SUPPORTING INFORMATION text

Supplemental statistical information

Dominants are usually older than all other group members, thus, the dominance status and age were correlated (r = 0.75). Still, we included these variables together in the same models, based on Morrissey and Ruxton (2018), that showed that collinearity in multiple regression models does not cause any statistical fault, and just requires careful interpretation of results. Consequently, in comparisons of dominants versus subordinates, we applied a Scheffe post hoc analysis in a non-standard way: we ran a post hoc comparison of dominants of their average age (4.7 ± 1.7 years; mean ± SD) versus subordinates of their average age (1.8 ± 0.7), using the 'offset' parameter of the *emmeans* function in R; whereas a standard post-hoc would be comparing dominants and subordinates of overall average age (2.5 years). We did this because the standard way would lead to biologically unrealistic comparison of relatively very young dominants versus relatively old subordinates (which would normally not cooccur in the same group). We opted this approach over the more cumbersome alternative which is modelling dominants and subordinates separately while including the age factor and examining pregnancy effects within each class, and additionally modelling them together while excluding the age factor to examine the differences between these classes (results did not change qualitatively between the two approaches).

In main text we report the analyses of individual relative contributions to provisioning and guarding from total group contribution. We also examined the absolute contributions to provisioning and guarding using same GLMMs but with the log observation time as the offset (instead of total group contribution as offset). Pregnancy effects did not differ qualitatively between the relative and absolute analyses. We present in main text the relative analyses which control better for changes in provisioning demand that are related to changes in litter size and age and show the pregnancy effects in relation to the group effort, and provide the analyses of absolute contributions in the appendix (Table S11, Fig S1, S2).

Approximation of provisioning and guarding differences between dominants and subordinate in terms of their impact on foraging time

In the discussion part we tried to understand what the contribution of the pregnancy effects is to the differences between dominants and subordinates in cooperative pup care effort. Part of these differences, which include the babysitting behaviour, are unrelated to pregnancy status and babysitting differences translate to extra four foraging days for dominants per reproduction bout (see discussion; Clutton-Brock et al. 2004). Here, we try to evaluate the differences that are explained by pregnancy status, including provisioning and raised guarding behaviours, in terms foraging time 'currency'. This would allow us to approximately contrast them versus the babysitting differences, illuminating what part of pup care differences between dominants and subordinates is explained versus unexplained by pregnancy effects.

Our analysis shows that dominants feed pups 20% less than subordinate (Figure S3, beta = -0.22, e^beta = 0.80), and based on our focal data, female meerkats contribute 10% of the food items they find to pups. Thus, dominants presumably contribute 2% less prey items from the ones they find. This translates to benefitting 2% more foraging time, which on a period of 45 days of pup provisioning accumulates to 0.9 days of foraging.

Our analysis shows that dominants guard 29% less frequently than subordinates (Figure S3, beta = -0.34, e^beta = 0.71). Previous studies showed that the percentage time spent in raised guarding from foraging time ranges from 2%-10% between ranch areas with lower predator abundance (as in our study site) and wild habitats (Figure 3 in: Clutton-Brock et al. 1999). Translated to differences in foraging days during the 45-day pup provisioning period amounts to 0.3-1.3 more foraging days to dominants versus subordinates.

References

Clutton-Brock, T. H., M. J. O'Riain, P. N. M. Brotherton, D. Gaynor, R. Kansky, A. S. Griffin, and M. Manser. 1999. Selfish sentinels in cooperative mammals. Science **284**:1640-1644.

Clutton-Brock, T. H., A. F. Russell, and L. L. Sharpe. 2004. Behavioural tactics of breeders in cooperative meerkats. Animal Behaviour **68**:1029-1040.

Morrissey, M. B. and G. D. Ruxton. 2018. Multiple Regression Is Not Multiple Regressions: The Meaning of Multiple Regression and the Non-Problem of Collinearity. Philos Theor Pract Biol **10**.

Table S1$_a$ Pregnancy status effects on individual relative contribution to pup provisioning from total group provisioning, examined per observation session. Results of a GLMM with negative binomial error distribution and a zero-inflation parameter. The log total group provisioning per session were included as an offset in the model and individual ID and litter ID were included as random factors. Pregnancy factor reference level is 'non pregnant'. Covariates were centred to the mean. n = 50,501 observation records from 631 individuals at 522 breeding sessions. VIF ≤ 1.33.

