



Video Reuse, Management, & Sharing



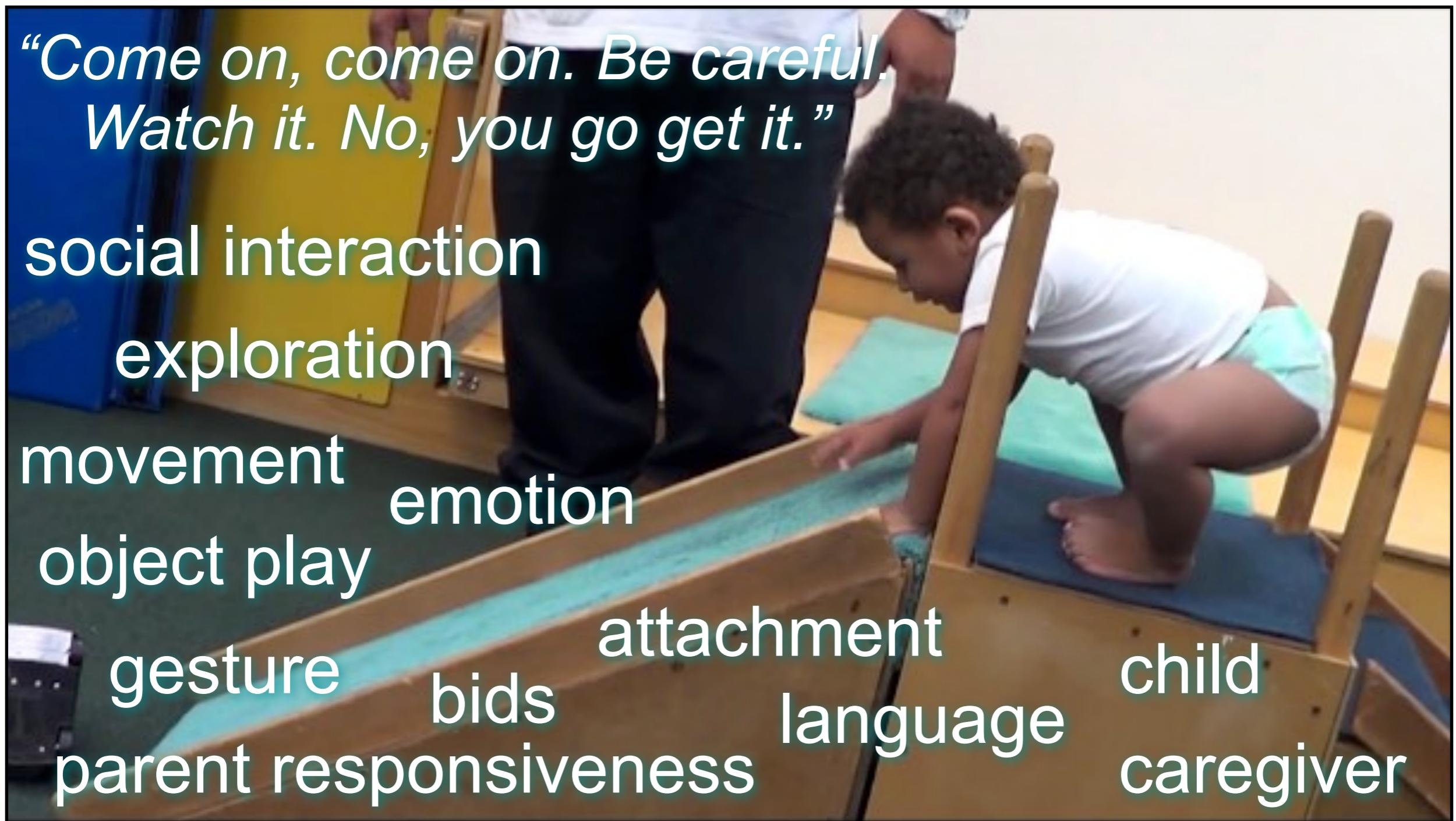
The Databrary Project

**NSF BCS-1238599
NICHD U01-HD-076595
SRCD Strategic Planning Grant**

Agenda

- 12:00-1:00 Introduction to Databrary:
Video reuse & sharing
- 1:00-1:45 Policies & best practices for
sharing & managing video data
- 1:45-2:00 Break
- 2:00-3:00 Video Coding
- 3:00-4:00 Questions & hands-on help

Video captures the richness & complexity of children's behavior



Behavior does not become outdated



Gesell Archives, Databrary: 32 months (filmed 1937)

Research videos are being wasted

- ▶ Classic studies & datasets: Crumbling into dust, dissolving into vinegar, or lost
- ▶ Videos from our own labs: Ancient media, tapes moldering in closets, corrupted hard drives, irretrievable file formats
- ▶ Our research history is disappearing along with the behaviors we worked so hard to capture

Databrary: Preserve & exploit research videos for reuse

- ▶ A home for classic studies & already completed studies
- ▶ A server & video data manager for ongoing studies
- ▶ A library for finding videos & images to use for teaching, learning, & research



Databrary is a video data library for developmental science.
Share videos, audio files, and related metadata. Discover more, faster.



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Join our [online support sessions](#) every Monday from 2-4pm and Thursday from 11am-12pm Eastern time!

◆ TOP TAGS

infants

cognitive development



Video Reuse

Video is uniquely suited for reuse

- ▶ Raw video is largely self documenting
- ▶ Raw video is so rich that new investigators can ask questions that the original researchers had never imagined

Flat file data vs. video

degbb	degbl	degb2	bucketa	bucketb	bucket	bucket1	b
.	-12.00	.	-10.00	.	-10.00	-10.00	
.	-8.00	.	-10.00	.	-10.00	-10.00	
.	.00	.	.00	.	.00	.00	
.	-8.00	.	-10.00	.	-10.00	-10.00	
-8.00	.	-8.00	.	-10.00	-10.00	-10.00	.
-4.00	.	-4.00	.	-4.00	-4.00	-4.00	.
4.00	.	4.00	.	4.00	4.00	4.00	.
-4.00	.	-4.00	.	-4.00	-4.00	-4.00	.
.	-4.00	.	-4.00	.	-4.00	-4.00	-4.00
.	4.00	.	4.00	.	4.00	4.00	4.00

Flat file data vs. video

degbb	degbl	degb2	bucketa	bucketb	bucket	bucket1	b
.	-12.00	.	-10.00	.	-10.00	-10.00	
.	.	.	-10.00	.	-10.00	-10.00	
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.	"Bucket A"	.	-10.00	.	-10.00	-10.00	
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-4.00	.	.	-4.00	.	-4.00	-4.00	
-4.00	.	.	-4.00	.	-4.00	-4.00	
4.00	.	.	4.00	.	4.00	4.00	
-4.00	.	.	-4.00	.	-4.00	-4.00	
-4.00	.	.	-4.00	.	-4.00	-4.00	
.	-4.00	.	-4.00	.	-4.00	-4.00	
.	4.00	.	4.00	.	4.00	4.00	
.	.	.	4.00	.	4.00	4.00	

Video is largely self documenting



You can figure out what's going on



Piraha Videos, Databrary: *number tasks* (filmed 1991)



Reuse: Teaching

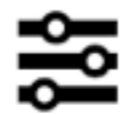
Finding excerpt on infant exploration

Volumes News About Access Community

 Jane D. Researcher  Search | 



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◆ TOP TAGS

infants

cognitive development

Download clip to add to lecture

Search



Volume filters

- Contains sessions
- Has highlights

Contains data released for

- No preference
- Presentation use
- Public use

Contains tag

Contains files of type

Participants' age

Additional filters by field

Volumes 53 matches

- [Social and motor play on a playground](#)
Adolph, Karen
Two pre-adolescent girls engaged in social and gross motor free play on a public playground. The girls were instructed to show the camera operators the various ways in which they play. They used...
- [Pirahã children and adults in everyday activities and various experimental tasks](#)
Gordon, Peter
Several videos depict Pirahã children and adults engaging in everyday activities and various experimental tasks designed to assess numerical cognition.
- [Facial expressions in 6-month old infants and their parents in the still face paradigm and attachment at 15 months in the Strange Situation](#)
Messinger, Daniel
Six-month-old infants and their parents were video-recorded in the Face-to-Face/Still-Face (FFSF) procedure (Adamson & Frick, 2003). Infants sat in a carseat and their parents sat across from them....
- [Human quadrupeds, primate quadrupedalism, and Uner Tan Syndrome](#)
Adolph, Karen, Shapiro, Liza



Reuse: Non-research

Browse! See what folk are up to!

