

The Strength of Social Bonds
among *Pan troglodytes* Dyads in
Correlation to Age, Sex, Tenure,
and Kinship

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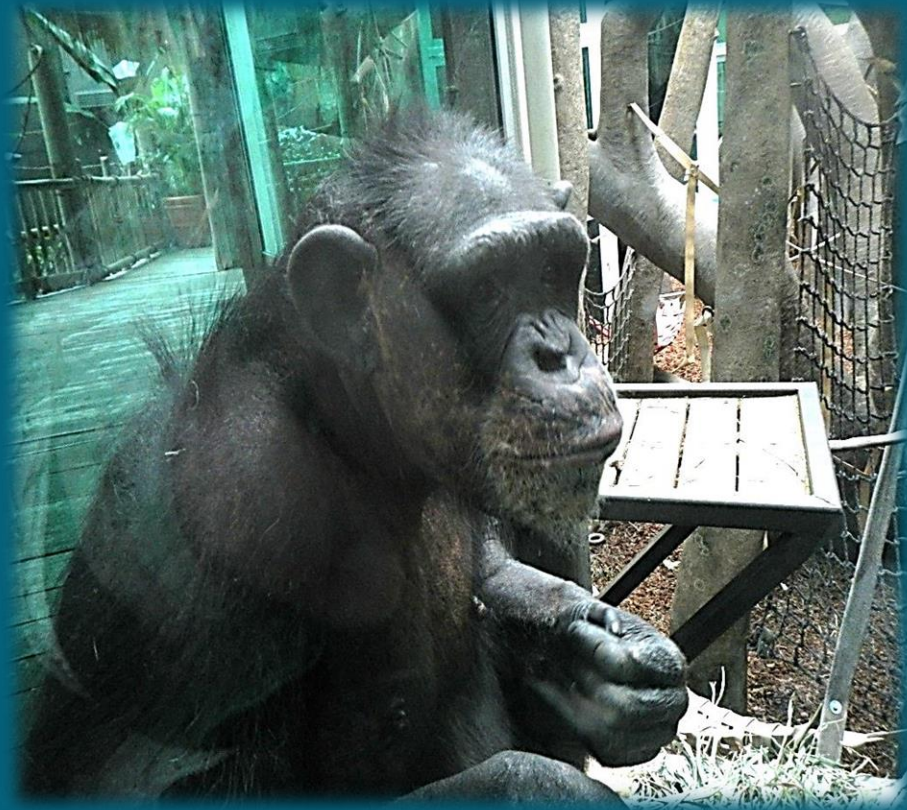
Introduction to Chimpanzee Relationships

- Chimpanzees live in groups called communities.
- Social dynamics between each individual varies from one chimp to the next.
- Dyad= Being a group of two.

