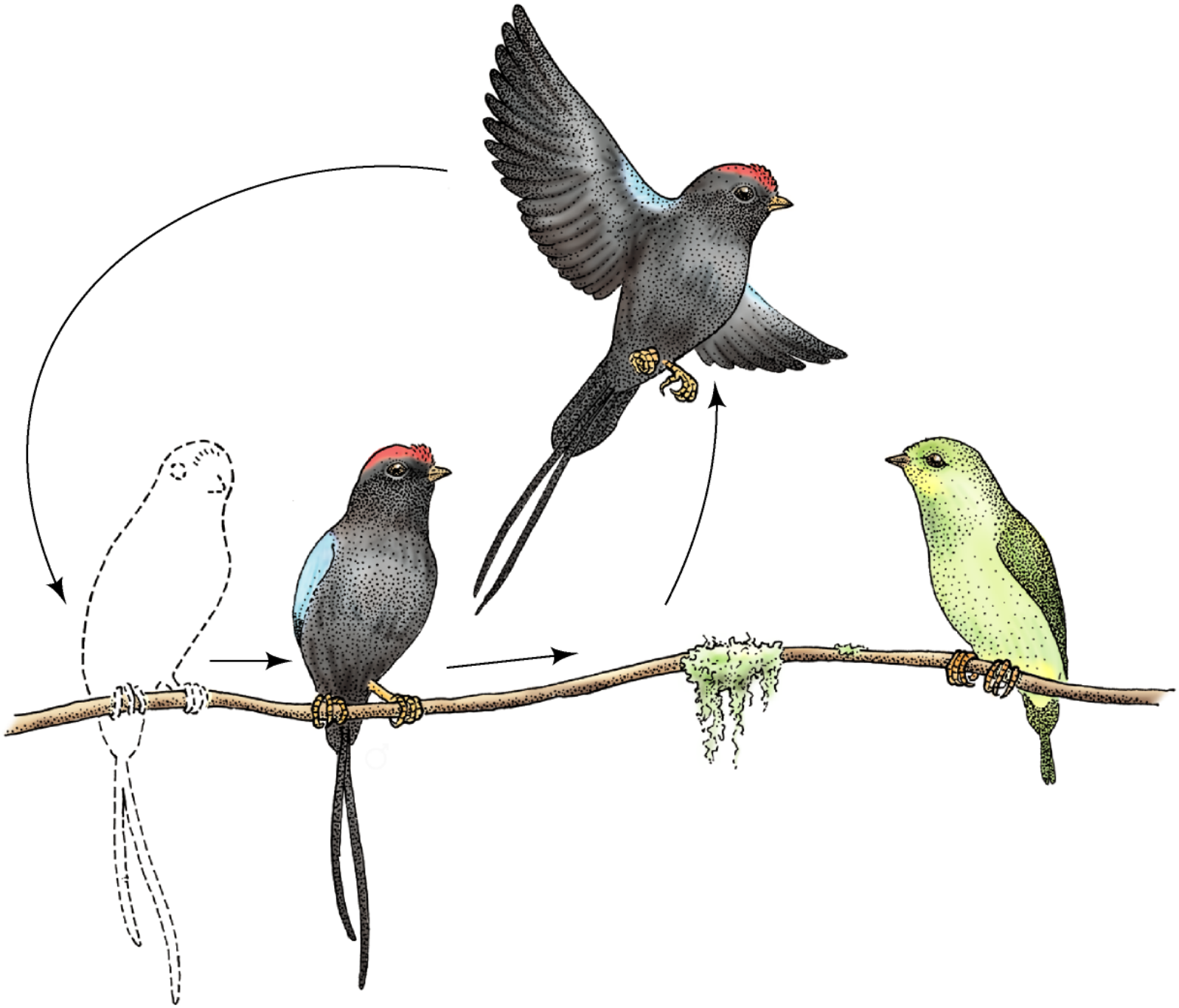
TABLE 13.2 *The direct reproductive success of individuals that engage in different kinds of social interactions*

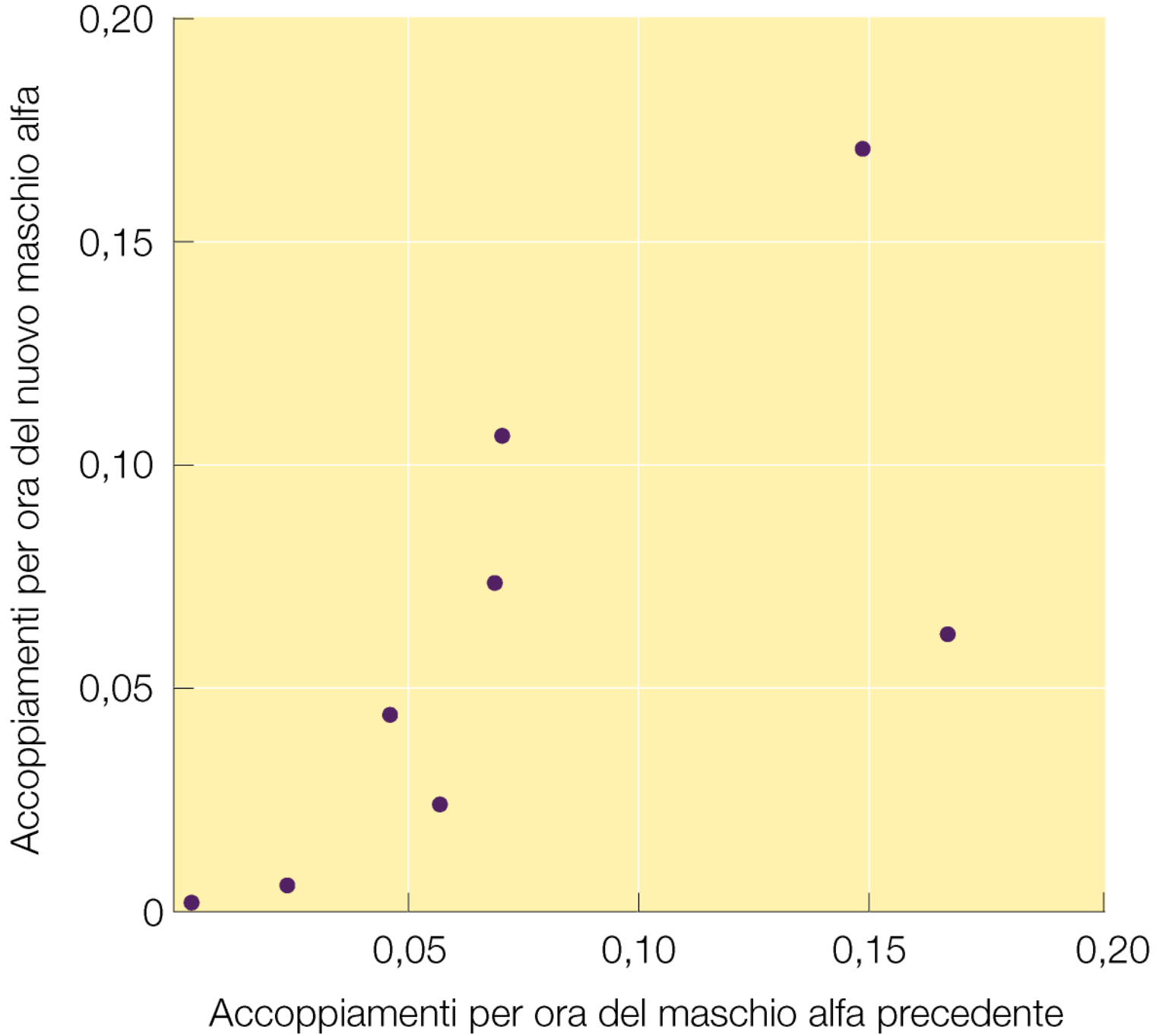
Type of interaction	Effect on direct reproductive success of	
	Social donor	Social recipient
Mutualism (Cooperation)	+	+
Reciprocity	+ (delayed)	+
Altruism	–	+
Selfish behavior	+	–
Spiteful behavior[a]	–	–