Volumes News About Access Community

 Jane D. Researcher  Search | 



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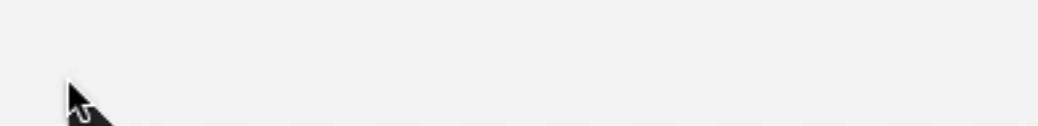


Reuse: Pre-research

Finding data prior to committing to doing a research study

- ▶ Learn how to conduct a procedure
- ▶ Learn about a researcher's stimuli, displays, or codes
- ▶ Preliminary data to determine feasibility
 - ◀ Are the behaviors visible & audible on the videos?
 - ◀ Will this procedure work for you?
 - ◀ Do preliminary results look promising?

View stimulus to evaluate utility

Search 

Volume filters

- Contains sessions
- Has highlights

Contains data released for

- No preference
-  Presentation use
-  Public use

Contains tag

Contains files of type

Any 

Participants' age

0 days - 90+ yrs 

Additional filters by field 

Apply filters

Clear filters

Volumes 53 matches

-  [Social and motor play on a playground](#)
Adolph, Karen
Two pre-adolescent girls engaged in social and gross motor free play on a public playground. The girls were instructed to show the camera operators the various ways in which they play. They used...
-  [Pirahã children and adults in everyday activities and various experimental tasks](#)
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-  [Human quadrupeds, primate quadrupedalism, and Uner Tan](#)



Research Reuse

Common concerns

- ▶ Researchers should collect their own behavioral data
 - ◀ Researchers can reuse **their own** videos
 - ◀ Some videos are so rare, they **cannot** be collected by everyone
 - ◀ If videos exist, why re-collect them?
- ▶ Video data mining is “cheating”
 - ◀ No, new questions & hypotheses can be generated from existing videos (including rigorous experimental studies)

Video reuse supports good science

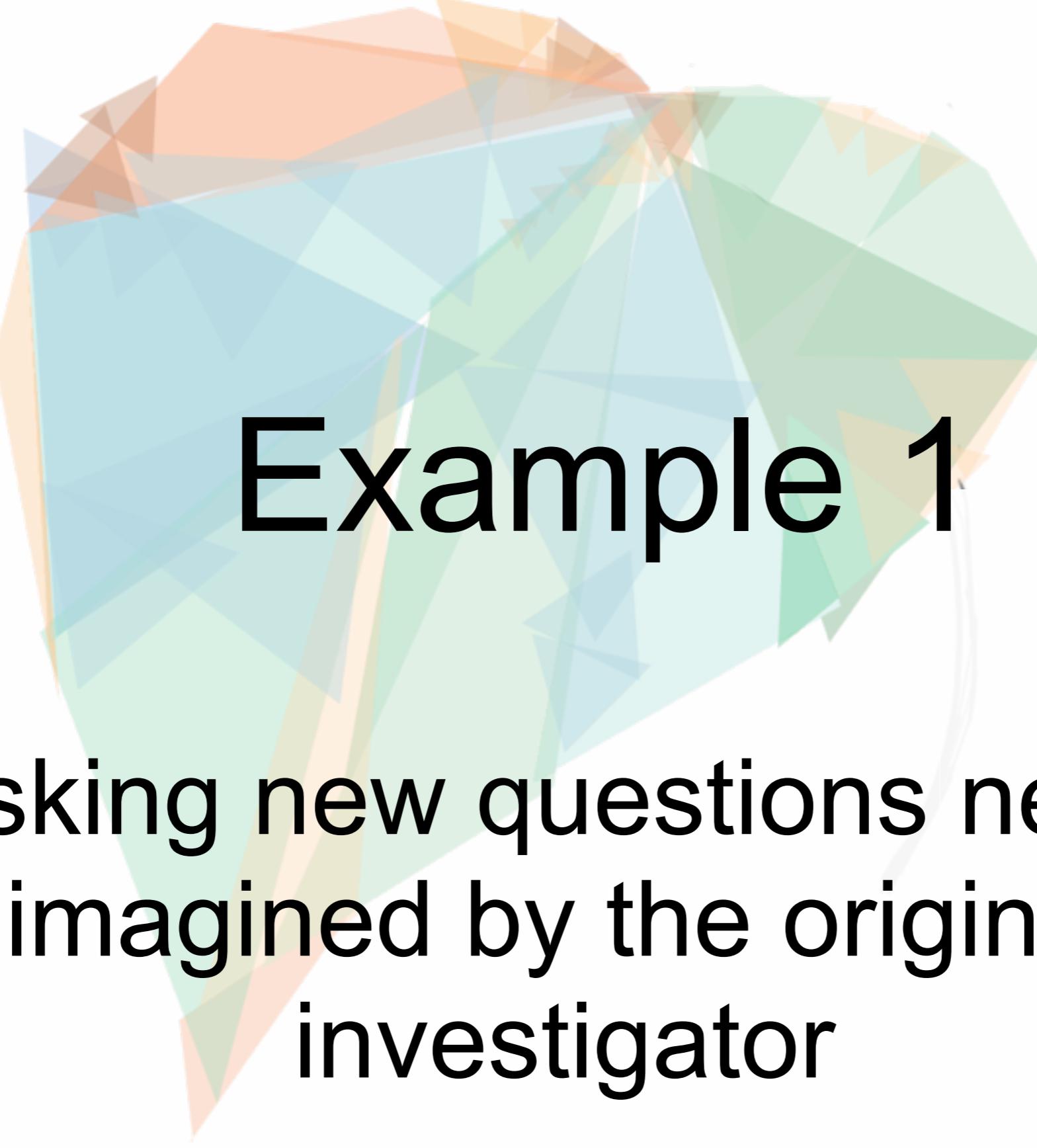
- ▶ Secondary data analysis is the norm in many fields (political science, economics)
- ▶ Developmental data reuse in CHILDES (child language transcripts)
- ▶ Video reuse has more to offer than flat file data & written transcripts
- ▶ Studies based on video reuse are published in tier-one journals

Video reuse supports you

- ▶ Preliminary data for grant applications
- ▶ Increases opportunities for early career investigators, researchers at smaller institutions, & international researchers
- ▶ Increase your chance of federal funding
- ▶ Gives you access to data you cannot collect on your own (rare data, large amounts of data, special populations, diverse samples)

NIH & NSF support video reuse

- ▶ Increasing federal mandates for data management & open access to federally funded data
- ▶ Video reuse makes more efficient use of tax dollars & existing resources
- ▶ Eventually, you will need to make a case for why new data need to be collected