Variables Affecting Strength of Dyad

- Sex
- Difference in age
- Tenure
- Kinship

Previous Research



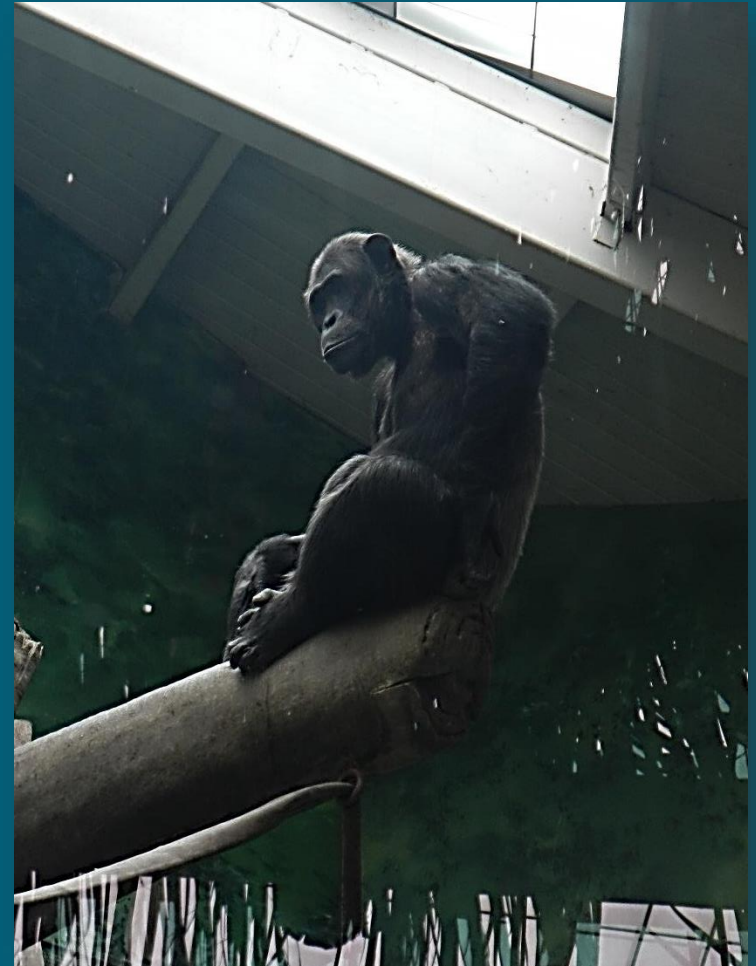
Determining a Strong Dyad

- Grooming
- Kissing and Hugging
- Play
- Sharing of food
- Spend considerable time with one another

Previous Research

The Effects of Variables

- Likeness in age = stronger bond
- Presence of kin = stronger bond
- Longer acquainted = stronger bond
- Same sex dyad = stronger bond



Connection to Anthropology



- Chimpanzees are the closest living relatives of *Homo sapiens*
- Humans share about 98.5% DNA with Chimpanzees
- Help theorize about early hominids

Objectives

- Find how affiliative social interactions among *Pan troglodytes* build strong relationships in regards to sex, age, tenure, and kinship.
- Correlate how the strength of the relationship was influenced by the various positive social interactions.



Methods: Who, Where, and When?

Where: St. Louis Zoo indoor chimpanzee exhibit

*No permit or permission necessary

Who: Community of 7 females and 2 males

When: Observe twice a week for 4 hours per day, during the span of 12 weeks



Methods: Identification



- Take pictures of each individual for reference
- Be able to identify each chimp and know his/her name
- Know age, sex, tenure with other chimps, and kinship

Methods: Observation

Date:

Start Time:

End Time:

Focal Animal:

Time	Behavior	Individual	Notes

- Focal animal method
- 30 minutes per chimpanzee
- Rotation between chimpanzees
- Use of data sheets

Methods: Behavior Codes

Behavior	Code	Description of Behavior
Gives Grooming	(G.G)	The focal animal cleans or manipulates another chimpanzee's body with hands or mouth.
Receive Grooming	(R.G)	When another chimpanzee grooms the focal chimp.
Mutual Grooming	(M.G)	When both chimpanzees groom each other simultaneously.
Greet	(G)	When an individual and the focal animal approach one another and kiss or embrace.
Play	(P)	Chasing, wrestling, tickling, and poking.
Out of Sight	(OO)	When the focal individual is no longer observable.
Aggression	(A)	When an individual and the focal animal bite, scream, fight, hit, or bare teeth one another.
Rest	(R)	When the focal animal is sleeping or sitting still in one place.
Foraging	(F)	When the focal animal is eating, looking for food, or roaming around the exhibit.

