Supplementary material:

Comparative assessment of behaviorally-derived personality structures in golden-handed tamarins (*Saguinus midas*), cotton-top tamarins (*Saguinus oedipus*), and common marmosets (*Callithrix jacchus*).

Masilkova M., Weiss A., Šlipogor V., Konečná M.

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Table S1. *Composition and Demography of Studied Groups*

Group	*n*	Adults	Subadults	Juveniles	Infants
Common marmosets	**17**				
Veli group[a]	2	**1F, 1M**	-	-	-
Ginevra group[a]	5	**1F, 1M,** 1M	1F, 1M	-	-
Pooh group[a]	4	1F, **1M,** 2M	-	-	-
Sparrow group[a]	3	**1F, 1M,** 1M	-	-	-
Vento group[a]	3	3M	-	-	-
Golden-handed tamarins	**28**				
Brno	4	**1F,** 1F, 2M	-	-	-
Hodonín	4	**1F, 1M,** 1M	1M	1F	2M
Jihlava1	5	**1F,** 2F, **1M**	1F	-	1F, 1M
Magdeburg	3	**1F, 1M**	1M	-	2M
Plzeň	2	**1F, 1M**	-	1F, 1M	-
Praha	7	1F, **1M,** 3M	1F, 1M	1F, 1M	-
Tierpark Berlin	3	**1F, 1M**	1F	-	2M
Cotton-top tamarins	**20**				
Bojnice	4	**1F, 1M**	2M	2F	2F
Bratislava	3	**1F, 1M,** 1M	-	-	1F
Jihlava2	4	**1F, 1M**	1F, 1M	1M	1F, 1M
Ostrava	4	**1F,** 1F, 2M	-	-	-
Ústí nad Labem	5	**1F, 1M,** 2M	1F	-	1M

Note. Breeding individuals are indicated in bold. F = female, M = male, *n* = number of observed individuals, [a] housed at the University of Vienna. Age categories defined according to Cleveland & Snowdon (1984) in cotton-top tamarins, Moura (2003) in golden-handed tamarins, and Ingram (1977) in common marmosets.

Table S2. *Ethogram of Common Marmosets (Callithrix jacchus), Cotton-Top Tamarins (Saguinus oedipus), and Golden-Handed Tamarins (Saguinus midas) with Behaviors Used for Computing Behavioral Indices in Bold*

Behavior	Definition	Recording method	Species
Locomotion/postures			
Cling	individual hangs on tightly to vertical substrate using claws of both hands and feet (i.e., wire mesh, wall, tree trunks)	I	all
Hang	individual is suspended from wire mesh ceiling of enclosure or branch holding on using all limbs or legs	I	all
Jump	focal individual jumps to overcome gaps between substrates in the enclosure (i.e., branches, trunks, shelves, walls, …); including change of substrate)	C, I	all
Lie	individual places its body in horizontal position with limbs hanging down or rested; on horizontal or slightly inclined substrate	I	all
Move	horizontal or vertical movement of more than 50 cm in a relaxed way; including walking, running and climbing; excluding chasing, playing and fleeing	C, I	all
Rest	sitting or lying in relaxed position with eyes open or closed; individual may be in proximity or contact with other individual	C, I	all
Sit	individual is in stationary position sitting on horizontal substrate	I	all
Feeding/Food interactions			
Approach - food	oriented approach towards individual possessing food item	C	all
Begging	scrounging the food from individual that is eating by fixing the food item with sight; may involve characteristic vocalization (moaning), touching or attempting to take the food item	C	all
Carry food away	calm leaving from proximity or contact and taking food away; e.g., from feeding bowl; excluding flee, play and startled locomotion	C	all
Co-feeding	joining other individual eating from the same feeding bowl	C, I	all
Contact - food	initiation of contact with individual possessing food item	C	all
Drinking	ingestion of liquids by drinking from water bowl/dispenser, licking wet surfaces or hands dipped in water	C, I	all
Eating	handling, chewing and active ingestion of food by swallowing it	C, I	all
Follow - food	individual follows the movement of another individual that possesses food to its proximity	C	all
Prey catching	catching invertebrates moving freely in the enclosure	C	all
Prey catching - attempt	unsuccessful attempt to catch invertebrates moving freely in the enclosure	C	all
Sharing food	voluntary sharing of food item with other individual resulting in eating together the same food item the possessor holds in hand or yielding the food item; often after begging	C	all
Stealing food	taking food from other individual´s hand or mouth	C	all
Stealing food - attempt	unsuccessful attempt to steal food from hand or mouth of other individual	C	all
Substrate scanning	visual inspection of ground or wall in order to find food; individual might be on the ground or on substrate above the ground	C	all
Taking food from keeper	individual takes food from the zookeeper´s hand	C	tamarins