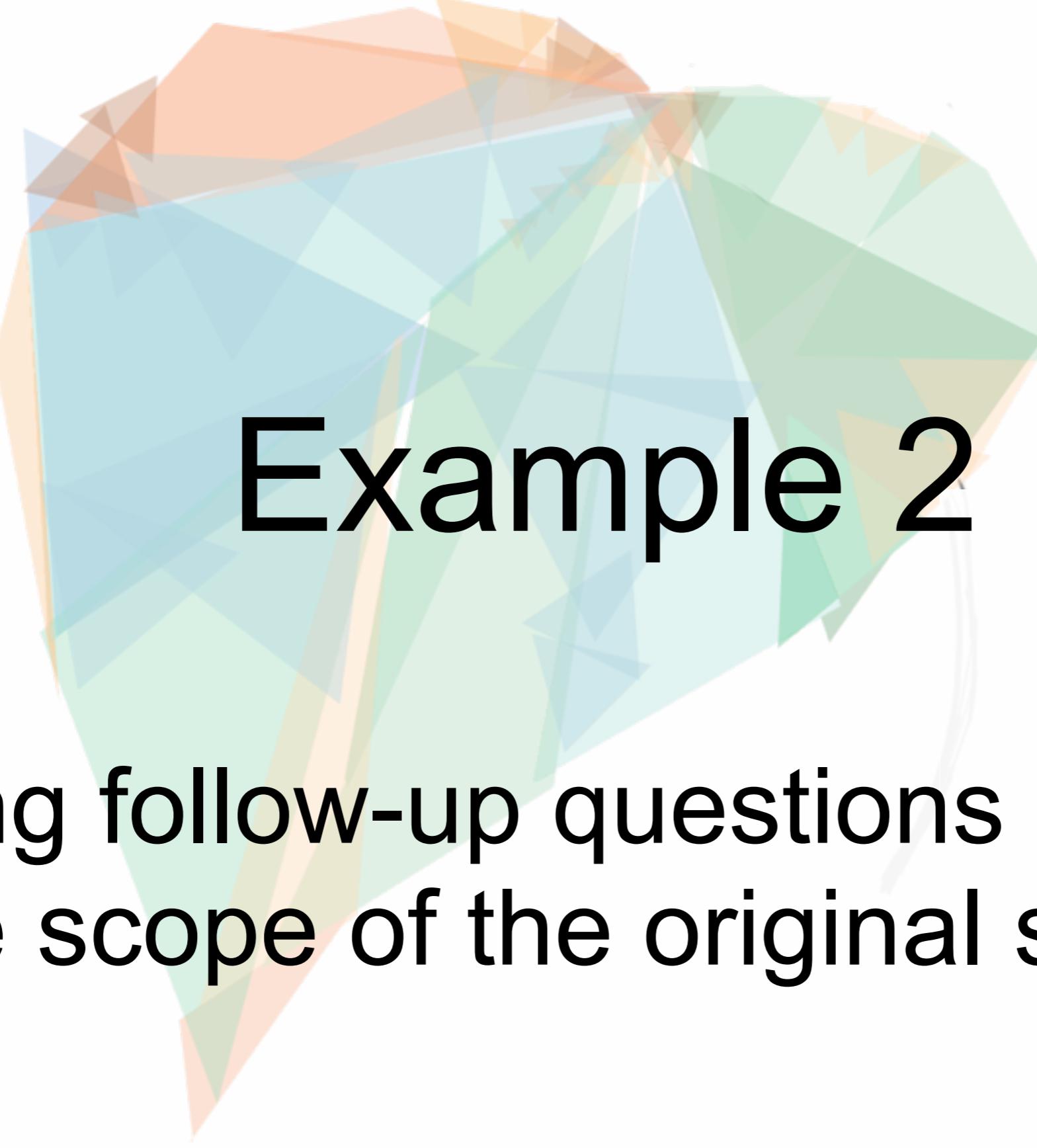
Example 1

Asking new questions never
imagined by the original
investigator

Mining Bornstein's video archive: Every culture A to Z



Karasik, Tamis-LeMonda, Adolph & Bornstein (2015) *J Cross Cult Psych*



Example 2

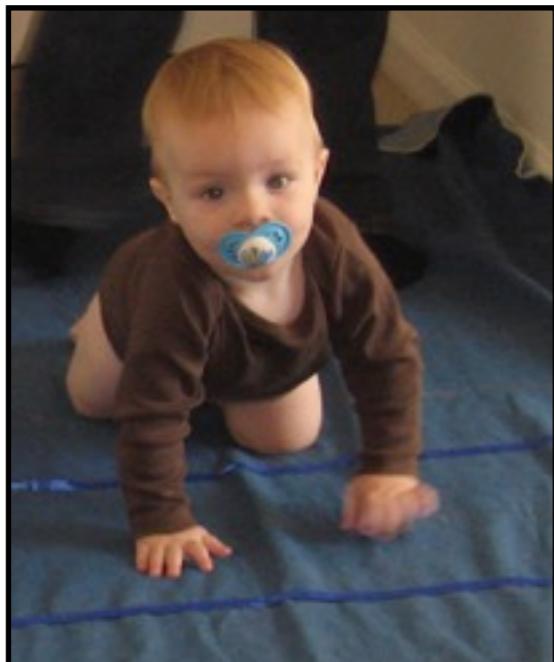
Asking follow-up questions outside
the scope of the original study

Original study

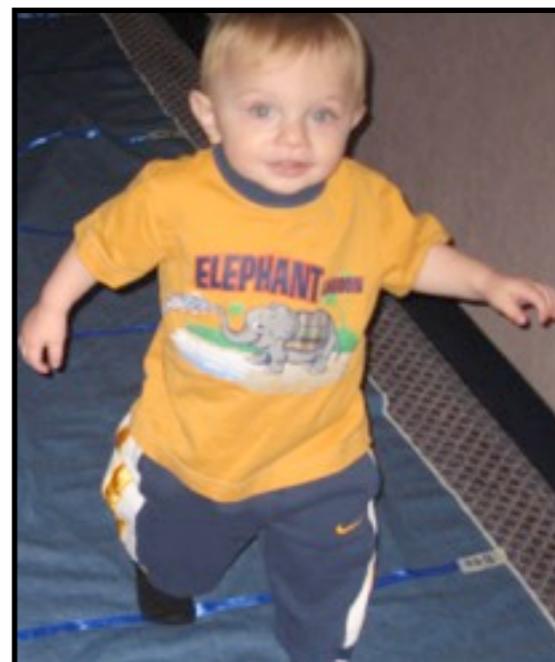
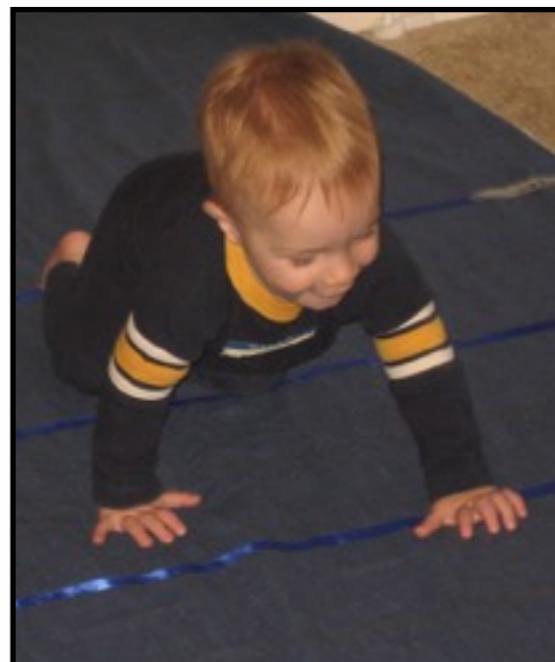
- ▶ Research question: Does transition from crawling to walking affect infants' interactions with mothers?