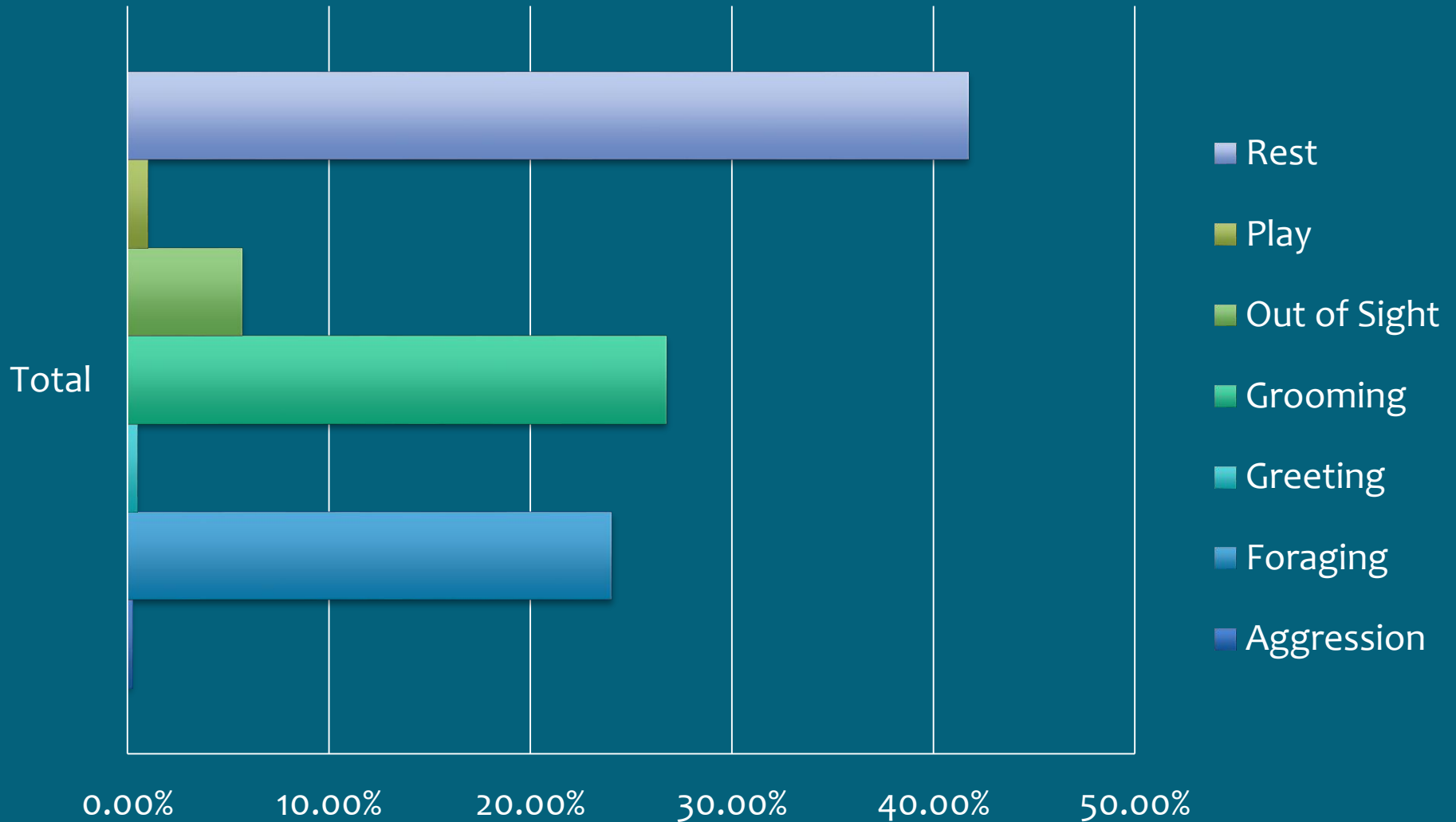
Methods: Interpretation of Results

- Basic descriptive statistics of data
 - Excel
- Value each chimpanzee's relationship with other eight community members
- Evaluate patterns of interaction
 - Sex
 - Tenure
 - Kinship
 - Age