Exploration/Object interactions

Approach - object	oriented approach towards individual possessing the object of interest	C	all
Attention	individual fixes its stare to the object of interest to examine it; usually followed by moving in direction of object	C	all
Contact - object	initiation of contact with individual possessing the object of interest	C	all
Follow - object	individual follows the movement of another individual that possesses the object to its proximity	C	all
General exploration	manipulative investigation of objects, enrichment or equipment of enclosure using hands or mouth	C, I	all
Object licking	individual licks surface, substrate or object	C	all
Object manipulation	manipulation of object (e.g., twigs, leaves, bark; excluding food) using hands or mouth; including looking at, sniffing and biting into the object	C, I	all
Stealing object	taking an object (e.g., twig, leaf, bark) from individual possessing it	C	all
Stealing object - attempt	unsuccessful attempt to possess an object that is held by other individual	C	all
Substrate searching	sitting on the ground and looking for the food in the substrate by using hands	C, I	all

Olfactory

Allomarking	scent marking over the body of another individual that might carry infants	C	all
Individual sniffing	smelling the body, face or anogenital region of other individual	C	all
Muzzle rubbing	pressing the oro-facial region onto the substrate and rubbing it with movements of head	C	all
Object sniffing	smelling the surface of substrate, objects, scent marks or food	C	all
Scent marking	rubbing the anogenital area against the substrate in a sitting position or by prolonged dragging the anogenital/suprapubic region along the substrate (may be accompanied by urine discharge) or rubbing the sternal area	C	all
Urine tasting	individual licks urine drops of another individual either left on substrate or while the individual is urinating or scent marking	C	all

Comfort

Face scratching	rubbing muzzle with hand	C	all
Head twist	individual stretches its head by tilting it back	C	all
Scratching	rapid rubbing of body using the claws of hand or foot; individual doesn´t have to be visually focused on the scratched area	C	all
Self-grooming	using claws of hands or mouth to pick through its own skin or fur; including removing particles; individual is visually focused on the groomed area	C, I	all
Stretching	stretching the entire body or limbs; might be hanging from the branch or ceiling	C	all

Play

Joining in play	individual engages in ongoing social play of other individuals	C	all
Play with object	manipulation or biting into an object in the context of play	C, I	all
Social play	non-aggressive and active interaction of 2 or more individuals, including play chasing, play wrestling, displaying, biting, repeated jumping/falling from one branch to another together with others	C, I	all

Solicit play	attempt to attract the attention and involve other individual in playing; including staring, open mouth staring, tongue flicking, hide and seek, pushing the individual or jumping in front of the individual	C	all
Solitary play	repeated jumping and falling from one branch to another, swinging and bouncing on branches; excluding play with object	C, I	all
Affiliative			
Allogrooming	individual picks slowly through the fur or skin of other individual using the claws of 1 or both hands or mouth; including removing particles	C, I	all
Arm over	placing arm around other individual's upper body or shoulders	C	all
Contact	individual is in body contact or in comfortable reach of arm (<9 cm) with other individual	C, I	all
Huddling	animal lies across, sits or lies next to other individual in tight body contact; limbs can be intertwined	C	all
Invite grooming	individual lowers its body or stretches out on its back or side requesting grooming	C	all
Kiss	muzzle-muzzle contact of 2 animals; may involve tongue flicking	C	all
Licking individual	individual licks another individual´s face, body or anogenital region; often an infant	C	all
Nuzzling	individual gently rubs its muzzle against other individual´s face, body or anogenital region; may be accompanied by sniffing and licking	C	all
Proximity	individual is in the distance max. 30 cm from other individual	C, I	all
Waist clasping	placing both arms from behind around other individual´s waist	C	all
Sexual			
Copulation	male mounts a female; including penile insertion and thrusting; sometimes accompanied by tongue flicking	C	all
Mounting	individual gets on back of other individual with arms around its waist; may include pelvic thrusts and tongue flicking	C	all
Lip smacking	individual is smacking its lips while fixing the gaze on another individual	C	marmosets
Infant care			
Climb off	infant climbs from the carrier to substrate or another carrier	C	all
Climb on	infant climbs on the back or side of potential carrier (from substrate or another carrier); limbs of infant are not in the contact with substrate; initiative of infant	C	all
Infant rejection	caretaker dislodges infant clinging to it or prevents infant to climb on by using scratching, biting, pushing, pulling infant´s extremities or rolling the infant against substrate	C	all
Infant rejection - attempt	unsuccessful attempt to dislodge infant from back or prevent infant from climbing on	C	all
Invitation to carry	potential carrier attempts to entice the infant in order to carry it; including tongue flicking, lowering its body or piloerection	C	all
Nursing	infant is from the ventral side of the female suckling; infant´s mouth is on the nipple of female	C	all
Solicit carrying	infant approaches potential carrier trying to climb on its back moaning; potential carrier is not interested	C	all
Taking infant on	potential carrier gathers infant from substrate or back of current carrier in order to carry it; initiative of potential carrier	C	all
Taking infant on - attempt	unsuccessful attempt of potential carrier to gather infant from substrate or back of the current carrier in order to carry it; infant refuses to climb on or the carrier refuses to transfer the infant; sometimes results in aggression	C	all