100 hours of video; 50 infants, 11 & 13 months, 1 hour home video

11-month session

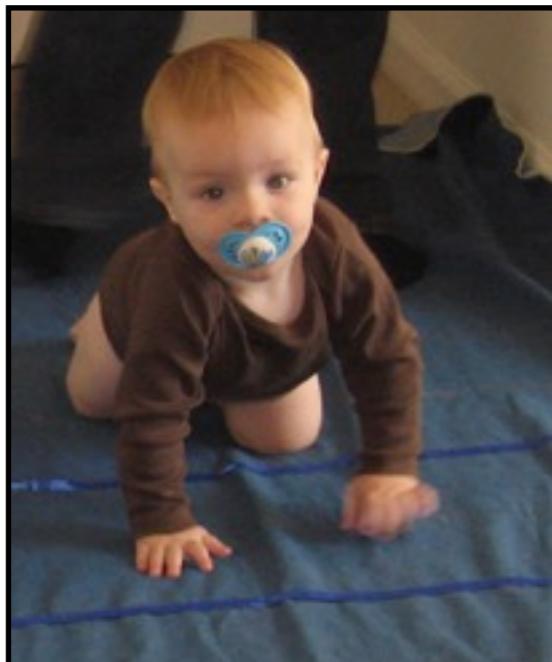


13-month session



100 hours of video; 50 infants, 11 & 13 months, 1 hour home video

11-month session

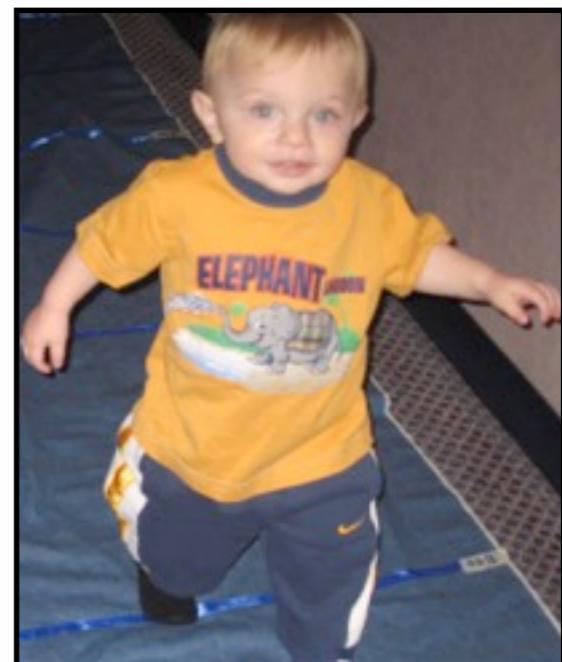
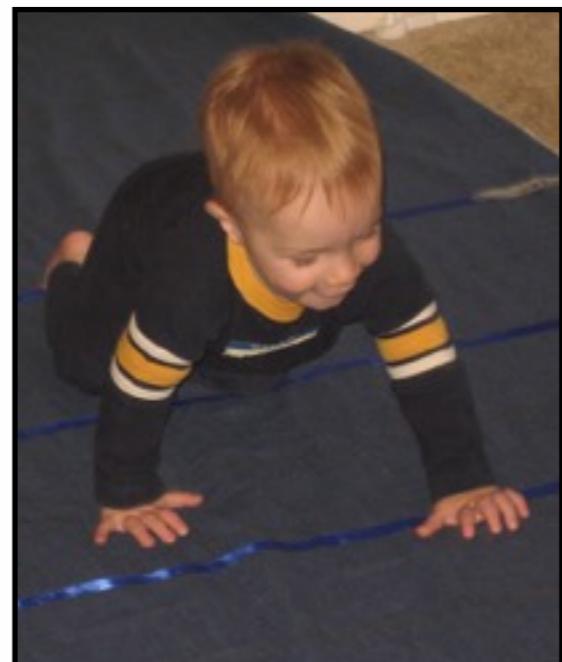


Crawler

to

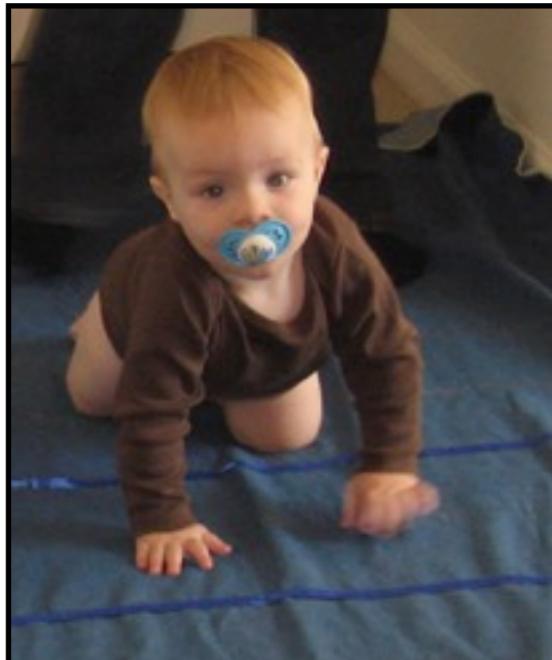
Crawler

13-month session



100 hours of video; 50 infants, 11 & 13 months, 1 hour home video

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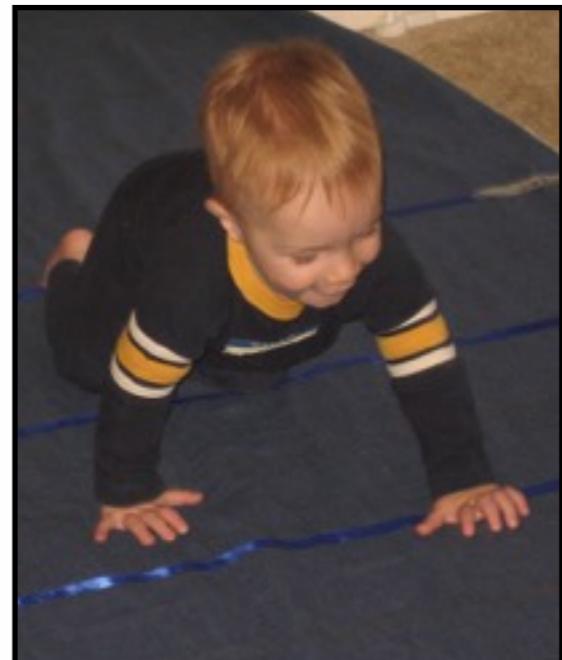


