**Online Supporting Material**

Table S1

*Interrater Reliability of Trait Ratings*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Item ICC (3,1) ICC (3,k)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Active .26 .85

Affectionate/Friendly .07 .55

Affiliative .04 .42

Aggressive .11 .67

Anxious .09 .60

Autistic .03 .35

Bold .20 .80

Bullying .16 .76

Calm .07 .56

Cautious .13 .70

Considerate/Kind .06 .48

Deceptive .08 .58

Defiant .07 .55

Dependent .07 .56

Depressed .06 .52

Dominant .26 .85

Eccentric .05 .44

Excitable .12 .68

Fearful .11 .65

Human oriented .16 .75

Impulsive .09 .61

Inquisitive/Curious .11 .67

Table S1 Continued \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Item ICC (3,1) ICC (3,k)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Intelligent .10 .64

Inventive .12 .66

Irritable .09 .61

Jealous/Attention-Seeking .14 .72

Manipulative .11 .67

Methodical .03 .36

Mischievous .13 .71

Persistent .06 .50

Playful .14 .71

Predictable .00 -.05

Protective .07 .55

Relaxed .09 .61

Self-caring .03 .36

Sexual .11 .66

Socially-Inept .05 .47

Solitary .08 .60

Stingy .14 .71

Temperamental/Moody .12 .65

Timid .13 .70

Table S2

*Reliability of Behaviors*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Item ICC (3,1) ICC (3,k)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Begging  Contact  Contact-Aggression  Displace  Display  Fear grimace  Flee  Food sharing  Groom other  Groom self  Intervene  Noncontact- Aggression  Play  Postconflict- Affiliation  Proximity  Sexual  Solicit  Submissive | .67 |  | .86 |  |
| .76 |  | .90 |  |
| -.02 |  | -.06 |  |
| .04 |  | .12 |  |
| .50 |  | .75 |  |
| -.06 |  | -.20 |  |
| .27 |  | .52 |  |
| -.03 |  | -.08 |  |
| .76 |  | .90 |  |
| -.02 |  | -.06 |  |
| .16 |  | .36 |  |
| .4 |  | .67 |  |
| .50 |  | .75 |  |
| .17 |  | .38 |  |
| .62 |  | .83 |  |
| .59 |  | .81 |  |
| .03 |  | .10 |  |
| .32 |  | .59 |  |

Table S3

*Eigenvalues for Factors determined using EFA*

|  |  |
| --- | --- |
| Factors | Eigenvalues % of Variance Cumulative % of  Variance |
| 1  2  3  4  5  6  7  8  9  10 | 13.32 33.30 33.30  5.81 14.52 47.82  4.81 12.03 59.85  2.53 6.34 66.19  2.0 4.99 71.18  1.11 2.79 73.97  .98 2.38 76.35  .95 1.91 78.26  .77 1.77 80.03  .71 1.59 81.62 |
|  |  |

Table S4

*Factor Loadings of Chimpanzee Personality Traits on Five Varimax-Rotated Factors*

Trait Reactivity/ Dominance Extraversion Openness Agreeableness

Undependability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Temperamental/Moody | **.84** | .05 | .03 | .03 | -.04 |
| Irritable | **.84** | .04 | -.18 | .00 | .02 |
| Deceptive | **.80** | .11 | .14 | .07 | .18 |
| Mischievous | **.79** | -.02 | .24 | .33 | -.08 |
| Impulsive | **.76** | .06 | .21 | .25 | -.07 |
| Defiant | **.75** | .1 | .15 | .22 | -.05 |
| Bullying | **.72** | **.50** | -.03 | .18 | .10 |
| Jealous/  Attention-seeking | **.70** | .14 | .4 | .25 | -.01 |
| Stingy | **.70** | **.40** | .01 | .02 | .27 |
| Manipulative | **.70** | .34 | .23 | .06 | .26 |
| Aggressive | **.65** | .36 | -.02 | .30 | -.01 |
| Calm | **-.63** | .03 | .06 | **-.44** | .28 |
| Eccentric | **.61** | -.05 | .27 | -.24 | -.12 |
| Socially Inept | **.60** | -.14 | .14 | -.05 | **-.44** |
| Excitable | **.54** | .05 | .26 | **.50** | -.10 |
| Relaxed | **-.47** | **.45** | .13 | **-.43** | .29 |
| Autistic | **.40** | -.21 | -.07 | -.24 | -.18 |
| Fearful | -.03 | **-.88** | .01 | -.19 | -.07 |
| Timid | -.17 | **-.78** | -.28 | -.25 | -.14 |
| Cautious | -.30 | **-.77** | -.14 | -.18 | .11 |