[a]You should not be surprised that spiteful behavior is almost never observed in nature; you should be surprised that altruism is not uncommon despite the loss of reproductive success experienced by altruists.



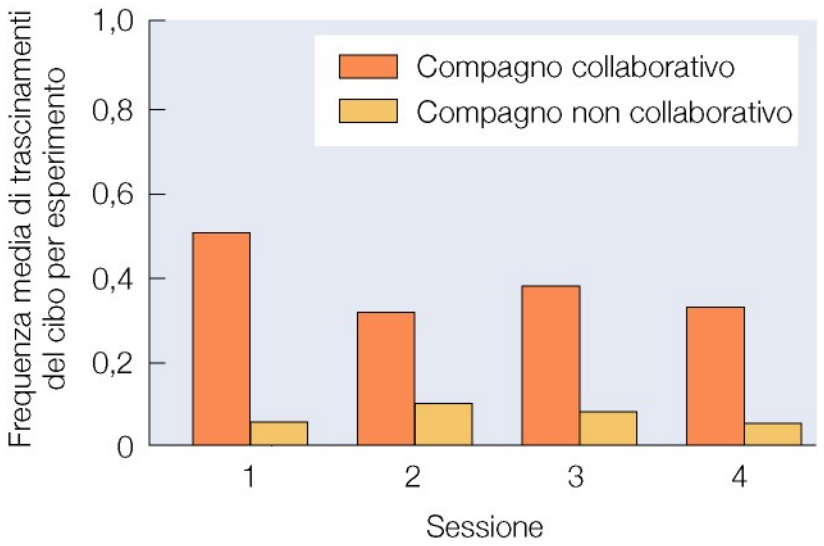


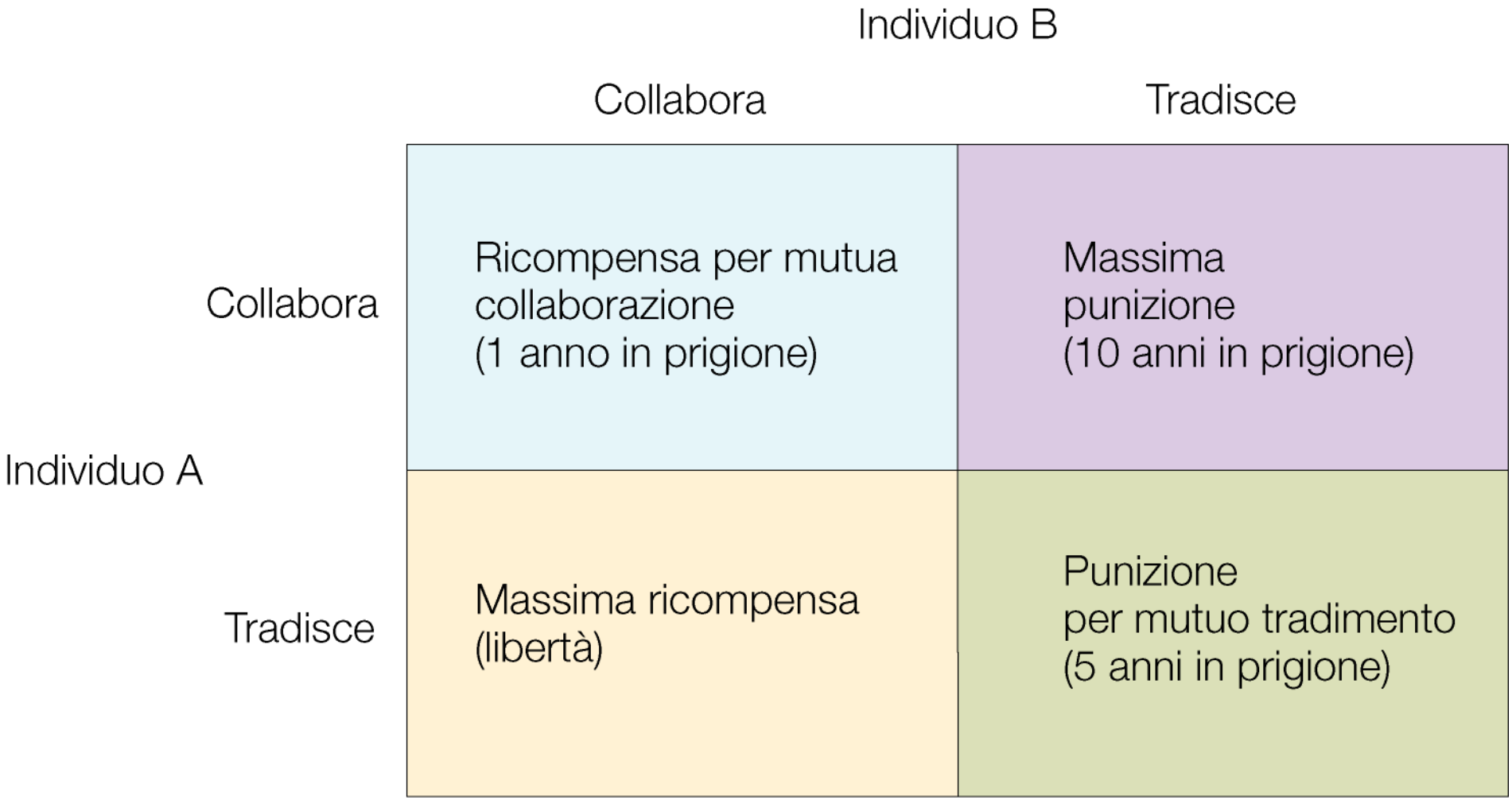


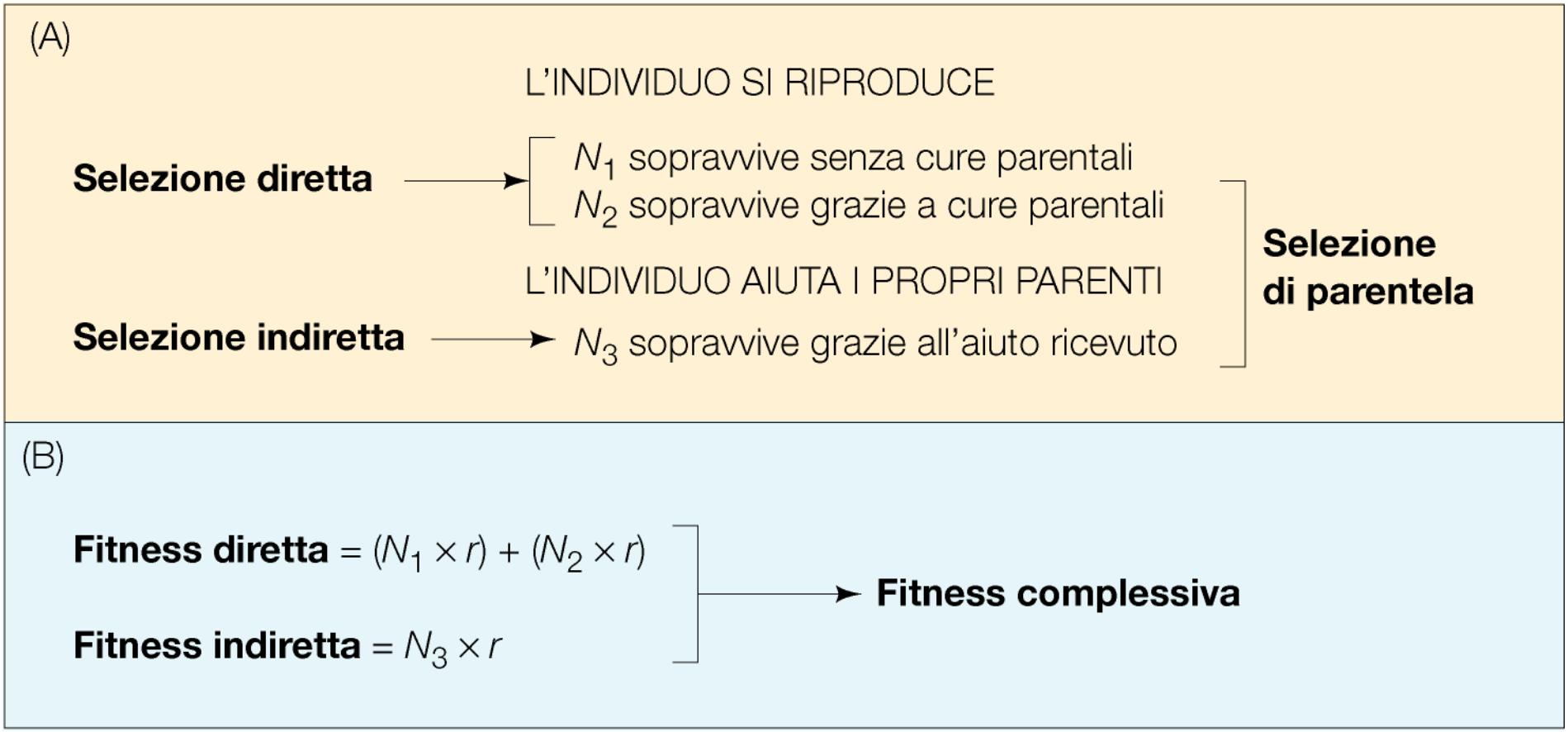


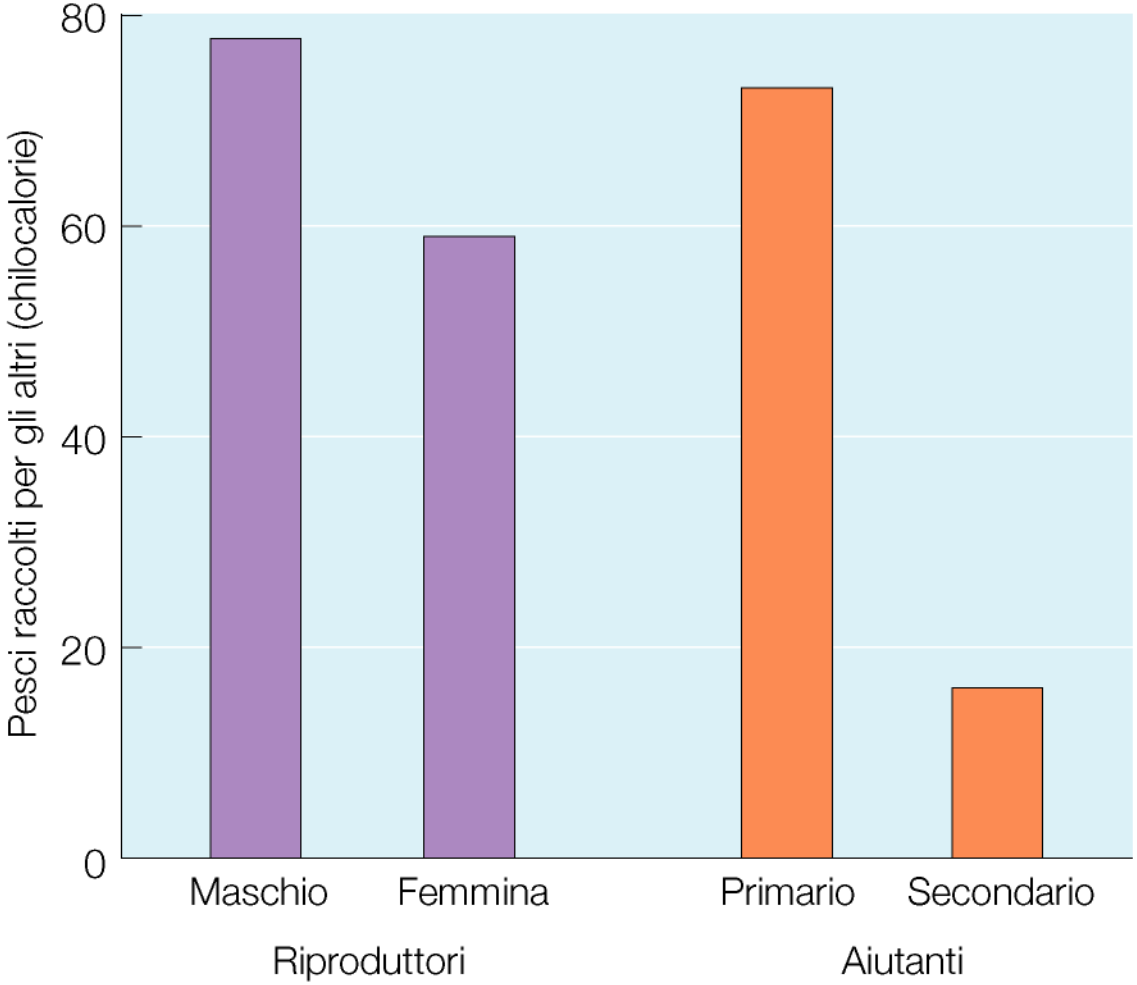
(A)

(B)