	between caretakers		
Dominance			
Avoiding	individual while travelling changes the direction of its move in order to avoid another individual	C	all
Displacement	individual chases other individual away from potential source, e.g., food, water, sleeping box	C	all
Grasp	individual places its arm over the other individual´s shoulder, head, upper body or touches other individual´s face in dominant manner while slightly raising its body or head	C	all
Grimace	lip corners are pulled back, lower lip is retracted so the mouth is slightly open revealing dentition with pressed jaws; accompanied by vocalization	C	tamarins
Slit stare	individual stares at individual or object with eyelids half close; head is often slightly tilted backwards; mouth might be partially opened showing the teeth	C	marmosets
Tufts flatten	ear tufts remained flattened against the head	C	marmosets
Agonistic non-contact			
Arched bristle display	individual stares at other individual, limbs flexed, vertebral column bent into high arch with fur piloerected; often accompanied by frowning; individual might be moving or vocalizing (in Masilkova et al., 2018 as "Body display")	C	all
Frown	individual stares at other individual and lowers its eyebrows; might be accompanied by tongue or ear flicking, vocalizations or in marmosets by erected tufts (in Masilkova et al., 2018 as "Facial threat")	C	all
Headshake	rapid turning the head from side to side on the horizontal plane; might be accompanied by teeth chattering	C	tamarins
Open mouth display	individual stares at another individual with mouth widely open exposing its teeth	C	tamarins
Tongue flick	protrusion and rapid rhythmical movements of the tongue tip up and down	C	tamarins
Genital display	individual turns, raises its tail and shows the genitals	C	marmosets
Tufts flick stare	movements of ear tufts forward and backward on the horizontal plane; individual fixes its stare at other individual	C	marmosets
Tufts forward	the ear tufts are held forward slightly erected; may precede the attack	C	marmosets
Agonistic contact			
Beating	repeated pushing and hitting other individual using arms; other individual usually beats back	C	all
Bite	individual bites another individual with its teeth usually in limbs or head; teeth may or may not penetrate the skin	C	all
Chase	chasing other individual that is fleeing and trying to hide; rapid locomotion	C	all
Fight	aggressive physical confrontation of individuals; short fast struggle involving biting, wrestling, hitting, scratching, kicking; victim may scream	C	all
General aggression	any fast, aggressive act of behavior or unspecified physical assault of other individual that observer was not able to register in detail	C	all
Grab	individual grabs hair of other individual; may pull out strand of hair	C	all
Push	individual aggressively hits other individual using its hand; may push the other individual away	C	all
Face press	individual grabs the head of other individual and presses its open mouth to oponent´s mouth	C	tamarins
Cuff	rapid and superficial scratching/hitting the other individual; usually to the	C	marmosets