Crawler

to

Crawler

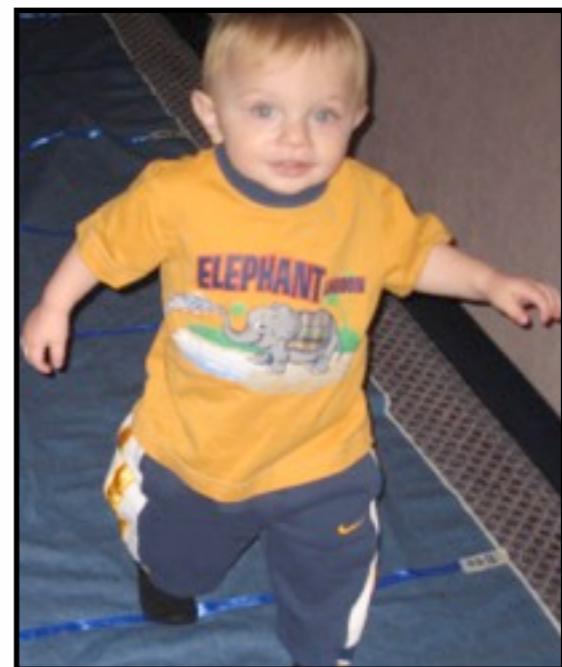
13-month session



Crawler

to

Walker



Bids to mom: Crawlers share objects from stationary position



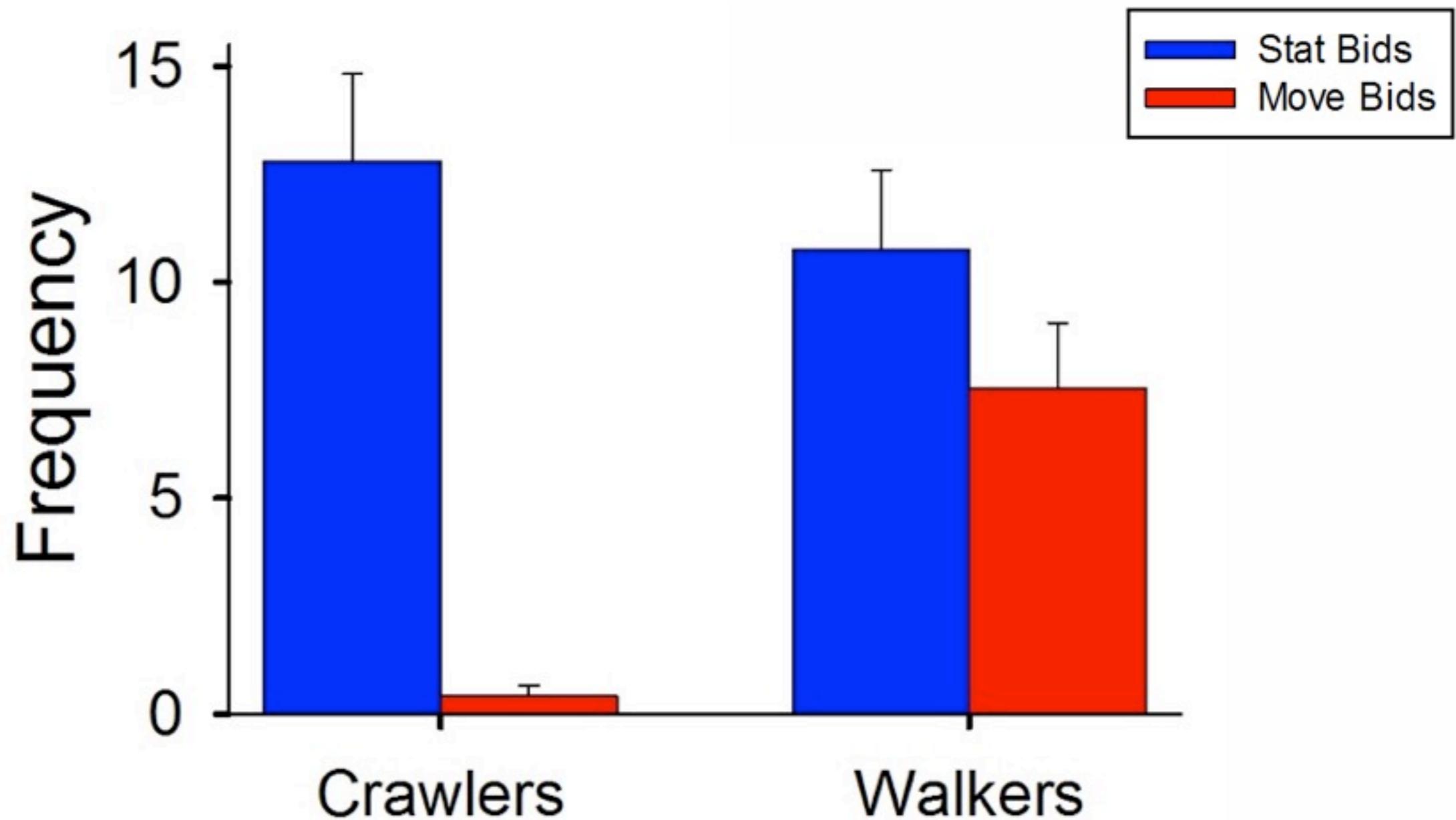
Karasik, Tamis-LeMonda, & Adolph (2011) *Child Dev*

Bids to mom: Walkers share objects by carrying them to mother



Karasik, Tamis-LeMonda, & Adolph (2011) *Child Dev*

Carrying objects to share with mom: Crawlers don't, walkers do



Karasik, Tamis-LeMonda, & Adolph (2011) *Child Dev*

Follow-up study (outside the scope of the original study)

- ▶ Research question: Do differences in how infants bid to mothers affect the mothers' response?

Maternal response to infants: Ignore



Karasik, Tamis-LeMonda, & Adolph (2014) *Dev Sci*

Maternal response to infants: Affirm



Karasik, Tamis-LeMonda, & Adolph (2014) *Dev Sci*

Maternal response to infants: Referential



Karasik, Tamis-LeMonda, & Adolph (2014) *Dev Sci*

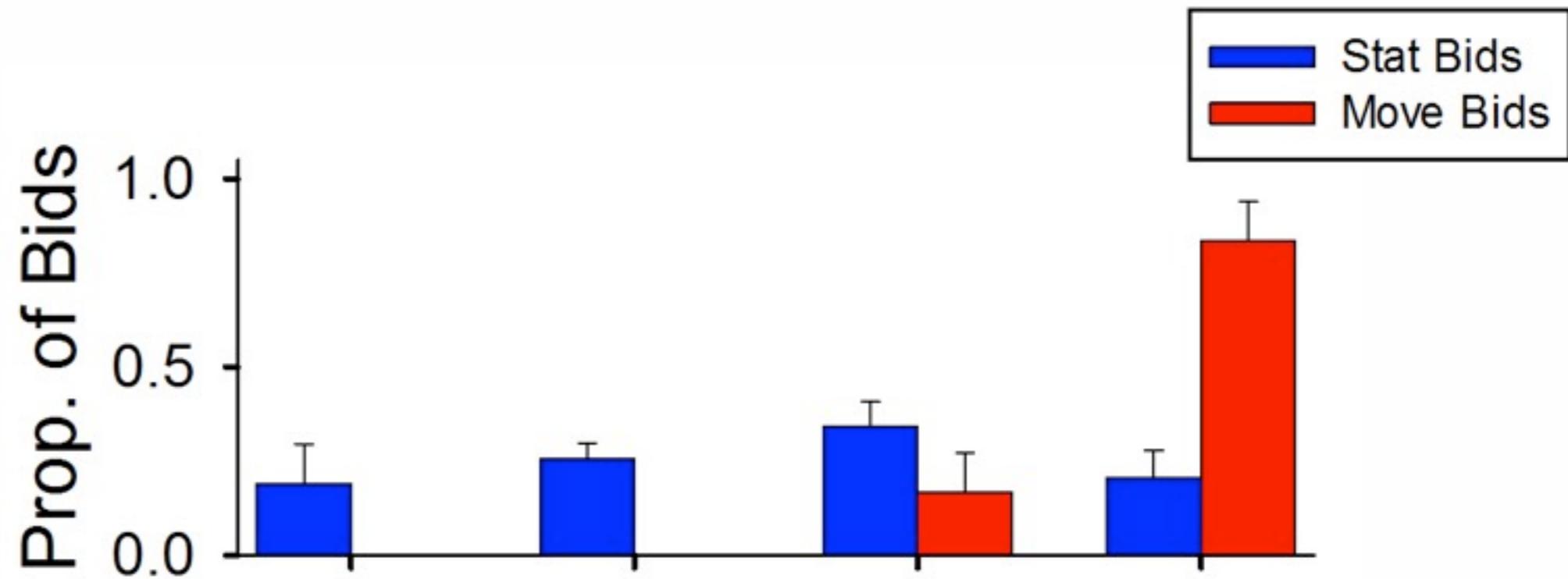
Maternal response to infants: Action directives