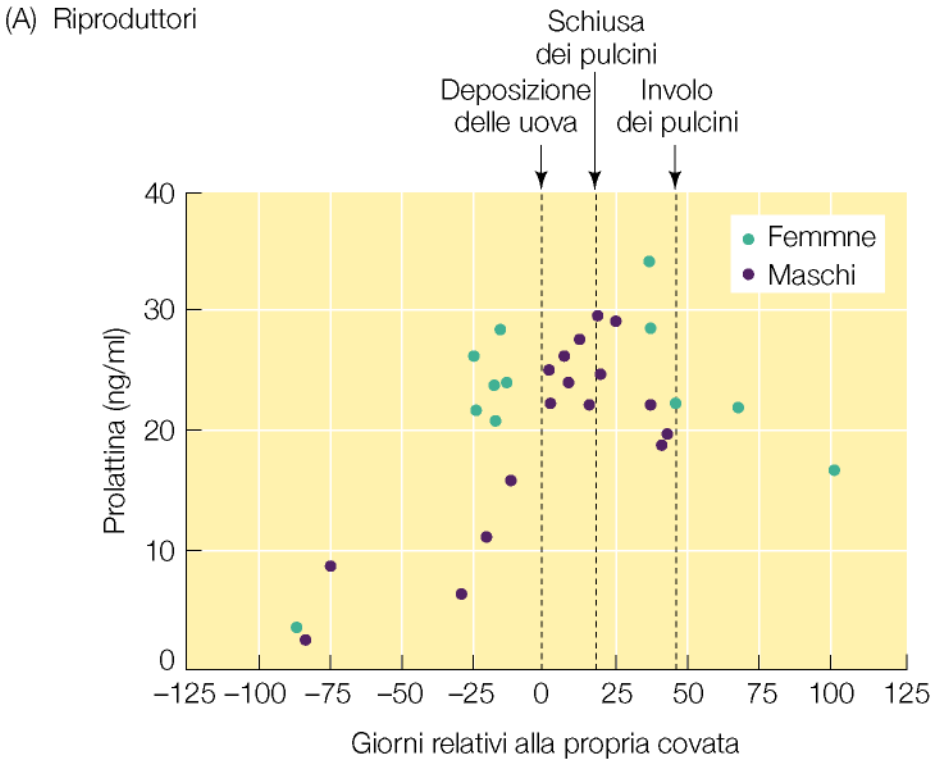
Martin pescatore dalla cresta

TABLE 13.3 *Calculations of inclusive fitness for male pied kingfishers*

Behavioral tactic	First year			Second year				
	y	*r*	f_1	*o*	*r*	*s*	*m*	f_2
Primary helper	$1.8 \times 0.32 = 0.58$			$2.5 \times 0.50 \times 0.54 \times 0.60 = 0.41$				
Secondary helper	$1.3 \times 0.00 = 0.00$			$2.5 \times 0.50 \times 0.74 \times 0.91 = 0.84$				
Delayer	$0.0 \times 0.00 = 0.00$			$2.5 \times 0.50 \times 0.70 \times 0.33 = 0.29$				

Source: Reyer [1013]

Symbols: y = extra young produced by helped parents; o = offspring produced by breeding ex-helpers and delayers; r = coefficient of relatedness between the male and y, and between the male and o; f_1 = fitness in first year (indirect fitness for the primary helper); f_2 = direct fitness in second year; s = probability of surviving into the second year; m = probability of finding a mate in the second year.



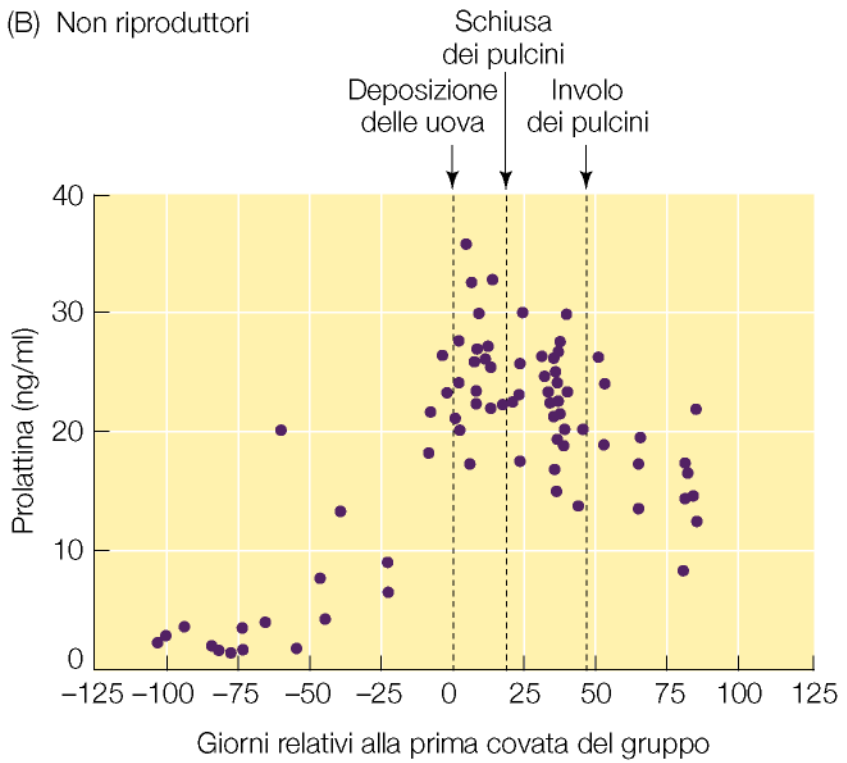
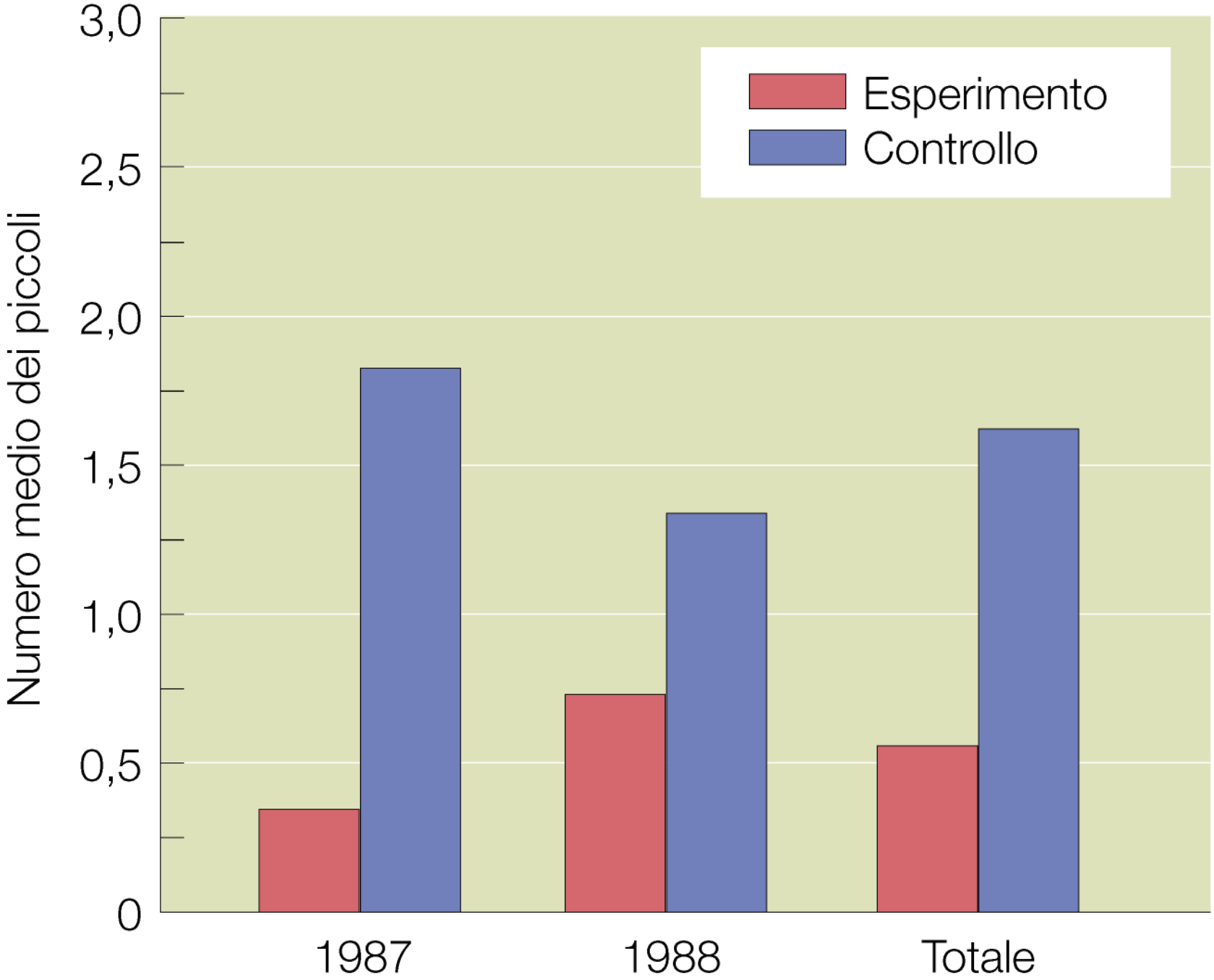