	neck region		
Other social			
Approach	individual comes in proximity to other individual	C	all
Attention - individual	fixed gaze on individual of interest; in context of hostility or curiosity	C	all
Departure	leaving from contact or proximity of other individual; excluding fleeing, displacement or carrying food or object away	C	all
Follow	individual follows the movement of other individual to its proximity	C	all
Teeth cleaning	individual uses its hands to open mouth of other individual and clean its teeth by using tongue; doesn´t usually last long as groomee tries to recoil; often followed by aggression from groomee	C	all
Terminate grooming	individual ends the allogrooming	C	all
Other			
Alert	vigilant observing of environment; individual is stationary and may turn its head from side to side	C, I	all
Leg stand	individual stands on hind legs staring in a fixed direction; might lean against an object with its hands	C	all
Looking	individual is stationary and calmly looks around	I	all
Out of sight	individual disappears from sight of observer to the box or separate part of enclosure	C, I	all
Vomiting	throwing up, usually after eating insect	C	all
Watching	individual observes particular object, place, animal or person	I	all
Gouging	individual grasps the substrate with its hand and gnaws into bark, branches or shelves with its teeth; often followed by scent marking	C	marmosets
Vocalizations			
General alarm	individual vocalizes (Type E or H chirp) when startled or frightened	C	tamarins
Chirp	quiet call with series of high-pitched notes with each falling from high to low frequency and with variable time intervals between them; mouth is closed or slightly open	C	marmosets
Cough	low pitched non-tonal sound emitted with closed mouth	C	marmosets
Ek	very short call with few harmonics; uttered singly or in series	C	marmosets
Gecker	series of low pitched, harsh, staccato sounds; mouth closed or open with body vibrating noticeably	C	marmosets
Loud shrill	very loud whistle-like call of constant pitch with mouth widely open	C	marmosets
Moan	infant and juvenile insistent prolonged call; uttered singly or in series	C	marmosets
Phee	soft whistle with constant pitch emitted singly or in succession; mouth closed or partially open	C	marmosets
Scream	unevenly modulating call very unpleasant to human ear; uttered singly or in succession	C	marmosets
Tsik	brief sharp alarmed call; uttered singly or in series; rises slightly in pitch before dropping straight down; mouth half-open	C	marmosets
Tsik-Ek	very loud, sharp and rapid succession of tsik, ek and sometimes cough calls	C	marmosets
Twitter	rapid series of short notes uttered at intervals >0.1 s; loud sound emitted with open mouth	C	marmosets
Whirr	quiet call uttered with mouth almost closed and vibrating body; pleasant	C	marmosets

	sound to human ear		
Substrates			
Branch	branch or stem of tree or bush; excluding vertical stems	I	all
Ceiling	roof or ceiling of enclosure enabling hanging or moving	I	all
Ground	floor of the enclosure		all
Other	other equipment of enclosure, e.g., ropes, pipes, toys, enrichment	I	all
Shelf	horizontal surfaces wider and longer than 10 cm, e.g., shelves, top of sleeping box	I	all
Trunk	vertical trunk or stem of any diameter	I	all
Wall	vertical wall (wire mesh, artificial rockwork) of enclosure enabling clinging and locomotion	I	all
Box	nesting box providing shelter	I	tamarins
Basket	nesting basket	I	marmosets

Note. C = continuous focal recording, I = instantaneous focal sampling.

Table S3. *Descriptive Statistics of Behavioral Measures on 22 Behavioral Indices by Species*

	Common marmoset				Golden-handed tamarin				Cotton-top tamarin			
	min	max	mean	SD	min	max	mean	SD	min	max	mean	SD
Activity diversity^{S}	1.80	2.18	2.02	0.11	1.54	2.24	1.87	0.20	1.43	2.22	1.79	0.25
Affiliation^{P}	0.14	0.68	0.31	0.13	0.07	0.49	0.28	0.10	0.06	0.49	0.22	0.15
Approaches^{F}	0.80	11.00	5.46	3.27	2.73	48.75	13.10	9.84	2.00	30.20	9.86	7.66
Carrying food away^{F}	0.10	1.10	0.38	0.26	0.00	1.59	0.71	0.46	0.00	2.40	0.77	0.71
Contact aggression^{F}	0.00	3.80	1.10	1.04	0.07	14.00	2.35	2.78	0.07	12.87	3.04	3.19
Departures^{F}	1.80	15.70	7.21	4.13	5.40	44.00	18.53	11.78	3.33	33.07	12.77	8.88
Exploration^{F}	0.00	6.80	2.59	1.97	0.07	21.40	3.40	4.28	0.13	7.20	2.86	2.50
Grooming(act)^{F}	0.30	7.20	2.63	2.09	0.53	18.00	4.73	4.51	0.00	2.93	1.02	0.80
Grooming(rec)^{F}	0.20	6.20	2.09	1.56	0.20	12.38	4.28	2.77	0.00	4.60	1.58	1.22
Invite grooming(act)^{F}	0.20	5.20	1.51	1.31	0.33	6.27	2.10	1.67	0.00	2.80	1.11	0.70
Invite grooming(rec)^{F}	0.00	3.60	1.56	1.06	0.21	6.87	2.07	1.86	0.13	2.53	1.04	0.67
Monitoring^{P}	0.06	0.29	0.13	0.06	0.01	0.21	0.06	0.05	0.02	0.17	0.10	0.04
Object sniffing^{F}	3.90	19.10	8.06	4.04	0.67	14.63	5.70	4.07	1.13	8.00	2.93	1.78
Passive affiliation^{P}	0.59	0.98	0.84	0.10	0.35	0.93	0.73	0.14	0.49	0.96	0.78	0.15
Resting^{P}	1.45	6.78	3.76	1.31	1.19	12.15	3.76	2.10	1.49	10.30	4.61	2.41
Scent marking^{F}	2.60	27.20	9.64	6.56	1.47	30.63	6.83	6.20	0.07	18.87	4.82	4.99
Scratching^{F}	4.80	42.70	17.14	8.53	14.36	66.93	37.50	12.09	7.07	35.80	17.19	7.86
Self-grooming^{F}	0.70	4.60	2.16	1.32	0.00	9.60	2.27	2.39	0.20	2.53	0.93	0.65
Substrate diversity^{S}	1.37	1.81	1.61	0.13	0.14	1.43	0.85	0.36	0.14	1.27	0.88	0.27
Terminate grooming^{F}	0.30	7.00	2.56	2.06	0.40	14.07	4.67	3.92	0.07	2.93	1.05	0.76
Threats^{F}	0.00	20.90	3.20	4.91	0.20	17.13	1.73	3.21	0.07	4.47	1.40	1.16
Vigilance^{F}	1.80	6.80	4.02	1.59	0.00	21.00	2.96	4.30	0.00	5.60	2.12	2.00