Table S4 Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Dominant | **.42** | **.75** | .13 | .16 | .23 |
| Dependent | -.12 | **-.73** | -.02 | .17 | .33 |
| Anxious | .30 | **-.73** | .01 | .21 | .03 |
| Bold | **.55** | **.60** | .29 | .31 | .12 |
| Human oriented | .06 | .16 | **.79** | .03 | -.11 |
| Inventive | .28 | -.02 | **.79** | .10 | .13 |
| Inquisitive/  Curious | .27 | .11 | **.77** | .23 | -.11 |
| Affectionate/  Friendly | -.35 | -.03 | **.66** | .18 | .27 |
| Intelligent | .03 | .19 | **.65** | .10 | -.02 |
| Persistent | **.40** | .35 | **.56** | .11 | .11 |
| Affiliative | .09 | -.02 | **.53** | **.46** | **.40** |
| Methodical | .22 | .35 | **.51** | -.23 | .38 |
| Self-caring | -.08 | -.10 | **.46** | .13 | .35 |
| Solitary | -.11 | -.07 | -.10 | **-.77** | -.28 |
| Depressed | .09 | -.30 | -.18 | **-.73** | **.06** |
| Active | .29 | -.03 | **.46** | **.70** | -.12 |
| Sexual | .26 | .09 | .10 | **.61** | .25 |
| Playful | .17 | -.05 | **.59** | **.60** | -.08 |
| Protective | .07 | .05 | .01 | .09 | **.85** |
| Considerate/  Kind | **-.49** | -.18 | .31 | .04 | **.50** |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Note.* **Bold** numbers have an eigenvalue greater than .40 for that factor. Underlined numbers have the highest loadings on that factor.

Table S5

*Factor Loadings of Chimpanzee Personality Traits on Six Direct Oblimin-Rotated Factors*

Trait Reactivity/ Dominance Extraversion Openness Agreeableness Methodical

Undependability

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Temperamental/  Moody | **.89** | .06 | -.04 | .04 | -.04 | .03 |
| Irritable | **.85** | -.06 | -.07 | .08 | -.04 | .24 |
| Deceptive | **.84** | .04 | .08 | .02 | .10 | -.22 |
| Stingy | **.77** | -.32 | -.15 | .02 | .20 | -.17 |
| Manipulative | **.66** | -.21 | .11 | -.04 | .30 | .05 |
| Defiant | **.66** | .01 | .16 | -.25 | -.06 | .03 |
| Jealous/  Attention-seeking | **.65** | .04 | .33 | -.23 | -.04 | -.12 |
| Bullying | **.63** | **-.46** | -.13 | -.22 | .12 | .08 |
| Aggressive | **.63** | -.35 | -.17 | -.38 | .02 | -.01 |
| Impulsive | **.61** | .02 | .25 | -.25 | .07 | .26 |
| Socially Inept | **.60** | .36 | .06 | .01 | -.42 | -.04 |
| Mischevious | **.60** | .15 | .27 | -.35 | .00 | .09 |
| Eccentric | **.55** | .16 | .38 | .28 | -.01 | .24 |
| Dependent | .02 | **.84** | -.08 | -.16 | 20 | -20 |
| Fearful | -.03 | **.80** | .10 | .08 | -.08 | .25 |
| Timid | -.08 | **.78** | -.20 | .23 | -.12 | .08 |
| Cautious | -.18 | **.78** | -.13 | .10 | .03 | .01 |
| Anxious | .30 | **.77** | -.09 | -.25 | .00 | .02 |
| Dominant | .0 | **-.69** | -.06 | -.12 | .26 | -.01 |
| Bold | **.47** | **-.50** | .23 | -.27 | .11 | -.10 |