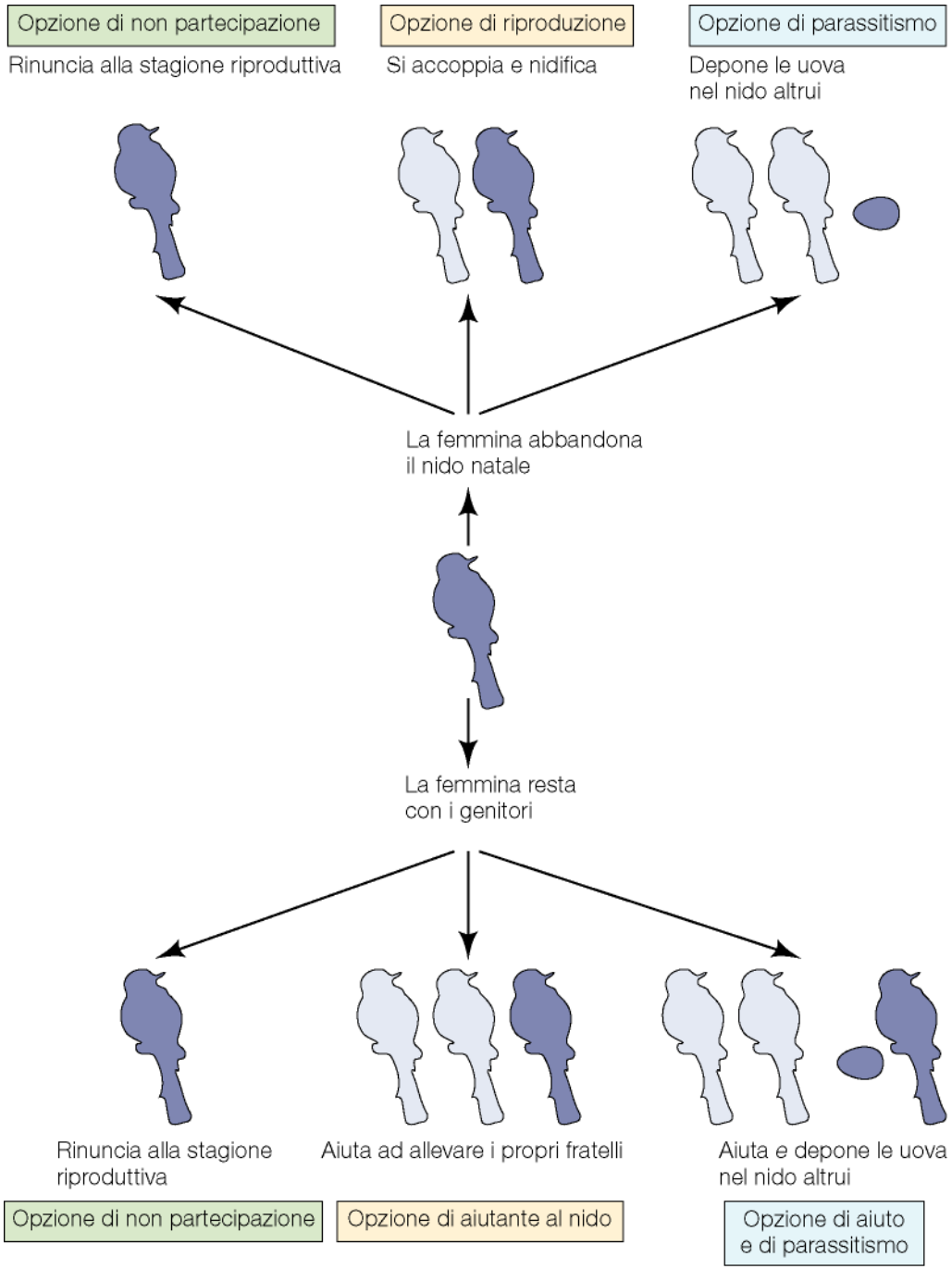
TABLE 13.4 *Effect of Florida scrub jay helpers at the nest on the reproductive success of their parents and on their own inclusive fitness*

	Parents without breeding experience[a]	Parents with breeding experience
Average number of fledglings produced with no helpers	1.03	1.62
Average number of fledglings produced with helpers	2.06	2.20
Increased reproductive success due to help	1.03	0.58
Average number of helpers	1.70	1.90
Indirect fitness gained per helper	0.60	0.30

Source: Emlen [365]