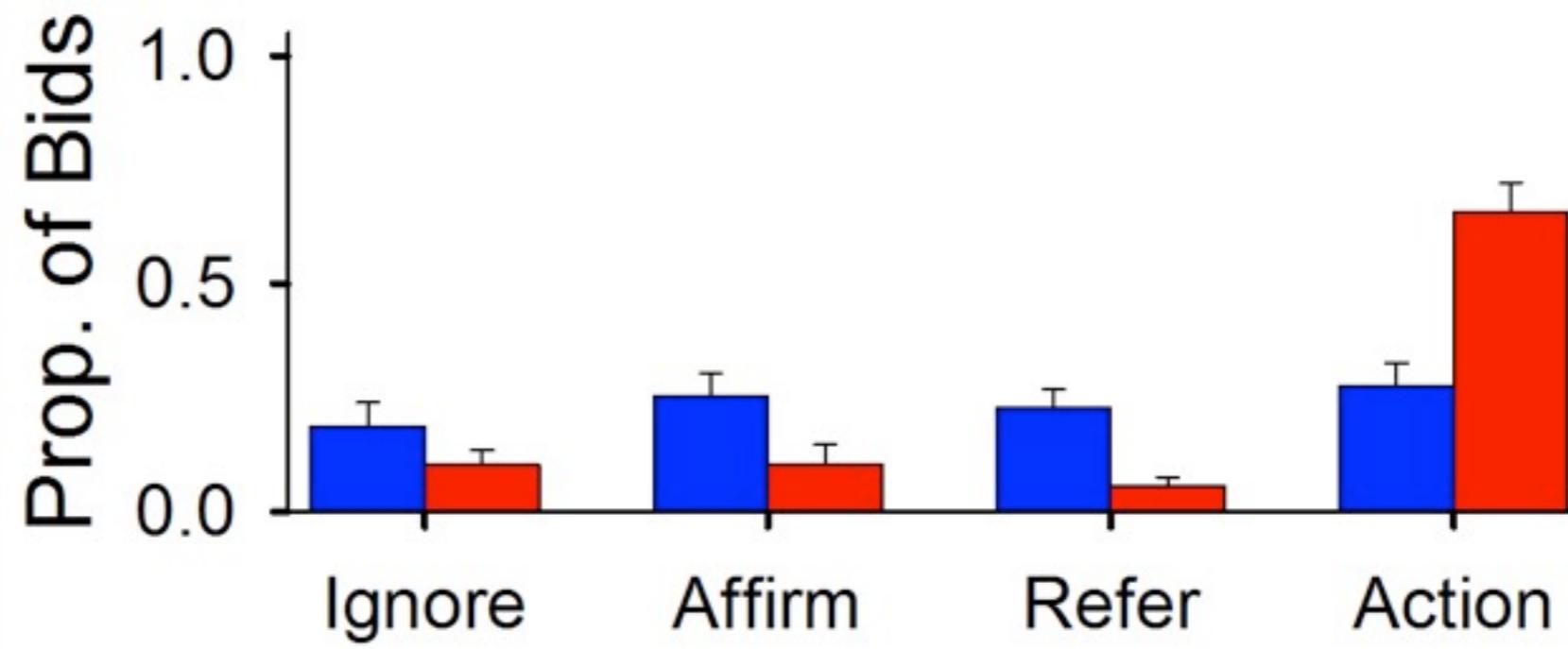
Karasik, Tamis-LeMonda, & Adolph (2014) *Dev Sci*