Parameter	β	SE	Z	P
intercept	-2.357	0.045	-52.67	< 0.001
pregnancy (early)	-0.282	0.032	-8.76	< 0.001
pregnancy (late)	-0.947	0.033	-29.13	< 0.001
rank (sub)	-0.273	0.040	-6.88	< 0.001
pregnancy (early):rank (SUB)	0.155	0.039	4.01	< 0.001
pregnancy (late):rank (SUB)	0.336	0.047	7.21	< 0.001
age (months)	-0.004	0.001	-4.41	< 0.001
age:rank (SUB)	-0.006	0.0014	-4.31	< 0.001
group size	-0.085	0.003	-32.84	< 0.001
group size^2	0.003	0.000	10.4	< 0.001
pup-age (days)	0.020	0.001	18.83	< 0.001
pup-age^2	-0.001	0.000	-18.74	< 0.001
pup-age:rank (SUB)	-0.018	0.0012	-15.7	< 0.001
pup-age^2: rank (SUB)	0.001	0.0001	16.31	< 0.001
session time am/pm (pm)	-0.067	0.0141	-4.78	< 0.001

Random factors' variance: individual ID: 0.15, litter ID: 0.11

Table S1$_b$ Post-hoc comparisons (Scheffe) for the pregnancy state × rank interaction above. The table presents differences between non, early and late pregnant females within dominants (DOM) of average age (4.7 years) and within subordinates (SUB) of average age (1.8 years), as well as differences between DOM and SUB females of same pregnancy status.

contrast	ratio	SE	t	P
DOM non / DOM early	1.32	0.042	8.60	<.0001
DOM early / DOM late	1.91	0.066	18.57	<.0001
SUB non / SUB early	1.14	0.027	5.59	<.0001
SUB early / SUB late	1.63	0.061	13.15	<.0001
DOM non / SUB non	1.13	0.045	2.99	0.111
DOM early / SUB early	0.98	0.046	-0.49	0.999
DOM late / SUB late	0.84	0.045	-3.31	0.053

df = 43,454; P value adjustment: Scheffe method with rank = 5

Table S2$_a$. Pregnancy status effects on individual contribution to guarding, calculated as relative guarding events from total group guarding, and examined per observation session. Results of a GLMM with negative binomial error distribution and a zero-inflation parameter. The log total group guarding events per session were included as an offset in the model, and individual ID and litter ID were included as random factors. Pregnancy factor reference level is 'non pregnant'. Covariates were centred to the mean. n = 50,501 observation records from 631 individuals at 522 breeding sessions. VIF ≤ 1.51.

Parameter	β	SE	Z	P
intercept	-2.975	0.072	-41.31	< 0.001
pregnancy (early)	-0.208	0.057	-3.67	< 0.001
pregnancy (late)	-0.415	0.053	-7.78	< 0.001
rank (sub)	0.112	0.068	1.64	0.100
pregnancy (early):rank (SUB)	0.333	0.067	4.95	< 0.001
pregnancy (late):rank (SUB)	-0.037	0.074	-0.50	0.615
age (months)	0.0005	0.003	-1.24	0.216
age^2	-0.0001	0.004	3.08	0.002
group_size	-0.078	0.004	-21.30	< 0.001
group_size^2	0.003	0.000	8.18	< 0.001
lactating (yes)	-0.411	0.030	-13.69	< 0.001
pup_age (days)	0.001	0.001	1.13	0.259
pup_age^2	-0.0002	0.000	-4.07	< 0.001
session time am/pm (pm)	-0.095	0.022	-4.24	< 0.001

Random factors' variance: individual ID: 0.49, litter ID: 0.17

Table S2$_b$. Post-hoc comparisons (Scheffe) for the pregnancy state × rank interaction above. The table presents differences between non, early and late pregnant females within dominants (DOM) of average age (4.7 years) and within subordinates (SUB) of average age (1.8 years), as well as differences between DOM and SUB females of same pregnancy status.