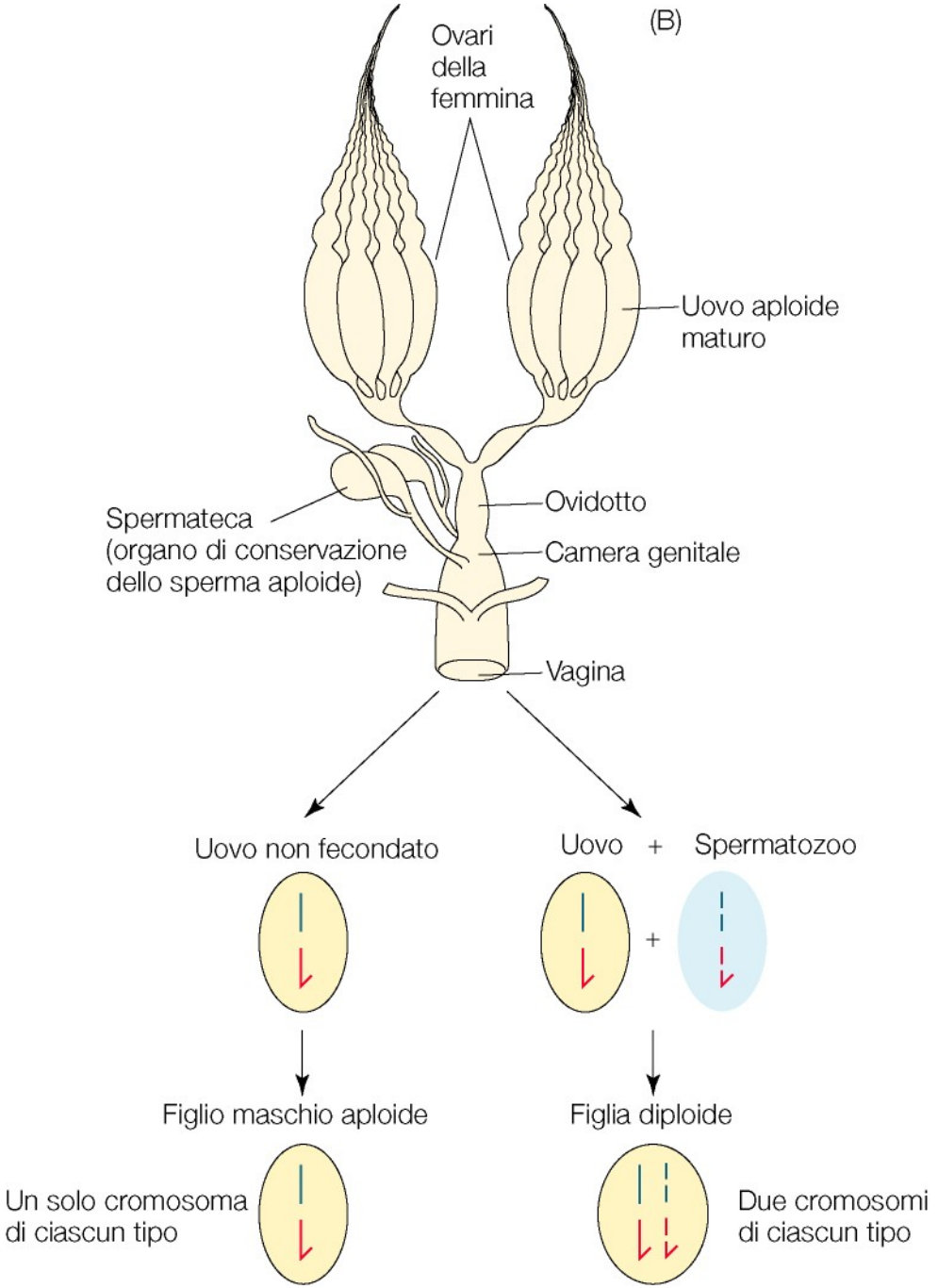
[a]Includes pairs in which one parent has reproduced, which is why some pairs in this category acquire a helper at the nest.