Table S5 Continued

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Human oriented | -.02 | -.12 | **.86** | .12 | -.07 | -.07 |
| Inquisitive/  Curious | .06 | -.00 | **.81** | -.22 | -.06 | .06 |
| Intelligent | -.09 | -.21 | **.77** | .02 | -.04 | -.05 |
| Inventive | .21 | .11 | **.72** | -.05 | .05 | -.17 |
| Affectionate/  Friendly | -.38 | .05 | **.56** | -.19 | .35 | -.13 |
| Persistent | **.40** | -.26 | **.53** | .02 | .08 | -.03 |
| Solitary | -.01 | .07 | -.09 | **.75** | -.34 | .01 |
| Active | .01 | .08 | **.47** | **-.70** | -.03 | .11 |
| Depressed | .03 | .23 | .00 | **.69** | -.03 | .12 |
| Playful | -.08 | .05 | **.56** | **-.66** | -.03 | .12 |
| Sexual | .17 | .03 | -.00 | **-.62** | .45 | .06 |
| Calm | **-.44** | -.03 | .02 | **.52** | .28 | -.11 |
| Relaxed | -.33 | **-.44** | .04 | **.48** | .24 | -.10 |
| Excitable | **.42** | -.08 | .19 | **-.47** | -.19 | **.06** |
| Methodical | .29 | -.32 | .30 | **.41** | .31 | -.25 |
| Affiliative | .04 | .24 | .31 | **-.40** | .37 | -.32 |
| Protective | .15 | -.04 | -.14 | .00 | **.88** | .11 |
| Considerate/  Kind | -.35 | .27 | .19 | .10 | **.60** | -.27 |
| Autistic | .22 | .27 | .10 | .14 | .05 | **.56** |
| Self caring | .15 | .19 | .25 | -.04 | .23 | **-.42** |

*Note.* **Bold** numbers have an eigenvalue greater than .40 for that factor. Underlined numbers have the highest loadings on that factor.



*Figure 1. Parallel Analysis of Random Data*

**Rating Scale**

Chimpanzee’s name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Rater’s name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_

**Active**: Spends little time idle and seems motivated to spend considerable time either moving around or engaging in some overt, energetic behavior.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Affectionate/Friendly**: Seems to have a warm attachment or closeness with other chimpanzees. This may entail frequent grooming, touching, embracing, or lying next to others.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Affiliative**: Agreeable, sociable. Appears to like the company of others. Seeks out social contact with, or showing preference for, another animal; for example, playing walking next to, or sitting with another animal.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Aggressive**: Often initiates fights or other menacing and agonistic encounters with other chimpanzees

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Anxious**: Hesitant, indecisive, tentative, jittery.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Autistic**: Does not make eye contact, and/or not well integrated into social group.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bold**: Daring, not restrained or tentative. Not timid, shy or coy.

**1 2 3 4 5 6 7**

Least Most

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Bullying**: Overbearing and intimidating towards younger or lower ranking chimpanzees.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Calm**: Equable, restful: Reacts to others in an even, calm way; is not easily disturbed or agitated.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cautious**: Exhibits a more careful measured approach to investigating things.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Considerate/Kind**: Often consoles others in distress to provide reassurance.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Deceptive**: Deceives others for his/her own benefit.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Defiant**: Assertive or contentious in a way inconsistent with the usual dominance order. Maintains these actions despite unfavorable consequences or threats from others.

**1 2 3 4 5 6 7**

Least Most

**Dependent**: Often relies on other chimpanzees for leadership, reassurance, touching, embracing and other forms of social support.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Depressed**: Often appears isolated, withdrawn, sullen, brooding and has reduced activity.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Dominant**: Able to displace, threaten or take food from other chimpanzees. Or subject may express high status by decisively intervening in social interactions.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Eccentric**: Shows sterotypies or unusual mannerisms.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Excitable**: Easily aroused to an emotional state.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fearful**: Subject reacts excessively to real or imagined threats by displaying behaviors such as screaming, grimacing, running away or other signs of anxiety or distress.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Human oriented**: Very interested in human activities around their enclosure. Solicits support from humans.

**1 2 3 4 5 6 7**

Least Most

**Impulsive**: Often displays some spontaneous or sudden behavior that could not have been anticipated.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Inquisitive/Curious**: Readily explores new situations, objects or animals.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Intelligent**: Quick and accurate in judging and comprehending both social and nonsocial situations.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Inventive**: More likely than others to engage in novel behaviors. E.g. Using new devices or materials in their enclosure.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Irritable**: Often seems in a bad mood or is impatient and easily provoked to anger exasperation and consequent agnostic behavior.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Jealous/Attention-seeking**: Often troubled by others who are in a desirable or advantageous situation such as having food, a choice location or access to social groups. May attempt to disrupt activities or make noise to get attention.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Manipulative**: Is able to get others to do things without using force.