contrast	ratio	SE	t	P
DOM non / DOM early	1.23	0.070	3.67	0.02
DOM early / DOM late	1.23	0.069	3.70	0.02
SUB non / SUB early	0.88	0.035	-3.19	0.07
SUB early / SUB late	1.78	0.103	10.00	<.0001
DOM non / SUB non	0.87	0.059	-2.13	0.48
DOM early / SUB early	0.62	0.048	-6.12	<.0001
DOM late / SUB late	0.90	0.076	-1.27	0.90

df = 39,487; P value adjustment: Scheffe method with rank = 5

Table S3$_a$. Pregnancy status effects on babysitting. Results of a GLMM with a binomial error distribution (n = 81,606 binary babysitting records from 626 females during 561 breeding sessions). Pregnancy factor reference level is non pregnant. Individual ID and litter ID were included as random factors. Covariates were centred to the mean. Dominant females hardly babysit and consequently the model included interactions of all predictors with dominance rank, allowing different parametrization for dominants and subordinates. VIF ≤ 1.51.

Parameter	β	SE	Z	P
intercept	-4.147	0.202	-20.502	<.001
rank (SUB)	2.999	0.203	14.752	<.001
pregnancy (early)	0.078	0.115	0.682	0.495
pregnancy (late)	0.460	0.308	1.491	0.136
pregnancy (early) : rank (SUB)	-0.300	0.125	-2.408	0.016
pregnancy (late) : rank (SUB)	-0.991	0.313	-3.169	0.002
age (months)	0.000	0.007	0.027	0.979
age^2	0.000	0.000	-0.001	0.999
age : rank (SUB)	0.017	0.007	2.541	0.011
age^2 : rank (SUB)	-0.001	0.000	-3.833	<.001
group size	-0.074	0.011	-6.911	<.001
group size : rank (SUB)	0.023	0.011	2.123	0.034
lactating (yes)	-0.670	0.155	-4.326	<.001
lactating : rank (SUB)	0.543	0.159	3.420	0.001
pup_age (days)	-0.058	0.006	-9.258	<.001
pup_age : rank (SUB)	0.052	0.006	8.199	<.001
session time am/pm (pm)	0.526	0.095	5.516	<.001
session time : rank (SUB)	-0.443	0.098	-4.527	<.001

Random factors' variance: individual ID: 0.27, litter ID: 0.19

Table S3$_b$. Post-hoc comparisons (Scheffe) for the pregnancy state × rank interaction above. The table presents differences between non, early and late pregnant females within dominants (DOM) of average age (4.7 years) and within subordinates (SUB) of average age (1.8 years), as well as differences between DOM and SUB females of same pregnancy status.

contrast	odds ratio	SE	t	P
DOM non / DOM early	0.92	0.11	-0.68	0.99
DOM early / DOM late	0.68	0.21	-1.25	0.91
SUB non / SUB early	1.25	0.06	4.52	0.001
SUB early / SUB late	1.70	0.09	10.08	<.001
DOM non / SUB non	0.06	0.01	-18.89	<.001
DOM early / SUB early	0.08	0.01	-15.77	<.001
DOM late / SUB late	0.15	0.05	-6.04	<.001

df = 81,586; P value adjustment: Scheffe method with rank = 5

Table S4. Pregnancy status effects on the proportion of food items that females donated to pups (generosity). Results of a GLMM with negative binomial error distribution. Pregnancy factor reference level is 'non pregnant'. Individual ID was included as random factors. Covariates were centred to the mean.

Parameter	β	SE	Z	P
intercept	-2.242	0.172	-13.06	< 2e-16
pregnancy (early)	0.203	0.111	1.83	0.067
pregnancy (late)	-0.393	0.111	-3.56	0.000
group_size	-0.078	0.014	-5.59	0.000
group_size^2	0.011	0.002	5.29	0.000
litter_size	0.273	0.033	8.34	< 2e-16
litter_size^2	-0.087	0.016	-5.37	0.000
pup_age (days)	0.016	0.003	5.01	0.000
pup_age^2	-0.003	0.000	-14.68	< 2e-16
rain (mm)	-0.002	0.001	-2.96	0.003
session time am/pm (pm)	-0.935	0.125	-7.47	0.000

Late-pregnant females provision significantly lower proportion of food items also compared to early-pregnant females (Scheffe post hoc; $\beta = -0.596 \pm 0.12$, $t = 5.04$, $p < 0.001$). Random factor's variance: individual ID: 0.48.

