



Teaching safety to the young?
Longitudinal research with a resident
family group of Golden Jackals (*Canis*
***aureus* L.) (Bulgaria)**

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OUTLINE

Objective: monitoring adult transference of risk-avoiding skills to three yearlings from the 2020 litter;

Claim: (i) The existential success of the family group critically depended on controlling juvenile resource use;

(ii) the teaching process relies on transferring hierarchical dominance to risk-avoiding behaviour ('behave to danger as you behave to me');

- **Teaching context and tools:** food distribution in a sharing commensal context in which adult and yearling/s act as a supervisor-pupil pair.

Table 1. Number of visits for each hour of trap camera recording
*minus badger, jackal/badger, and non-specifics' visits

Time/No of visits*	
>19:00-20:00	2
20:00-21:00	33
21:00-22:00	131
22:00-23:00	88
23:00-24:00	76
00:00-01:00	43
01:00-02:00	33
02:00-03:00	26
03:00-04:00	32
04:00-05:00	28
05:00-06:00	11
Total	503

Table 2. Three schematized periods of bait-site use and per cent values of usage

Period of use	Time (DST-Sofia)	Visiting %
Before-sunset	>19:00-21:00	6.82
Peak	21:00-24:00	58.28
After-midnight	00:00-05:00	34.89

Table 3. Overnight use by composition*

*minus badger, jackal/badger, and non-specifics' visits

Period of use/composition	Before sunset (19:00-21:00)/No of visits	Peak (21:00-24:00)	After-midnight (00:00-06:00)	Total	Visiting %
Yearlings	15	81	52	148	29.191
Adults	7	86	59	152	29.98
Adults with members of own group	13	84	40	137	27.022
Adults with rivals	-	7	-	7	1.308
Rivals	1	21	7	29	5.719
Not recognized	2	20	12	34	6.706
Total	38	299	170	507	99.926

Summary: overnight bait-site use by composition

Three compositions are of greatest prominence:

- (i) Of the three juniors (Black Tail, Boldy, and Skinny);
- (ii) Of the two most prominent supervisors – White Back, and the mother in the group – Whiskers, when visiting singly. But note: a junior may be circling at a distance, with only eyes peering from the ‘safe sector’ bushes
- (iii) Of White Back and Whiskers with members of the own group – i.e. the supervised juniors (‘supervisor-pupil’ composition);
- (iv) The alpha-male (Big Man) has a small share in visiting and his appearances are brief: the majority of them fall into the 1 min., and 1-5 min slots.

The 'class-room' (at low water):

1. Bait;
2. Safe-approach sector for sub-adult use;
3. Safety-rim line;
4. Entry/exit path for sub-adult use;
5. Camera;
6. Summer car-track;
7. Predominant wind



‘Unsafe’ (1) vs. ‘safe’ (2) areas, separated by a ‘safety-rim’ line



Adult checking for safety: 'twigging' (1)



Adult checking for safety: 'twigging' (2)



Adult vs. juvenile contrasts: 'Whiskers' walking upright straight to 'bowl', rummaging with front foot



Adult vs. juvenile contrasts: 'Black Tail'
dragging and swaying, afraid



Adult-juvenile ('teacher-pupil') contrasts:

'White Back' standing upright and back to camera, 'Black Tail', half-crouching, facing the camera, and taking up a slice left for him at the safety-rim line



Juveniles: in and out of the 'safe sector'

After-midnight 'supervisor' ('White Back'); sub-adult ('Skinny');



Leaving in safe corner for 'pupil'



'Pupil' taking from 'safe corner' and eating there



Disciplining: Supervisor keeping pupil in 'safe corner'



Disciplining: keeping pupil back



Breaking the rules: 'Black Tail' in daylight 'solo' action



Taking slice left in the 'safe sector'



Conclusions

- Hierarchical dominance in resource use helps to achieve internalization of danger-avoiding survival skills by the young;
- The model hypothesizes a synonymy between submissive and danger-evasive behaviour ('behave to danger as you behave to me');
- Juveniles' submissive posture and gait is functionally synonymous to risk-evasion;
- Adult confident behaviour in a resource-use context is semantically synonymous to dominance.