**1 2 3 4 5 6 7**

Least Most

**Methodical**: Does things in a logical, organized manner following a consistent goal.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Mischievous**: Engages in activities or behavior with the goal of provoking negative reactions from someone or doing something that has previously been established as not socially acceptable.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Persistent**: Tends to continue in a course of action, task, or strategy for a long time or continues despite external interference.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Playful**: Is eager to engage in lively, vigorous, sportive or acrobatic behaviors with or without other chimpanzees.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Predictable**: Behavior is consistent and steady over extended periods of time. Does little that is unexpected or deviates from its usual behavioral routine.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Protective**: Shows concern for other chimpanzees and often intervenes to prevent harm or annoyance from coming to them.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Relaxed**: Does not show restraint in postures and movements. Is not tense.

**1 2 3 4 5 6 7**

Least Most

**Self-caring**: Shows high, but healthy level of self-grooming and cleanliness.

**1 2 3 4 5 6 7**

Least Most

**Sexual**: Engages in frequent copulations and/or masturbation.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Socially-inept**: Acts inappropriately in a social setting.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Solitary**: Prefers to spend considerable time alone not seeking or avoiding contact with other chimpanzees.

**1 2 3 4 5 6 7**

Least Most

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Stingy**: Is excessively desirous or covetous of food, favored locations, or other resources in enclosure. Is unwilling to share these resources with others.

**1 2 3 4 5 6 7**

Least Most

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**Temperamental**/**Moody**: Is inconsistent and wildly/varying in its moods and behaviors.

**1 2 3 4 5 6 7**

Least Most

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**Timid**: Lacks confidence is easily alarmed and is hesitant to venture into new social or nonsocial situations.

**1 2 3 4 5 6 7**

Least Most

**Behavioral Ethogram**

**SCAN SAMPLES**

GR Groom - Picking through the hair, searching for and/or removing debris. May be accomplished with hand or mouth. Often accompanied by teeth clacking or lip smacking. May be self-groom or social groom. Social groom can be directed to another animal or received from another animal. This category also includes scratching (scraping of fingernails across the skin).

CT Contact – individuals are touching in any situation. Can include draping over the other, touching in sitting, standing, or laying down positions, etc.

PR Proximity – individuals are within arm’s reach (approximately 1 meter) of their nearest neighbor. Only record for individuals in proximity, all others are presumed to be distant.

PL Play - nonaggressive interactions involving two or more animals. Never accompanied by piloerection, may be accompanied by play-face and/or laughing. Includes rough-and-tumble play (fast paced, vigorous locomotion, wrestling, hitting, pulling, chasing, biting, etc.), quiet play (slower paced, gentle tickling, finger and toe manipulation, etc.), object play, and social play initiation. For solitary play, indicate “no partner”. \*\*Note that at some point, this was indicated using ‘self’.

FD Feeding/Foraging - manipulating the substrate or food item while intermittently transferring items to the mouth or chewing a food item.

IA Inactive - animal is immobile, not engaging in any social activity. Includes lying down, leaning, and reclining, as well as distracted behavior (animal standing at the windows with body oriented and eyes focused on something outside the enclosure.)

LO Locomote - animal's body (trunk rather than just limbs) is moving through space. This can include, walking, running, brachiating, climbing, etc., but is *not* part of any other behavior recorded (e.g. do not record locomote during an aggressive encounter or play).

MA Miscellaneous affiliation - any affiliative interaction which does not fall under the aggressive, submissive, or sexual behavior categories. This may include tandem walking, embrace/kissing, etc. (Tandem walk - can be side-by-side or dorsal-ventral. One or both arms of the initiator are placed around the body of the partner from the side or from immediately behind the partner such that bodily contact is made. Does not include carrying of infant by mother. Embrace/Kiss - a ventro-ventral contact when two individuals face each other and each puts both arms around the other or contact with both arms of an individual encompassing another from behind. Alternately, individual brings lips in contact with another individual. Can be mouth-to-mouth or mouth-to-any other body part.)