Sample size table:

pregnancy status	individuals	breeding sessions	focals
non-pregnant	33	83	901
early-pregnant	28	88	549
late-pregnant	22	71	601

note: individuals overlap between groups

Table S5. Changes throughout pregnancy days in relative individual contribution to provision out of total group provisioning. Individual provisioning per session was modelled using GAMM with: a negative binomial distribution, the log total group provisioning per observation session as offset, and individual ID and litter ID as random factors. This model was used to generate Fig 3. n = 50,501 observation records from 631 individuals at 522 breeding sessions.

Parameter	**β**	**SE**	**Z**	**P**
intercept	-2.736	0.038	-71.52	< .001
age (months)	-0.003	0.001	-3.22	0.001
rank (sub)	0.116	0.038	3.11	0.002
age:rank (SUB)	-0.007	0.001	-5.41	< .001
session time am/pm (pm)	-0.067	0.014	-4.80	< .001
Smooth term	**edf**	**Ref df**	x^2	**P**
pregnancy day : rank (DOM)	3.86	3.98	332.00	< .001
pregnancy day : rank (SUB)	3.33	3.72	100.64	< .001
group size : rank (DOM)	3.55	3.82	272.64	< .001
group size : rank (SUB)	3.75	3.89	375.71	< .001
pup-age : rank (DOM)	3.56	3.89	176.74	< .001
pup-age : rank (SUB)	1.78	2.17	5.64	0.003
Smooth random factors				
individual ID	426.30	625.00	14.29	< .001
litter ID	327.70	520.00	10.49	< .001

Table S6. Changes throughout pregnancy days in body weight (g) modelled using GAMM with a negative binomial distribution and individual ID as random factors. This model was used to generate Fig 3. Weighing session reference level is 'evening'. n = 167,627 weight records from 630 females at 521 breeding sessions.

Parameter	**β**	**SE**	**Z**	**P**
intercept	715.48	2.06	346.94	<.001
weighing session (morning)	-37.04	0.30	-125.42	<.001
weighing session (noon)	-14.29	0.33	-43.53	<.001
Smooth term	**edf**	**Ref df**	x^2	**P**
pregnancy day : rank (DOM)	3.99	4.00	18706.70	<.001
pregnancy day : rank (SUB)	3.99	4.00	11541.00	<.001
age : rank (DOM)	4.00	4.00	5206.40	<.001
age : rank (SUB)	3.99	4.00	9832.10	<.001
Smooth random factors				
individual ID	3.99	4.00	9832.10	<.001
litter ID	620.11	628.00	357.30	<.001

Table S7. The effect of being pregnant while lactating (yes/no) on lactation duration. Results of an LMM with a normal error distribution. Individual ID was included as random factors. Covariates were centred to the mean.

Parameter	β	SE	Z	P
intercept	53.805	0.622	86.440	< 2e-16
pregnant (Yes)	-2.615	0.764	-3.420	0.001
litter size	1.115	0.300	3.710	0.000
rain	0.015	0.005	2.790	0.005
age	-0.006	0.020	-0.300	0.768
Group size	0.157	0.067	2.350	0.019

Random factor's variance: individual ID: 1.84

Table S8. Rank (dominant/subordinate) differences in the probability of being pregnant (yes/no) during the pup-provisioning period. Results of a GLMM with a binomial error distribution. Individual ID and litter ID were included as random factors. Covariates were centred to the mean.