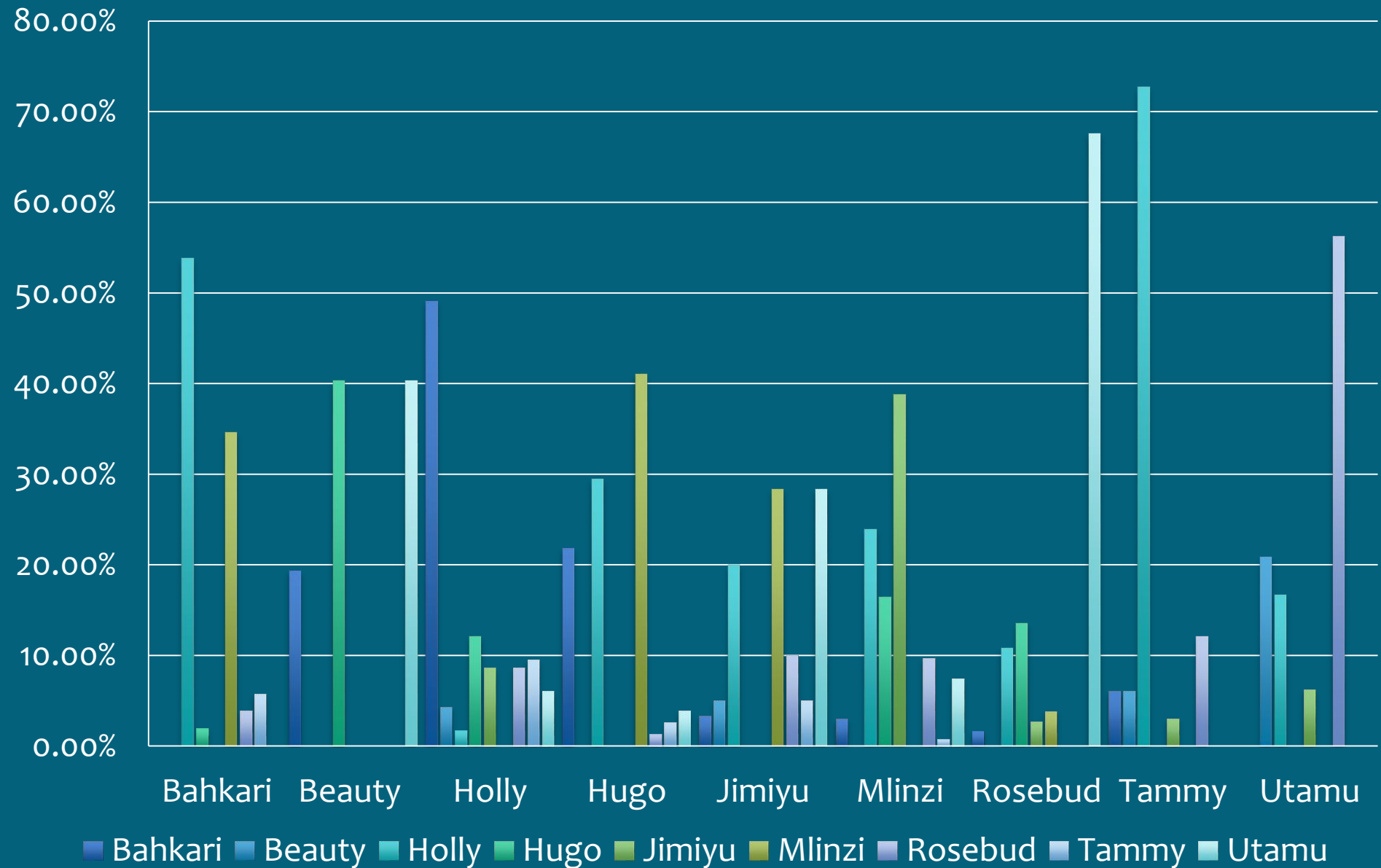
Results: Patterns of Behavior as a Group