AB Abnormal Behavior – includes any abnormal chimpanzee behavior, such as pacing, regurgitation and reingestion, rocking, smearing feces, copraphagy, and other stereotypic behaviors.

AG Agonism/Aggression – any sort of agonistic or aggressive interaction between individuals. This includes both contact and non-contact interactions. Please note that this behavior will be recorded for Ad Libitum samples as well and should be kept separate in the data files.

DP Displace/Supplant - One chimpanzee (B) gives way to another (A), who approaches. Chimpanzee A then claims the sitting space, grooming partner, food, toy, etc that chimpanzee B has left behind. Please note that this behavior will be recorded for Ad Libitum samples as well and should be kept separate in the data files.

SX Sexual behavior – any form of initiated sexual behavior between two individuals. This includes solicits, presents, erections (directed at a female), exploration behavior, mounts, and thrusts. Please note that this behavior will be recorded for Ad Libitum samples as well and should be kept separate in the data files.

BG Begging – one individual begs for food from another, by sticking out the hand or placing the face close to that of the eating chimpanzee.

**AGGRESSIVE/ DOMINANCE**

**Ad libitum sampling**

For aggressive/dominance and submissive behaviors, we will follow our standard protocol of actor (the individual who initiates the behavior) – behavior – reactor. For aggressive encounters, record the most escalated level of aggression seen. For submissive encounters, record whether there was a submissive behavior. In the case of a large scale fight, record the most escalated level of aggression between the main actors, then include those peripheral to the fight who get included for any reason (e.g. they join the fight or an individual in the fight redirects to them). In the case of a serious fight, include a note stating why the fight was started (if known) and who the major actors were.

CODES

DI Display - behavioral sequence incorporating such elements as drumming, repeated swaying, exaggerated, often bipedal locomotion, charging and pilo-erection. Also often includes a repetitive slapping of the ground which begins slowly and gradually becomes more vigorous. It may or may not be accompanied by a pant-hoot call. Note the use of objects in display.

NC Non-contact Aggression - aggression that does not result in contact between the animals. Examples include screaming at, chasing.

CA Contact Aggression – aggression that does include contact between the animals, such as hitting, jumping on, biting.

SM Submissive behavior – any submissive behavior directed at the other individual, including pant grunts, bowing, crouching, bobbing, flinching, avoiding, fleeing, presenting (in a non-sexual context), presenting the wrist, or, during aggression received, fear grinning, or bared-teeth display.

**Other behaviors to record:**

SL Solicit – one individual solicits another for assistance, typically during a fight, but may be a solicitation for “consolation” after a fight. This is done with an arm outstretched towards the individual from whom assistance is solicited. In an aggressive context may include rapid movement of the head by the solicitor between the aggressor and the individual from whom support is solicited.

DP Displace/Supplant - One chimpanzee (A) gives way to another (B), who approaches. Chimpanzee B then claims the sitting space, grooming partner, food, toy, etc that chimpanzee A has left behind.

IV Intervene - interrupting an interaction between two or more individuals; often an interaction is terminated. The intervening animal generally moves quickly where the interaction is taking place, moves between the two animals and may threaten one or both of them.

SX Sexual behavior – any form of initiated sexual behavior between two individuals. This includes solicits, presents, erections (directed at a female), exploration behavior, mounts, and thrusts.

AF General affiliation – any affiliative interaction which does not fall under the aggressive, submissive, or sexual behavior categories. This may include tandem walking, embrace/kissing, etc. (Tandem walk - can be side-by-side or dorsal-ventral. One or both arms of the initiator are placed around the body of the partner from the side or from immediately behind the partner such that bodily contact is made. Does not include carrying of infant by mother. Embrace/Kiss - a ventro-ventral contact when two individuals face each other and each puts both arms around the other or contact with both arms of an individual encompassing another from behind. Alternately, individual brings lips in contact with another individual. Can be mouth-to-mouth or mouth-to-any other body part.)

PA Post-conflict affiliation – same as above, but following with 60 seconds of (or within the same bout as) an incident of aggression.

BG Begging – one individual begs for food from another, by sticking out the hand or placing the face close to that of the eating chimpanzee.

FS Food share – one individual obtains food from another chimpanzee. This includes both active sharing, when the possessor gives the food to the recipient, and the more common passive transfer, in which the recipient takes a piece of food from the possessor without response by the possessor.