Parameter	β	SE	Z	P
intercept	-1.042	0.518	-2.012	0.044
rank (SUB)	-3.025	0.241	-12.538	< 2e-16
age (months)	-0.003	0.010	-0.357	0.721
age : rank (SUB)	0.142	0.010	14.220	< 2e-16
group size	-0.048	0.015	-3.243	0.001
rain	0.004	0.001	3.243	0.001

Random factors' variance: individual ID: 18.4, litter ID: 25.5

Table S9. Subordinates contraception experiment: comparisons of cooperative behaviours between subordinate females treated with contraceptive jab versus control subordinate females (saline jab) that were: non-pregnant, early pregnant and late pregnant. Relative pup provisioning, relative guarding and babysitting probabilities were examined (separately) using GLMM models as specified in tables S1-S3, respectively. The pregnancy factor and the experimental treatment are combined and have four levels: contraceptive treated non-pregnant (reference level), control non-pregnant, control early pregnant and control late pregnant. Thus, the table displays contrasts between each pregnancy status in the control group versus the treated group.

	Provisioning				**Guarding**				**Babysitting**			
parameter	**β**	**SE**	**Z**	**P**	**β**	**SE**	**Z**	**P**	**β**	**SE**	**Z**	**P**
intercept	-2.74	0.06	-46.85	< .001	-2.84	0.11	-25.22	< .001	-1.37	0.08	-16.91	< .001
experimental group[1]:												
control non-pregnant	0.05	0.07	0.63	0.53	-0.11	0.11	-0.95	0.34	-0.09	0.10	-0.87	0.39
control early-pregnant	0.05	0.12	0.42	0.67	-0.22	0.18	-1.19	0.23	-0.39	0.19	-2.03	**0.04**
control late-pregnant	-0.51	0.21	-2.40	**0.01**	-0.57	0.26	-2.17	**0.03**	-0.04	0.17	-0.23	0.82
age (months)	-0.01	0.01	-2.08	0.04	0.02	0.01	1.92	0.06	0.04	0.01	5.14	< .001
group size	-0.05	0.01	-5.46	< .001	-0.04	0.02	-2.59	0.01	-0.07	0.01	-5.82	< .001
lactating (yes)	--	--	--	--	-0.43	0.14	-3.03	< .001	--	--	--	--

[1] reference group: contraceptive treated non-pregnants

Sample size table:

	Provisioning and guarding			**Babysitting**		
experimental group	individuals	breeding sessions	observations	individuals	breeding sessions	observations
treated non-pregnant	54	29	1326	55	31	2981
control non-pregnant	50	26	1040	50	27	2990
control early-pregnant	20	13	184	17	10	338
control late-pregnant	16	10	74	17	15	332

note: individuals overlap between the experimental groups

Table S10. Pregnant females feeding experiment: comparisons of cooperative behaviours between late pregnant dominant females that were provided with food supplement versus control unfed dominant females that were: non-pregnant, early pregnant and late pregnant. Relative pup provisioning and relative guarding were examined (separately) using GLMM models as specified in tables S1, S2, respectively. The pregnancy factor is combined with the experimental treatment to a factor of four levels (groups): late pregnants which were experimentally fed (reference level), control non-pregnant, control early pregnant and control late pregnant. Thus, the table displays contrasts between each pregnancy status in the control unfed group versus the experimentally-fed late pregnants.

	Provisioning				**Guarding**			
parameter	**β**	**SE**	**Z**	**P**	**β**	**SE**	**Z**	**P**
intercept	-2.696	0.283	-9.51	< .001	-2.435	0.351	-6.946	< .001
experimental group[1]:								
control non-pregnant	0.144	0.282	0.51	0.608	-0.764	0.443	-1.724	0.085
control early-pregnant	-0.301	0.309	-0.98	0.330	-1.508	0.470	-3.205	**0.001**
control late-pregnant	-0.938	0.333	-2.82	**0.005**	-1.754	0.479	-3.663	**< .001**
group size	-0.048	0.024	-1.98	0.047	-0.059	0.024	-2.486	0.013
pup-age (days)	-0.002	0.006	-0.31	0.757	0.016	0.008	2.142	0.032
pup-age^2	-0.002	0.000	-3.58	< .001				

[1] reference group: experimentally fed late-pregnants

Sample size table:

experimental group	individuals	breeding sessions	observations
fed late-pregnant	6	6	126
control non-pregnant	7	10	139
control early-pregnant	10	16	110
control late-pregnant	9	13	147

note: individuals overlap between the experimental groups

Table S11. Analyses of **absolute** contributions to provisioning and guarding. This table summarizes the results of repeating the analyses conducted previously on relative contributions to provisioning and guarding (Tables S1-2) with analyses on absolute contributions instead. Same GLMM models were used but with the log observation time as an offset (instead of the log total group execution of provisioning/guarding).