Group Behavior



Results: Strongest Bonds

Social Bonds



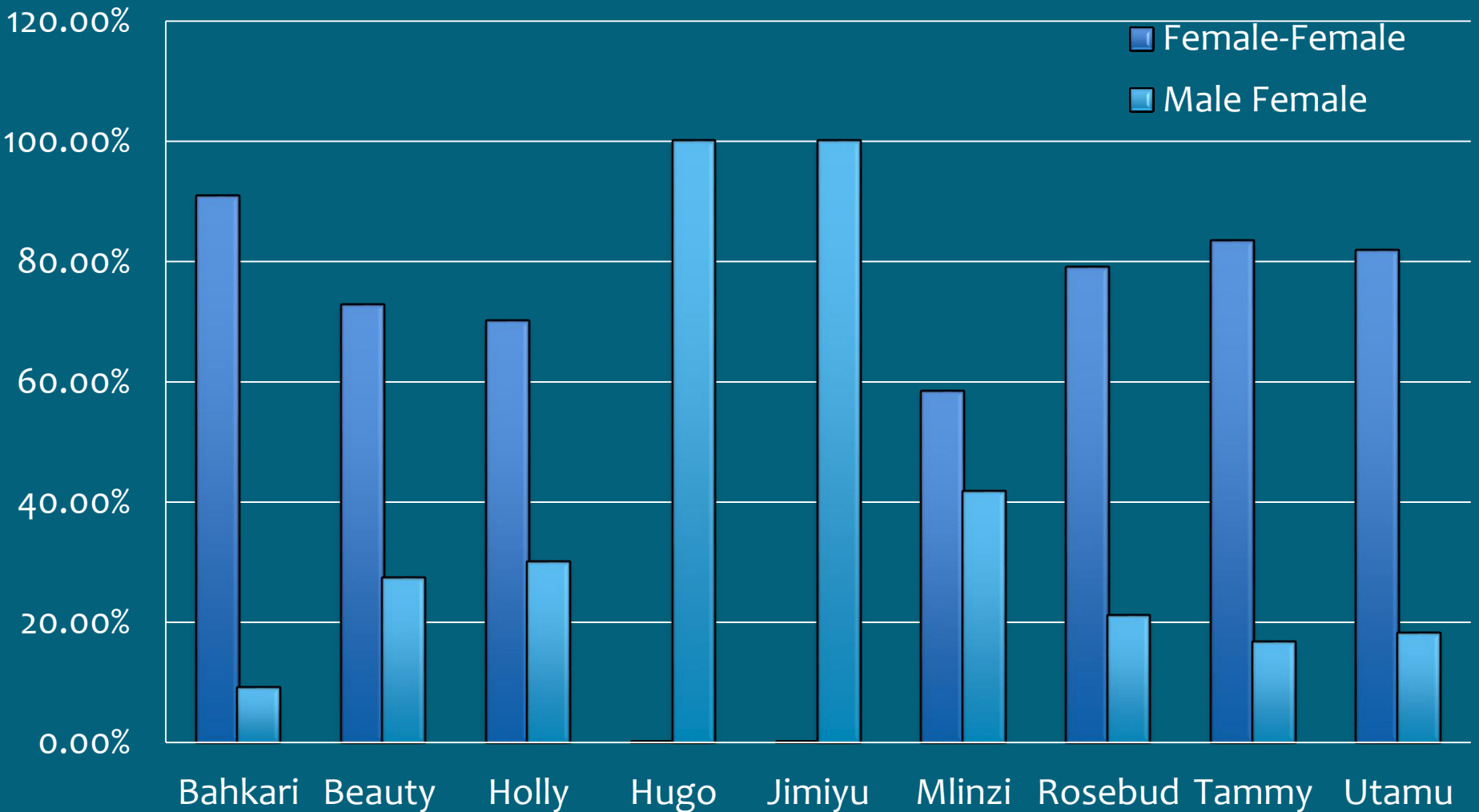
Results: Kinship

- Highest ranking variable
- 5/6 chimps with kin in community preferred their relative over anyone else
- Even in cases of adoption
- Created the strongest dyads