Table S4. *Repeatability Estimates of 22 Behavioral Indices for Each Species*

	Common marmoset			Golden-handed tamarin			Cotton-top tamarin		
Behavioral index	R ± SE	95% CI	*p*	R ± SE	95% CI	*p*	R ± SE	95% CI	*p*
Activity diversity^{S}	0.21 ± 0.19	[0.00, 0.62]	0.20	**0.60 ± 0.10**	**[0.36, 0.75]**	**0.001**	**0.69 ± 0.10**	**[0.44, 0.83]**	**0.001**
Affiliation^{P}	**0.69 ± 0.14**	**[0.34, 0.88]**	**0.002**	**0.56 ± 0.11**	**[0.31, 0.73]**	**0.001**	**0.84 ± 0.06**	**[0.67, 0.92]**	**0.001**
Approaches^{F}	**0.67 ± 0.15**	**[0.28, 0.86]**	**0.004**	**0.86 ± 0.05**	**[0.75, 0.93]**	**0.001**	**0.93 ± 0.04**	**[0.83, 0.96]**	**0.001**
Carrying food away^{F}	0.27 ± 0.20	[0.00, 0.64]	0.14	**0.30 ± 0.12**	**[0.05, 0.51]**	**0.008**	**0.73 ± 0.10**	**[0.47, 0.86]**	**0.001**
Contact aggression^{F}	**0.89 ± 0.07**	**[0.70, 0.96]**	**0.001**	**0.75 ± 0.08**	**[0.56, 0.85]**	**0.001**	**0.76 ± 0.09**	**[0.54, 0.88]**	**0.001**
Departures^{F}	**0.78 ± 0.10**	**[0.53, 0.91]**	**0.002**	**0.85 ± 0.05**	**[0.72, 0.92]**	**0.001**	**0.93 ± 0.03**	**[0.85, 0.97]**	**0.001**
Exploration^{F}	**0.77 ± 0.11**	**[0.49, 0.91]**	**0.002**	**0.84 ± 0.05**	**[0.70, 0.91]**	**0.001**	**0.77 ± 0.08**	**[0.57, 0.88]**	**0.001**
Grooming(act)^{F}	**0.63 ± 0.15**	**[0.26, 0.84]**	**0.003**	**0.68 ± 0.09**	**[0.47, 0.80]**	**0.001**	***0.29 ± 0.14***	***[0.00, 0.54]***	***0.02***
Grooming(rec)^{F}	**0.71 ± 0.13**	**[0.37, 0.88]**	**0.002**	**0.56 ± 0.11**	**[0.32, 0.74]**	**0.001**	***0.26 ± 0.15***	***[0.00, 0.55]***	***0.03***
Invite grooming(act)^{F}	0.40 ± 0.19	[0.00, 0.72]	0.06	**0.68 ± 0.09**	**[0.47, 0.81]**	**0.001**	**0.37 ± 0.14**	**[0.07, 0.62]**	**0.004**
Invite grooming(rec)^{F}	0.26 ± 0.19	[0.00, 0.60]	0.13	**0.70 ± 0.08**	**[0.50, 0.82]**	**0.001**	***0.25 ± 0.14***	***[0.00, 0.52]***	***0.04***
Monitoring^{P}	**0.76 ± 0.11**	**[0.50, 0.90]**	**0.001**	**0.74 ± 0.08**	**[0.56, 0.85]**	**0.001**	**0.63 ± 0.12**	**[0.35, 0.79]**	**0.001**
Object sniffing^{F}	**0.80 ± 0.10**	**[0.54, 0.92]**	**0.001**	**0.88 ± 0.04**	**[0.78, 0.93]**	**0.001**	**0.77 ± 0.08**	**[0.57, 0.88]**	**0.001**
Passive affiliation^{P}	**0.53 ± 0.18**	**[0.06, 0.80]**	**0.01**	**0.62 ± 0.10**	**[0.39, 0.77]**	**0.001**	**0.45 ± 0.14**	**[0.15, 0.67]**	**0.002**
Resting^{P}	**0.51 ± 0.18**	**[0.11, 0.79]**	**0.01**	**0.63 ± 0.10**	**[0.41, 0.78]**	**0.001**	**0.73 ± 0.09**	**[0.51, 0.85]**	**0.001**
Scent marking^{F}	**0.89 ± 0.07**	**[0.71, 0.96]**	**0.001**	**0.82 ± 0.05**	**[0.68, 0.90]**	**0.001**	**0.79 ± 0.08**	**[0.60, 0.89]**	**0.001**
Scratching^{F}	**0.81 ± 0.09**	**[0.56, 0.92]**	**0.001**	**0.76 ± 0.07**	**[0.58, 0.86]**	**0.001**	**0.82 ± 0.07**	**[0.64, 0.91]**	**0.001**
Self-grooming^{F}	**0.67 ± 0.15**	**[0.30, 0.86]**	**0.003**	**0.61 ± 0.10**	**[0.39, 0.77]**	**0.001**	***0.28 ± 0.14***	***[0.00, 0.55]***	***0.02***
Substrate diversity^{S}	0.40 ± 0.20	[0.00, 0.75]	0.05	**0.91 ± 0.03**	**[0.82, 0.95]**	**0.001**	**0.88 ± 0.05**	**[0.75, 0.94]**	**0.001**
Terminate grooming^{F}	**0.61 ± 0.16**	**[0.19, 0.83]**	**0.01**	**0.68 ± 0.09**	**[0.47, 0.82]**	**0.001**	***0.26 ± 0.14***	***[0.00, 0.53]***	***0.03***
Threats^{F}	**0.96 ± 0.03**	**[0.88, 0.98]**	**0.001**	**0.80 ± 0.06**	**[0.64, 0.89]**	**0.001**	**0.60 ± 0.12**	**[0.32, 0.77]**	**0.001**
Vigilance^{F}	0.00 ± 0.14	[0.00, 0.48]	0.50	**0.94 ± 0.02**	**[0.89, 0.97]**	**0.001**	**0.51 ± 0.13**	**[0.19, 0.71]**	**0.001**