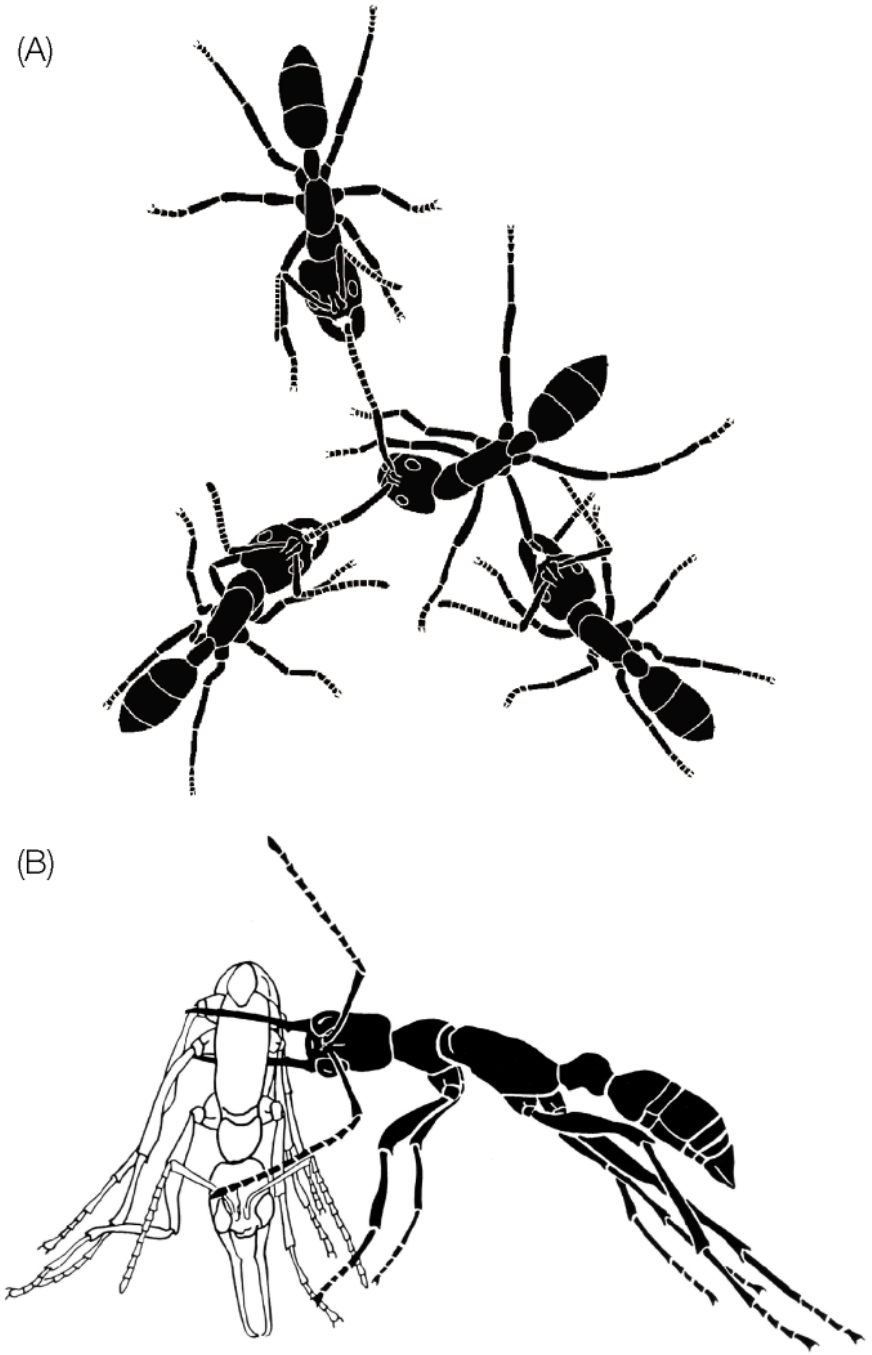


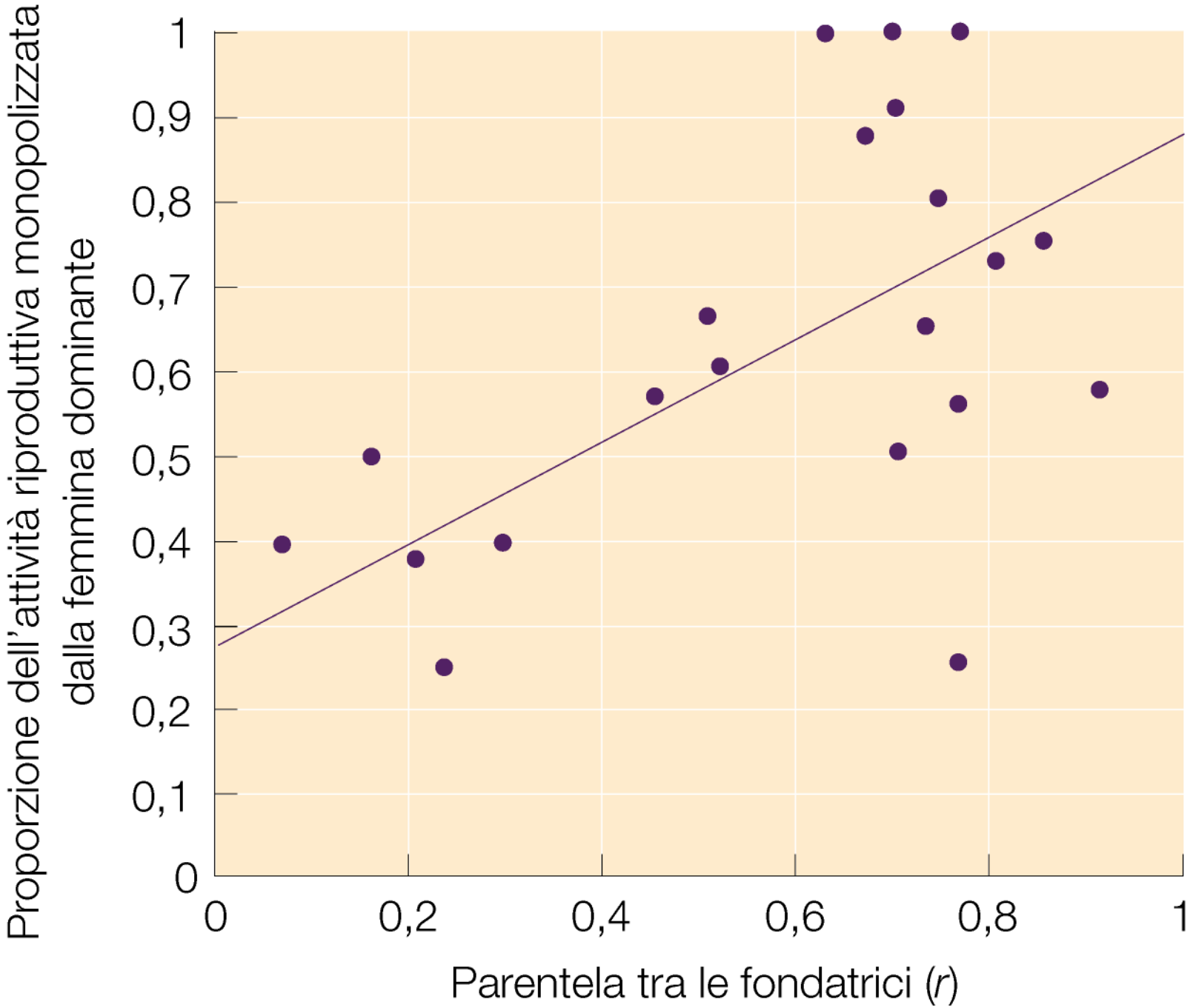


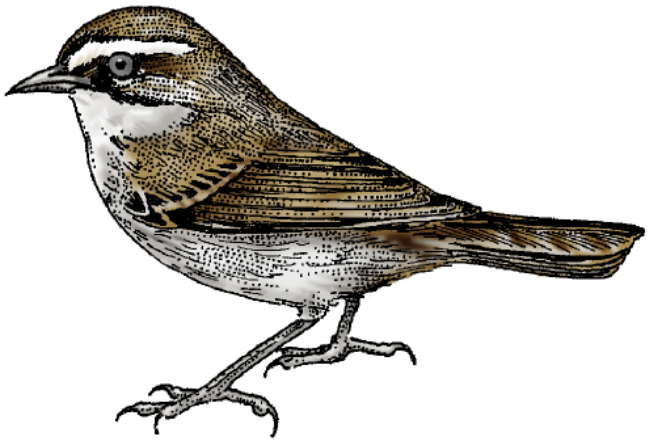
(A)

(B)