Maternal response to infants

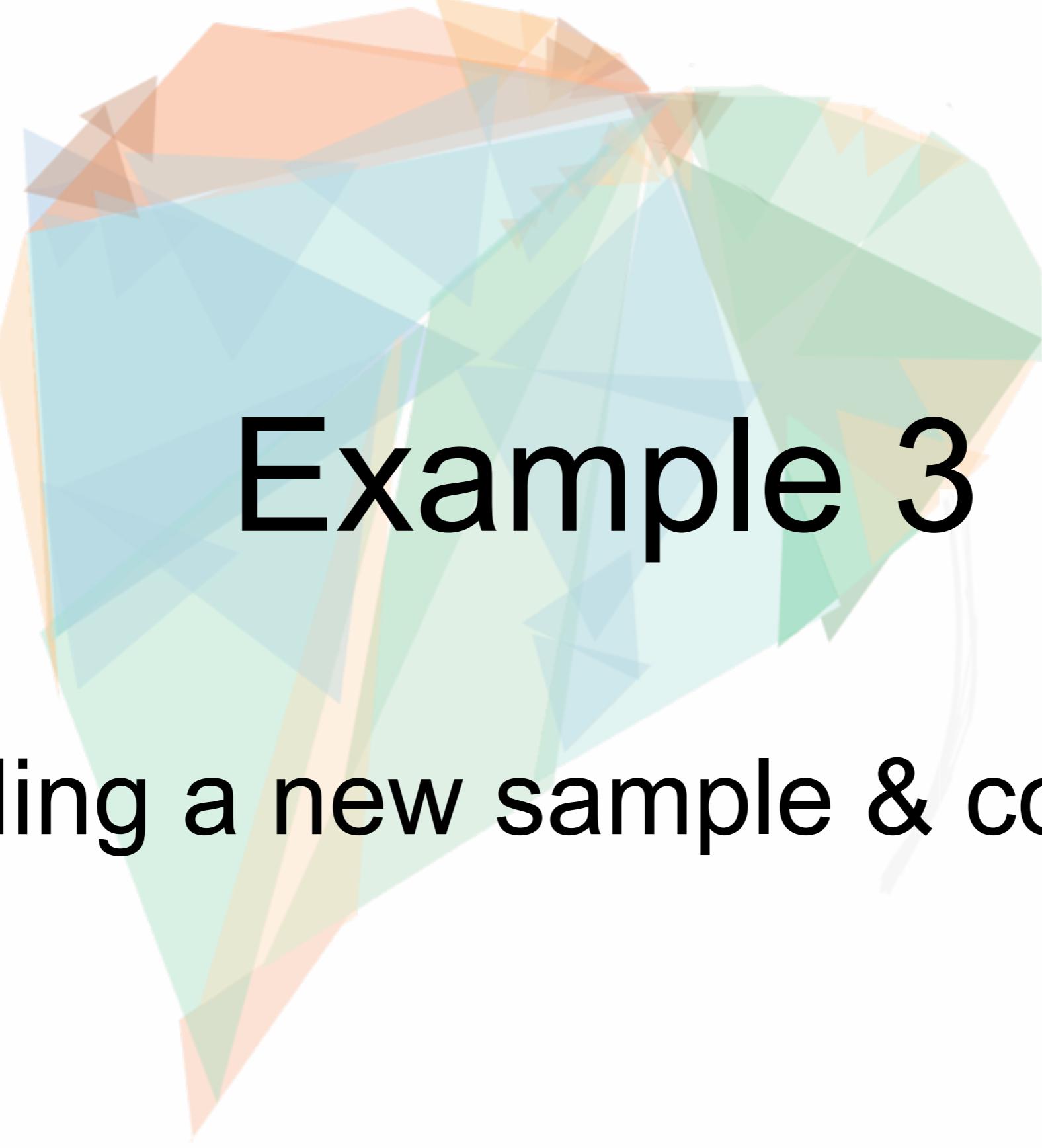
Crawlers
 $N = 5$



Walkers
 $N = 24$



Karasik, Tamis-LeMonda, & Adolph (2014) *Dev Sci*



Example 3

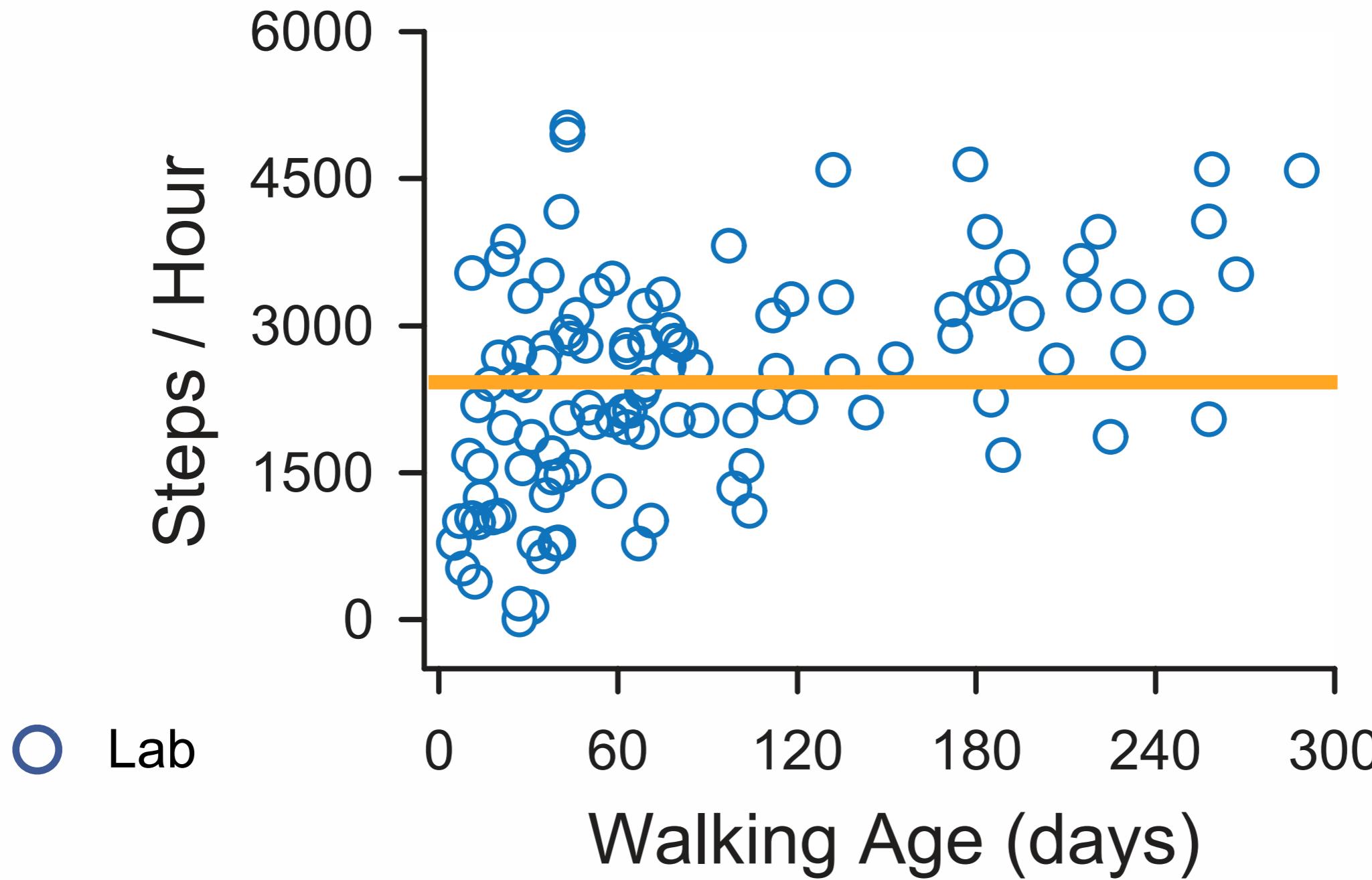
Adding a new sample & context

Original context: Free play in lab Quantity of natural locomotion?