Note. Significant results ($p < 0.05$) given in bold. Significant repeatability estimates with 0 in the confidence interval are in italics.

Table S5. *Common Marmosets: Varimax-Rotated Solution of REFA and Congruence Between REFA and PCA Solutions*

	Factor				Coefficient
Behavioral index	Ext	Agr	Ass	h^2	of congruence[a]
Passive affiliation^{P}	**-0.84**	-0.09	-0.04	0.71	0.9999
Exploration^{F}	**0.82**	-0.24	-0.11	0.75	0.9999
Departures^{F}	**0.74**	0.07	0.10	0.57	1.0000
Activity diversity^{S}	**0.68**	**-0.41**	-0.20	0.67	0.9999
Vigilance^{F}	**0.64**	-0.04	0.14	0.43	0.9999
Approaches^{F}	**0.61**	-0.16	0.37	0.53	0.9999
Carrying food away^{F}	**0.60**	-0.04	0.11	0.37	0.9999
Affiliation^{P}	**-0.51**	0.31	**-0.46**	0.57	1.0000
Substrate diversity^{S}	**0.49**	0.32	-0.16	0.37	0.9998
Terminate grooming^{F}	0.17	**0.76**	-0.05	0.60	1.0000
Grooming(act)^{F}	0.17	**0.74**	-0.04	0.57	1.0000
Invite grooming(rec)^{F}	**-0.41**	**0.71**	0.00	0.68	0.9999
Contact aggression^{F}	-0.12	**-0.64**	0.17	0.45	1.0000
Grooming(rec)^{F}	-0.22	**0.61**	0.10	0.43	0.9999
Monitoring^{P}	0.20	**-0.58**	-0.06	0.38	1.0000
Scent marking^{F}	-0.10	-0.08	**0.86**	0.75	0.9999
Object sniffing^{F}	0.07	0.34	**0.71**	0.62	0.9998
Scratching^{F}	0.36	-0.13	**0.69**	0.62	0.9997
Threats^{F}	-0.15	**-0.48**	**0.52**	0.53	0.9999
Invite grooming(act)^{F}	-0.03	**0.44**	**0.48**	0.43	0.9999
Self-grooming^{F}	0.20	0.00	0.23	0.09	1.0000
Resting^{P}	0.10	-0.17	-0.02	0.04	0.9982
Explained variance	20.77%	17.26%	12.68%		
Factor congruence	0.9999	0.9999	0.9999		