Results: Sex

Sex Preferences



Results: Age and Tenure

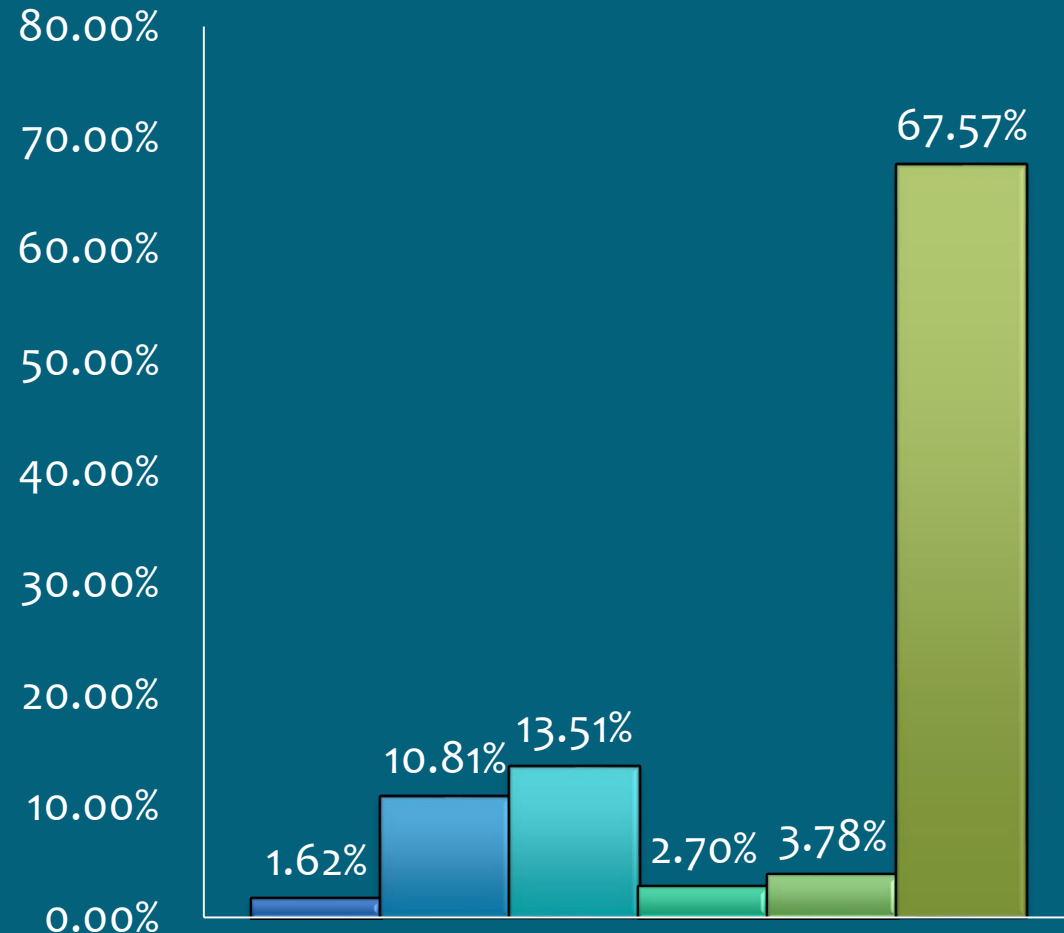
Age

- Least significant variable
- 4/9 chimpanzees chose individuals close to the same age
- Hard to determine

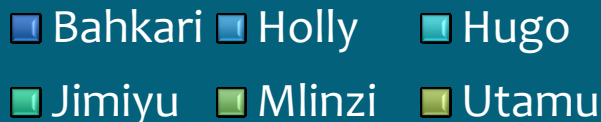
Tenure

- Almost as important as kinship
- 6/9 chimpanzees had long tenure with their strongest partner
- The longer the relationship the stronger the dyad

Interpretation: Kinship



Rosebud



- Equivalent to previous research
- Kinship = value and security in the dyad
- Examples:
 - Rosebud and daughter Utamu
 - Bahkari and adopted sister Holly

Interpretation: Sex

- Results confirmed strength in female same sex dyads
- Contrasted males same sex dyads
- Poor ratio of males to females



Interpretation: Age and Tenure

Age

- Contrasted previous work and expectations
- All dyads with similar age also had another determining factor
- Example:
 - Tammy and Utamu
 - Beauty and Rosebud

Tenure

- Results matched other research
- Long tenure was almost always present with individuals strongest relationship
- If not, it was second.

Interpretation

- Every individual has his/her own preferences of behavior and social bonds
 - Tammy vs. Holly
- Many of the variables overlap
 - Bahkari and Holly
 - Does an overlap make the bond stronger?
 - Or does it just make it harder to determine which variable is more important?



Conclusion

- By observing chimpanzee social behavior I was able to identify which variables created strong bonds within the community.
 - Kinship = Yes
 - Age= No
 - Tenure= Yes
 - Sex= Undetermined
- Keep in Mind
 - Chimpanzees where in captivity
 - Indoor exhibit
 - Each Chimp has his/her own personality and behaviors

Acknowledgments

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