parameter	**β**	**SE**	**Z**	**P**	**β**	**SE**	**Z**	**P**
Adlib behaviours		**Provisioning**				**Guarding**		
intercept	-4.333	0.055	-78.15	< .001	-6.139	0.094	-65.65	< .001
pregnancy (early)	-0.205	0.040	-5.15	< .001	-0.114	0.067	-1.72	0.086
pregnancy (late)	-0.995	0.039	-25.2	< .001	-0.357	0.062	-5.74	< .001
rank (sub)	-0.261	0.048	-5.41	< .001	0.042	0.083	0.51	0.613
pregnancy (early):rank (SUB)	0.111	0.048	2.32	0.020	0.200	0.078	2.56	0.010
pregnancy (late):rank (SUB)	0.294	0.056	5.28	< .001	-0.151	0.085	-1.77	0.077
age (months)	-0.004	0.001	-3.16	0.002	-0.002	0.002	-1.12	0.264
age:rank (SUB)	-0.008	0.002	-4.92	< .001	-0.001	0.003	-0.25	0.805
group size	-0.056	0.003	-16.59	< .001	-0.071	0.005	-14.63	< .001
group size^2	0.001	0.000	3.75	< .001	0.002	0.000	4.57	< .001
lactating (yes)	--	--	--	--	-0.363	0.035	-10.4	< .001
litter size	0.091	0.014	6.31	< .001	--	--	--	--
pup-age (days)	0.013	0.001	10.75	< .001	0.009	0.002	4.73	< .001
pup-age^2	-0.003	0.000	-31.69	< .001	-0.001	0.000	-8.08	< .001
pup-age:rank (SUB)	-0.017	0.001	-12.64	< .001	-0.007	0.002	-3.31	0.001
pup-age^2: rank (SUB)	0.001	0.000	14.53	< .001	0.0001	0.000	2.93	0.003
session time am/pm (pm)	-0.744	0.016	-47.2	< .001	-0.503	0.024	-20.92	< .001
Contraception experiment								
intercept	-4.432	0.095	-46.65	< .001	-5.633	0.180	-31.32	< .001
experimental group[2]:								
control non-pregnant	0.020	0.100	0.2	0.845	-0.121	0.192	-0.63	0.528
control early-pregnant	0.039	0.141	0.28	0.781	-0.052	0.257	-0.20	0.840
control late-pregnant	-0.537	0.233	-2.3	0.021	-0.653	0.326	-2.00	0.045
age (months)	-0.017	0.007	-2.42	0.016	0.040	0.015	2.65	0.008
group size	-0.063	0.012	-5.1	< .001	-0.063	0.021	-2.94	0.003

group size^2	-0.006	0.002	-2.41	0.016	--	--	--	--
litter size	0.029	0.039	0.74	0.461	--	--	--	--
litter size^2	-0.042	0.020	-2.12	0.034	--	--	--	--
pup-age (days)	0.006	0.002	2.43	0.015	0.011	0.003	3.55	< .001
pup-age^2	-0.001	0.000	-8.52	< .001	-0.001	0.000	-3.84	< .001
session time am/pm (pm)	-0.547	0.058	-9.38	< .001	-0.427	0.075	-5.69	< .001
Feeding pregnants experiment								
intercept	-4.630	0.367	-12.62	< .001	-5.590	0.321	-17.39	< .001
experimental group[3]:								
control non-pregnant	0.014	0.313	0.05	0.964	-0.785	0.364	-2.16	0.031
control early-pregnant	-0.200	0.347	-0.58	0.564	-1.320	0.445	-2.97	0.003
control late-pregnant	-0.936	0.354	-2.65	0.008	-1.250	0.422	-2.96	0.003
group size	--	--	--	--	-0.090	0.023	-3.93	0.003
group size^2	--	--	--	--	0.010	0.003	2.99	< .001
litter size	0.276	0.158	1.75	0.081	0.340	0.124	2.74	0.006
litter size^2	-0.273	0.099	-2.77	0.006	--	--	--	--
pup-age (days)	-0.014	0.007	-1.95	0.051	0.023	0.009	2.44	0.015
pup-age^2	-0.002	0.001	-4.31	< .001	-0.001	0.001	-1.99	0.047
session time am/pm (pm)	-0.609	0.167	-3.65	< .001	-0.601	0.241	-2.50	0.013