Note. Salient loadings ≥|0.40| highlighted in bold. h^2 = communalities, [a] see Lorenzo-Seva & ten Berge (2006), Ext = Extraversion, Agr = Agreeableness, Ass = Assertiveness.

Table S6. *Golden-Handed Tamarins: Varimax-Rotated Solution of REFA and Congruence Between REFA and PCA Solutions*

	Factor				Coefficient
Behavioral index	Ass	Agr[b]	Ext[b]	h^2	of congruence[a]
Approaches[F]	**0.88**	0.05	-0.14	0.80	0.9999
Contact aggression[F]	**0.82**	-0.06	-0.12	0.69	1.0000
Scent marking[F]	**0.75**	-0.17	0.24	0.65	0.9999
Threats[F]	**0.74**	-0.23	-0.03	0.59	0.9999
Departures[F]	**0.68**	0.29	-0.27	0.62	0.9999
Object sniffing[F]	**0.67**	-0.08	**0.46**	0.66	1.0000
Substrate diversity[S]	**-0.56**	-0.47	**0.42**	0.71	0.9999
Resting[P]	**-0.51**	-0.21	-0.18	0.34	0.9999
Terminate grooming[F]	0.05	**0.89**	0.03	0.79	1.0000
Grooming(act)[F]	0.03	**0.85**	0.00	0.72	1.0000
Passive affiliation[P]	0.22	**-0.81**	-0.02	0.71	1.0000
Affiliation[P]	0.30	**0.78**	-0.04	0.69	1.0000
Self-grooming[F]	-0.02	**0.67**	-0.10	0.45	0.9999
Grooming(rec)[F]	0.10	**0.56**	0.17	0.36	1.0000
Invite grooming(act)[F]	0.04	0.22	**0.75**	0.62	1.0000
Monitoring[P]	0.04	-0.17	**0.73**	0.57	0.9999
Invite grooming(rec)[F]	0.05	0.37	**0.68**	0.60	1.0000
Vigilance[F]	-0.19	-0.16	**0.57**	0.39	0.9999
Activity diversity[S]	0.04	0.35	**0.52**	0.39	0.9999
Exploration[F]	-0.04	-0.08	**0.49**	0.25	1.0000
Carrying food away[F]	0.33	0.22	0.02	0.16	0.9998
Scratching[F]	0.31	0.05	-0.06	0.10	0.9999
Explained variance	20.19%	20.01%	13.78%		
Factor congruence	0.9999	0.9999	0.9999		

Note. Salient loadings ≥|0.40| highlighted in bold. h^2 = communalities, [a] see Lorenzo-Seva & ten Berge (2006), [b] = loadings reflected, Ass = Assertiveness, Agr = Agreeableness, Ext = Extraversion.

Table S7. *Common Marmosets: Promax-Rotated Solution of PCA and Correlations Between Components*

	Component			
Behavioral index	PC1	PC2	PC3	h^2
Passive affiliation^{P}	**-0.90**	-0.19	0.01	0.79
Exploration^{F}	**0.89**	-0.16	-0.19	0.83
Departures^{F}	**0.79**	0.16	0.06	0.63
Activity diversity^{S}	**0.73**	-0.36	-0.27	0.74
Vigilance^{F}	**0.67**	0.03	0.11	0.47
Carrying food away^{F}	**0.63**	0.03	0.08	0.41
Approaches^{F}	**0.60**	-0.10	0.36	0.58
Substrate diversity^{S}	**0.56**	**0.40**	-0.20	0.43
Affiliation^{P}	**-0.49**	0.27	**-0.46**	0.64
Terminate grooming^{F}	0.21	**0.83**	-0.05	0.69
Grooming(act)^{F}	0.21	**0.81**	-0.04	0.66
Invite grooming(rec)^{F}	**-0.41**	**0.71**	0.04	0.75
Contact aggression^{F}	-0.17	**-0.70**	0.17	0.52
Grooming(rec)^{F}	-0.23	**0.62**	0.14	0.48
Monitoring^{P}	0.20	**-0.59**	-0.09	0.42
Resting^{P}	0.10	-0.17	-0.04	0.05
Scent marking^{F}	-0.21	-0.10	**0.94**	0.89
Object sniffing^{F}	0.00	0.36	**0.78**	0.73
Scratching^{F}	0.30	-0.10	**0.73**	0.72
Threats^{F}	-0.24	**-0.54**	**0.57**	0.61
Invite grooming(act)^{F}	-0.07	**0.46**	**0.54**	0.50
Self-grooming^{F}	0.19	0.02	0.24	0.10
Explained variance	23%	19%	15%	