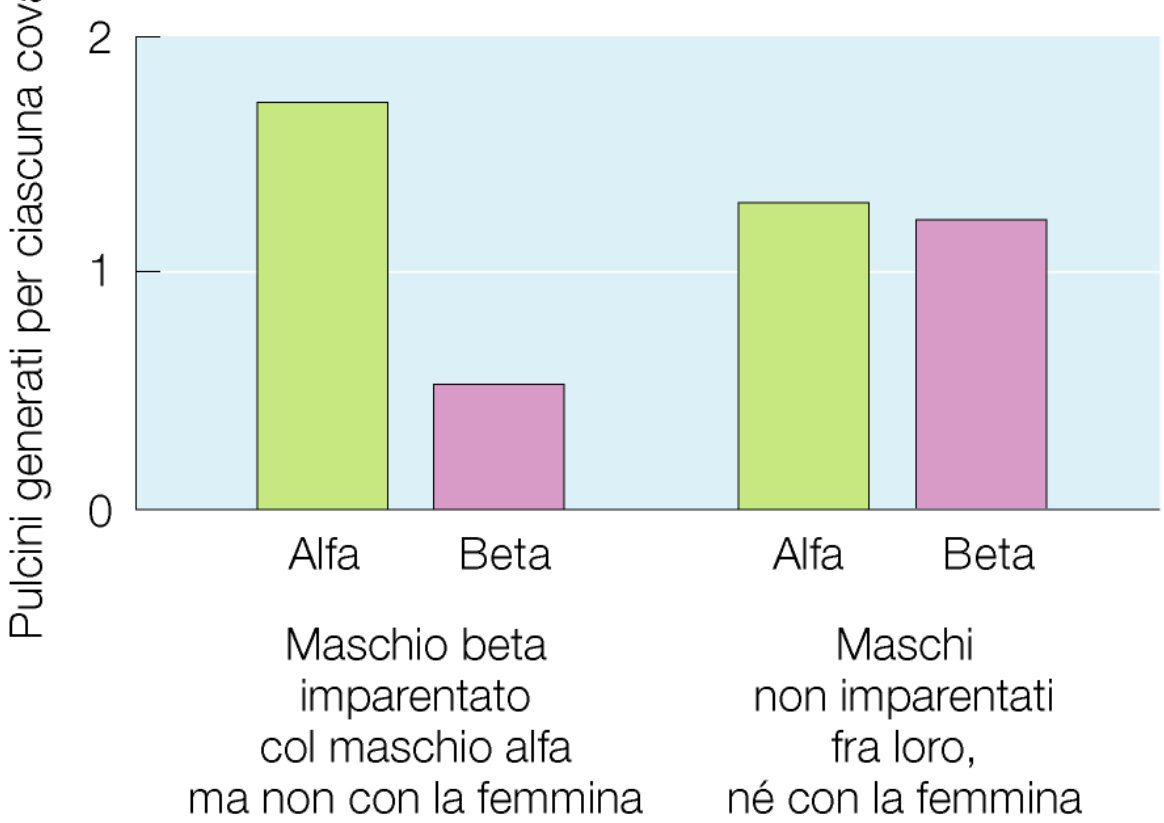


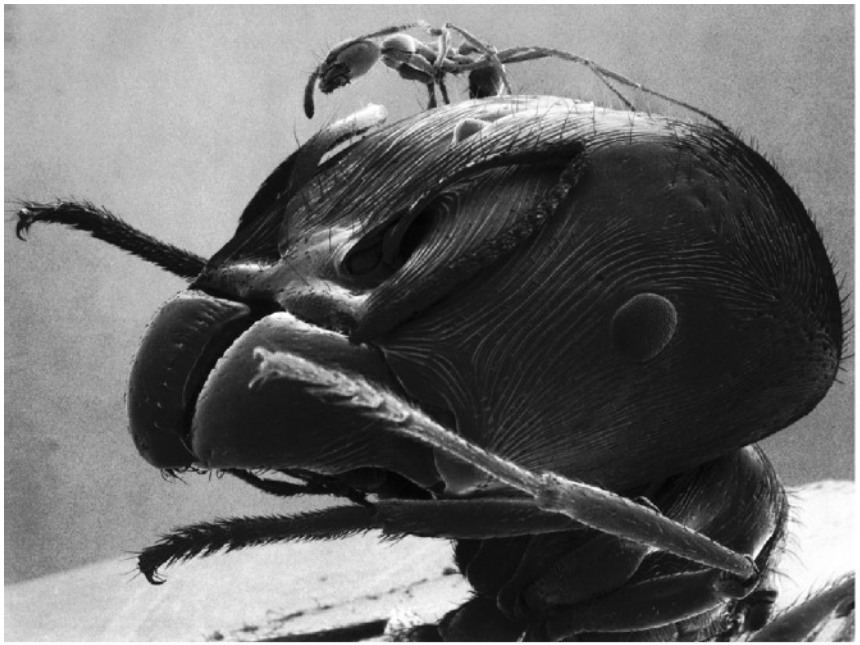


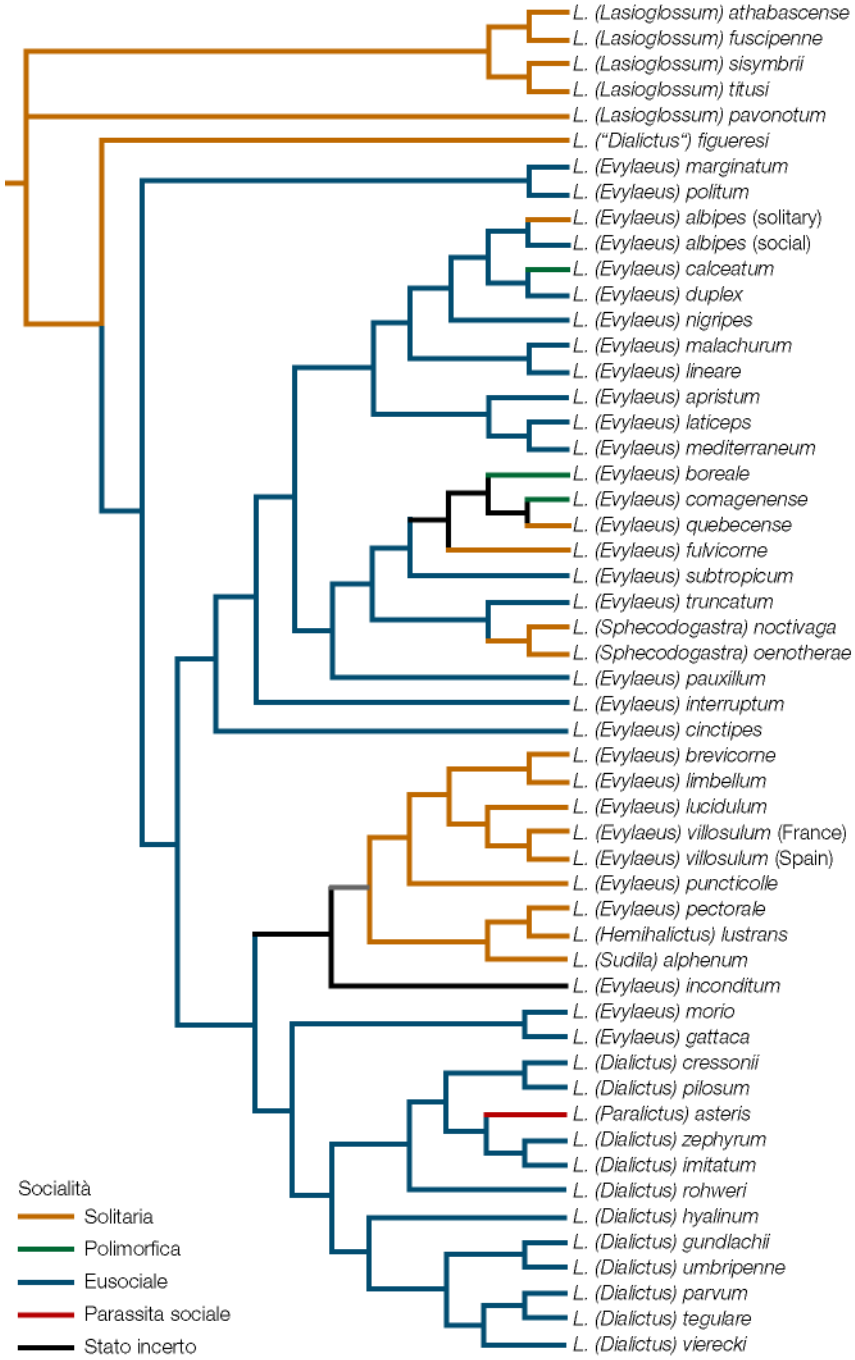




Scricciolo sericeo dai mustacchi







Lasioglossum oenotherae