[1] reference group: non-pregnants; [2] reference group: contraceptive treated non-pregnants; [3] reference group: experimentally fed late-pregnants.

Figures

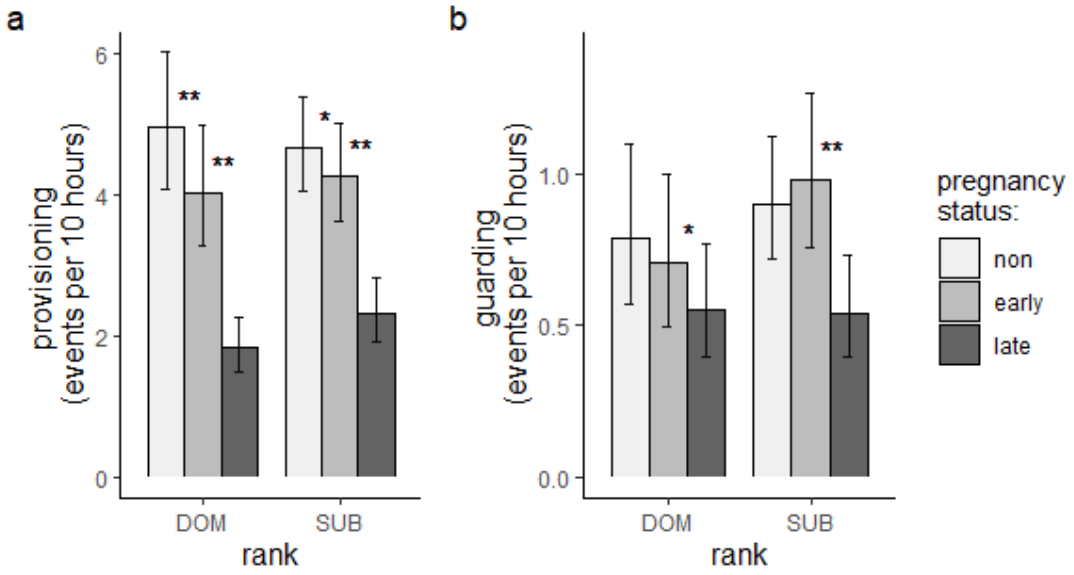

Fig S1. Pregnancy effects on cooperative behaviours. This figure is equivalent to Fig. 1a,b in the manuscript but presents absolute contributions to provisioning and guarding (per day - 10 hours activity) rather than relative ones. Estimated marginal means ± CI_{95} are presented for (a) provisioning and (b) guarding based on GLMMs detailed in tables S9. * and ** mark significance of $p < 0.05$ and $p < 0.001$, respectively.