Note. Salient loadings ≥|0.40| highlighted in bold. h^2 = communalities. The correlations between promax-rotated components: PC1 vs PC2: -0.13, PC1 vs PC3: 0.15, PC2 vs PC3: -0.03.

Table S8. *Golden-Handed Tamarins: Promax-Rotated Solution of PCA and Correlations Between Components*

	Component			
Behavioral index	PC1	PC2	PC3	h^2
Terminate grooming^F	**0.94**	-0.06	0.09	0.87
Grooming(act)^F	**0.90**	-0.08	0.05	0.80
Passive affiliation^P	**-0.89**	0.34	-0.06	0.79
Affiliation^P	**0.81**	0.21	0.02	0.76
Self-grooming^F	**0.72**	-0.11	-0.06	0.50
Grooming(rec)^F	**0.59**	0.03	0.22	0.40
Approaches^F	-0.01	**0.94**	-0.11	0.89
Contact aggression^F	-0.12	**0.88**	-0.09	0.76
Scent marking^F	-0.25	**0.82**	0.28	0.73
Threats^F	-0.30	**0.81**	-0.01	0.66
Object sniffing^F	-0.15	**0.71**	**0.51**	0.74
Departures^F	0.27	**0.68**	-0.24	0.68
Substrate diversity^S	**-0.47**	**-0.54**	**0.40**	0.79
Resting^P	-0.18	**-0.51**	-0.23	0.38
Carrying food away^F	0.21	0.33	0.05	0.18
Scratching^F	0.03	0.32	-0.04	0.11
Invite grooming(act)^F	0.22	0.00	**0.82**	0.71
Monitoring^P	-0.20	0.05	**0.78**	0.65
Invite grooming(rec)^F	0.38	-0.01	**0.75**	0.69
Vigilance^F	-0.17	-0.19	**0.60**	0.45
Activity diversity^S	0.36	-0.01	**0.57**	0.44
Exploration^F	-0.09	-0.04	**0.52**	0.29
Explained variance	22%	22%	16%	

Note. Salient loadings ≥|0.40| highlighted in bold. h^2 = communalities. The correlations between promax-rotated components: PC1 vs PC2: 0.18, PC1 vs PC3: -0.02, PC2 vs PC3: -0.04.

Table S9. *Cotton-Top Tamarins: Promax-Rotated Solution of PCA and Correlation Between Components*

	Component		
Behavioral index	PC1	PC2	h^2
Activity diversity^S	0.90	0.20	0.86
Exploration^F	**0.88**	-0.09	0.77
Threats^F	**0.88**	-0.15	0.78
Passive affiliation^P	**-0.88**	0.18	0.78
Grooming(act)^F	**0.72**	0.28	0.62
Vigilance^F	**0.70**	**-0.48**	0.68
Invite grooming(rec)^F	**0.70**	-0.04	0.48
Terminate grooming^F	**0.66**	0.35	0.58
Resting^P	**-0.65**	-0.37	0.59
Object sniffing^F	**0.47**	-0.38	0.35
Self-grooming^F	**0.43**	-0.27	0.24
Monitoring^P	**0.43**	-0.13	0.19
Scent marking^F	0.33	0.07	0.12
Departures^F	-0.12	**0.93**	0.87
Approaches^F	-0.02	**0.85**	0.71
Scratching^F	-0.14	**-0.83**	0.72
Affiliation^P	-0.23	**0.82**	0.71
Contact aggression^F	0.00	**0.76**	0.57
Carrying food away^F	-0.15	**0.67**	0.46
Grooming(rec)^F	0.08	**0.61**	0.38
Substrate diversity^S	0.33	**0.54**	0.42
Invite grooming(act)^F	0.23	**0.43**	0.25
Explained variance	29%	26%	

Note. Salient loadings ≥|0.40| highlighted in bold. h^2 = communalities. The correlation between promax-rotated components: PC1 vs PC2: 0.06.

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