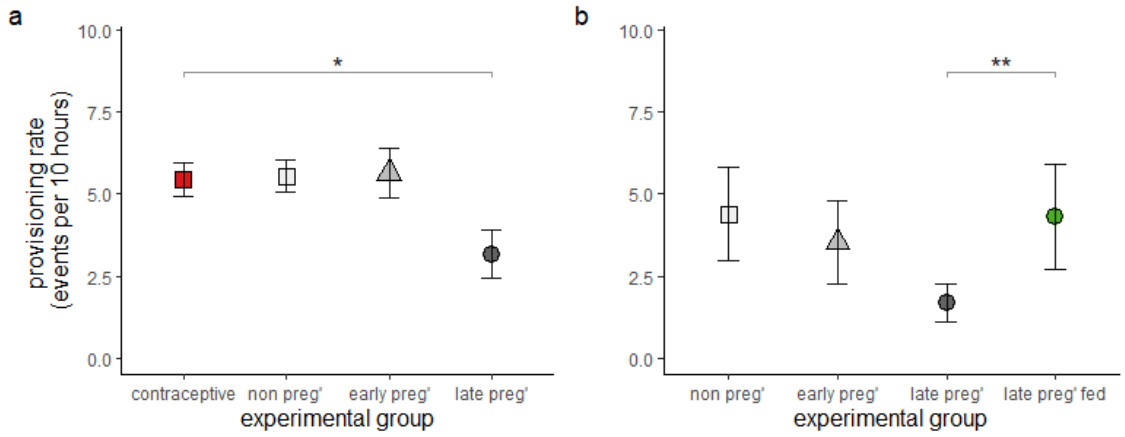

Fig S2. Effects of two pregnancy-related, experimental manipulations on contributions to provisioning. This figure is equivalent to Fig. 3 in the manuscript but presents absolute contributions to provisioning (per day - 10 hours activity) rather than relative ones presented in Fig. 3 (no qualitative differences between the two). (a) subordinate females treated with contraceptive injection to prevent pregnancy (n = 54) versus control (saline jab) subordinates which were: non-, early- and late-pregnant (n = 50, 20, 16, respectively); (b) dominant females that were experimentally fed during late pregnancy (n = 6) versus control unfed dominants that were: non-, early- and late pregnant (n = 7, 10, 9, respectively). Estimated marginal means ± SE are presented based on the GLMMs detailed in table S11. Statistical significance is marked only for differences between treated and control groups with *, ** for $p < 0.05$, $p < 0.01$, respectively

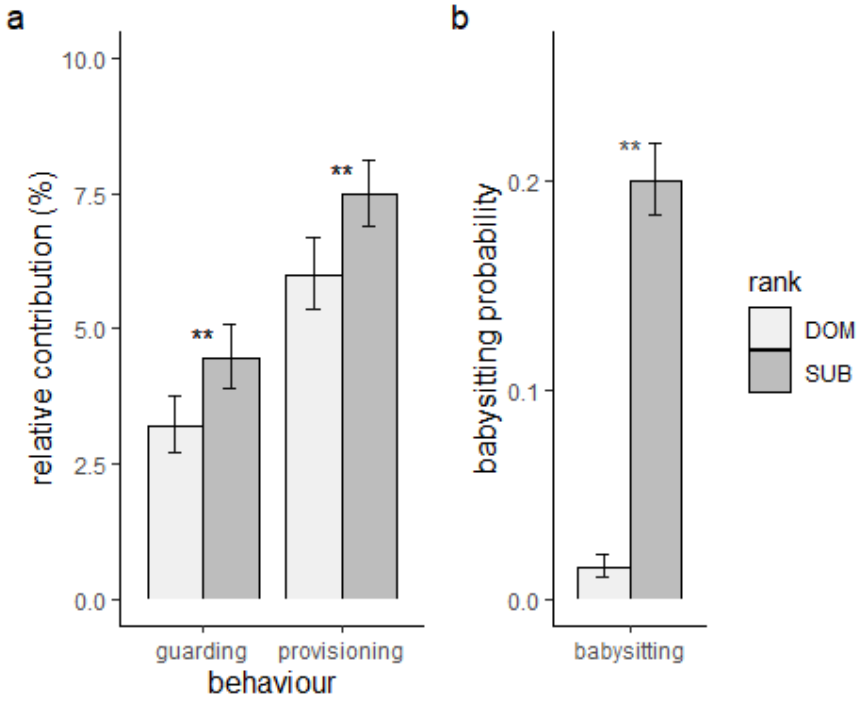

Fig S3. Differences between dominants (DOM) and subordinates (SUB) without accounting for pregnancy status. Estimated marginal means ± CI_{95} are presented for (a) guarding, provisioning and (b) babysitting based on running the GLMMs specified in Tables S1-3 without the *pregnancy status* factor. ** mark statistically significant differences (provisioning: $\beta = -0.22 \pm 0.04$, $t = 5.81$, $p < 0.001$; guarding: $\beta = -0.34 \pm 0.06$, $t = 5.38$, $p < 0.001$; babysitting: $\beta = -2.78 \pm 0.06$, $t = 19.52$, $p < 0.001$).