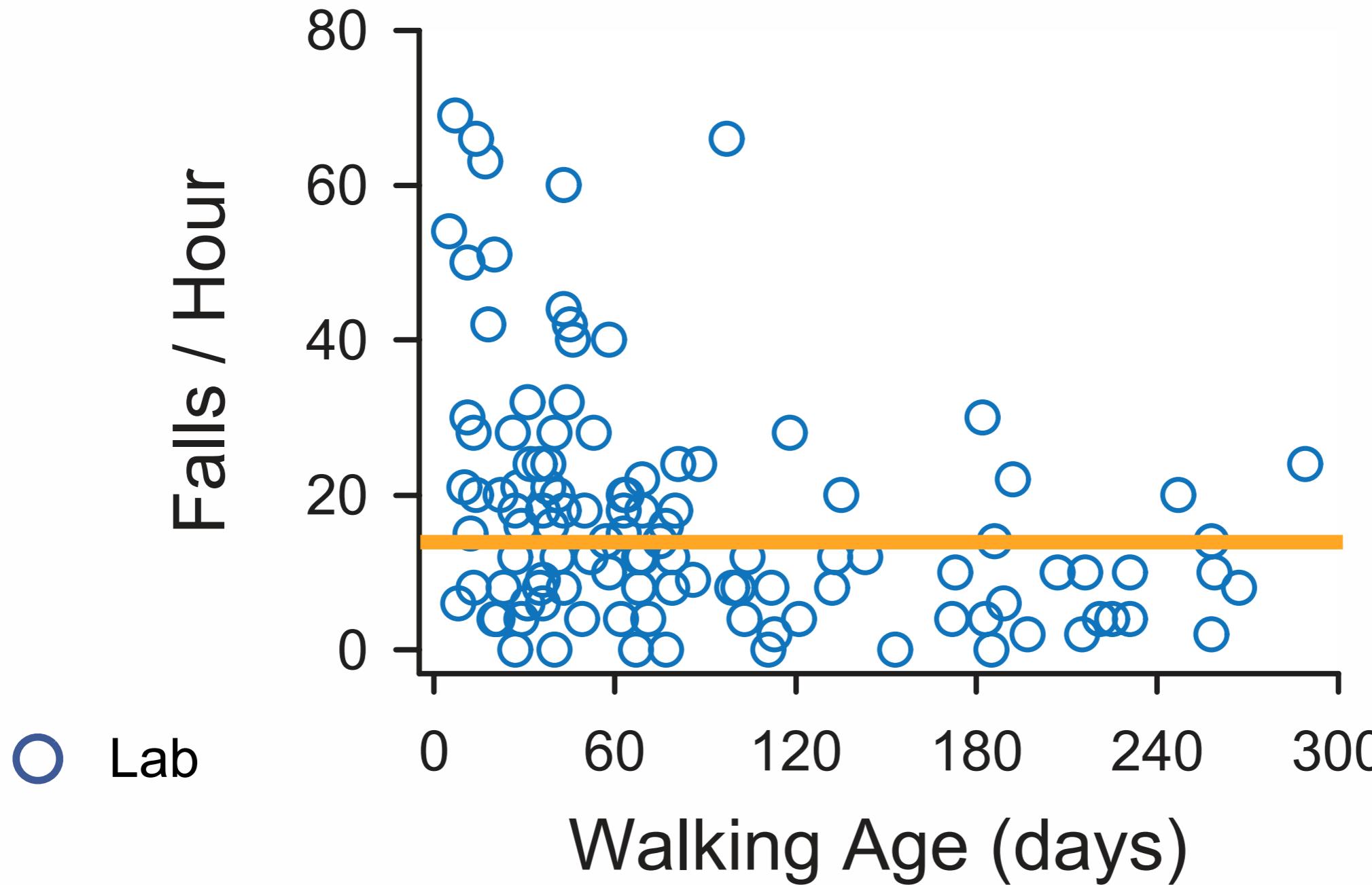
Adolph et al (2012) *Psych Sci*

Immense number of steps during free play in lab



Adolph et al (2012) *Psych Sci*

Immense number of falls during free play in lab

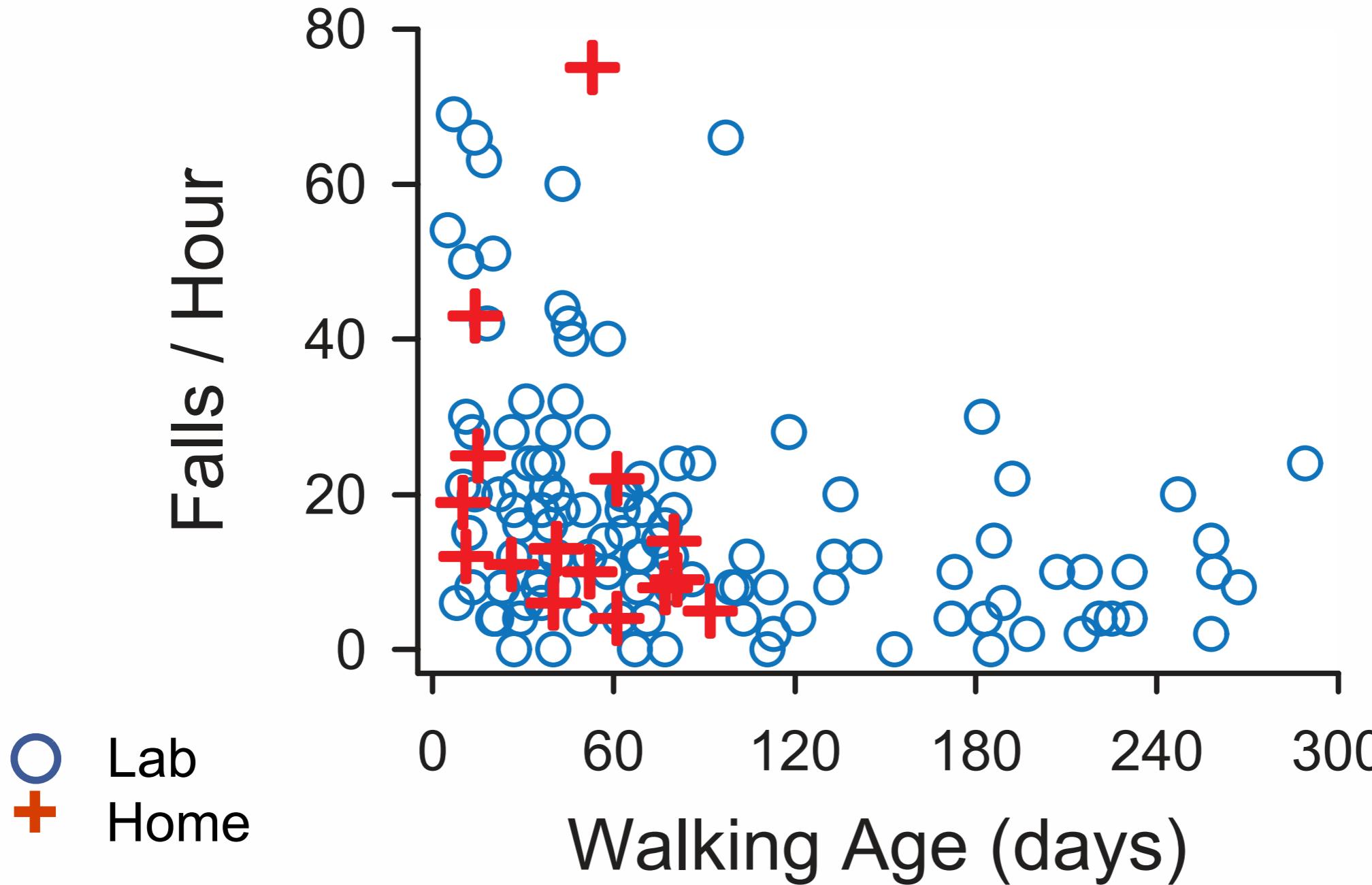


Adolph et al (2012) *Psych Sci*

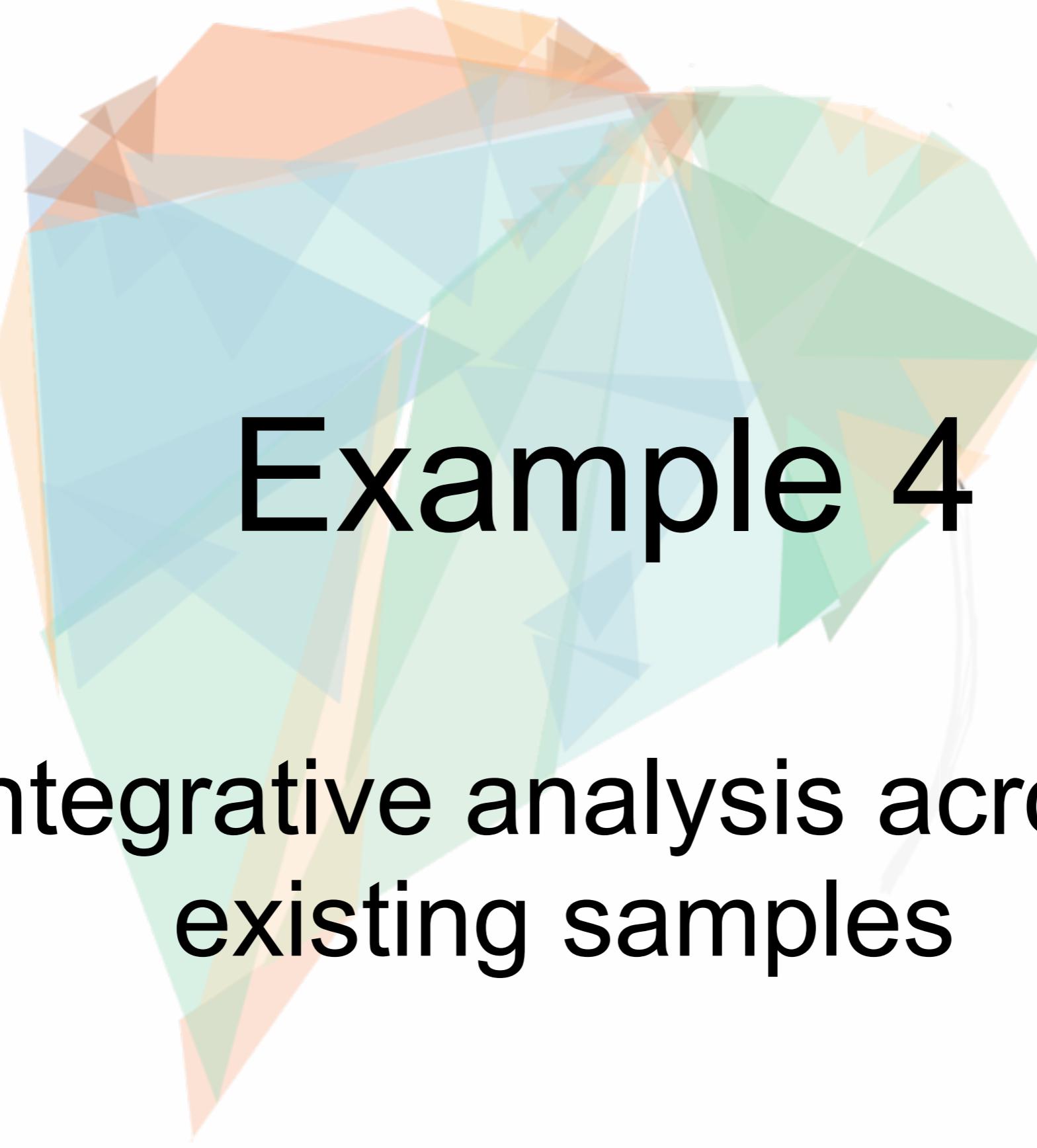
Does context matter? Do infants walk & fall more/less at home?

- ▶ Original context: Free play in novel lab environment
- ▶ Additional context: Free play in familiar environment of home
 - ◀ Added new sample by reusing data from existing dataset of home free play (which were originally collected to examine infant-mother social interaction)

Immense number of falls during free play in lab & at home



Adolph et al (2012) *Psych Sci*



Example 4

Integrative analysis across
existing samples

Integrative analysis to investigate serendipitous research discovery

- ▶ Original laboratory study: Limb coordination in crawling
- ▶ Research discovery: When crawling infants sit up, it changes the direction they are facing
- ▶ Was this a real finding or an artifact of the laboratory procedure??

Sitting up changes the direction that infants are facing



Soska, Robinson, & Adolph (2015) *Dev Sci*

How general is the phenomenon? Integrated 3 additional datasets of same-age crawling infants



Walkway
in lab



Free play
in lab



Free play
at home



Walkway
at home

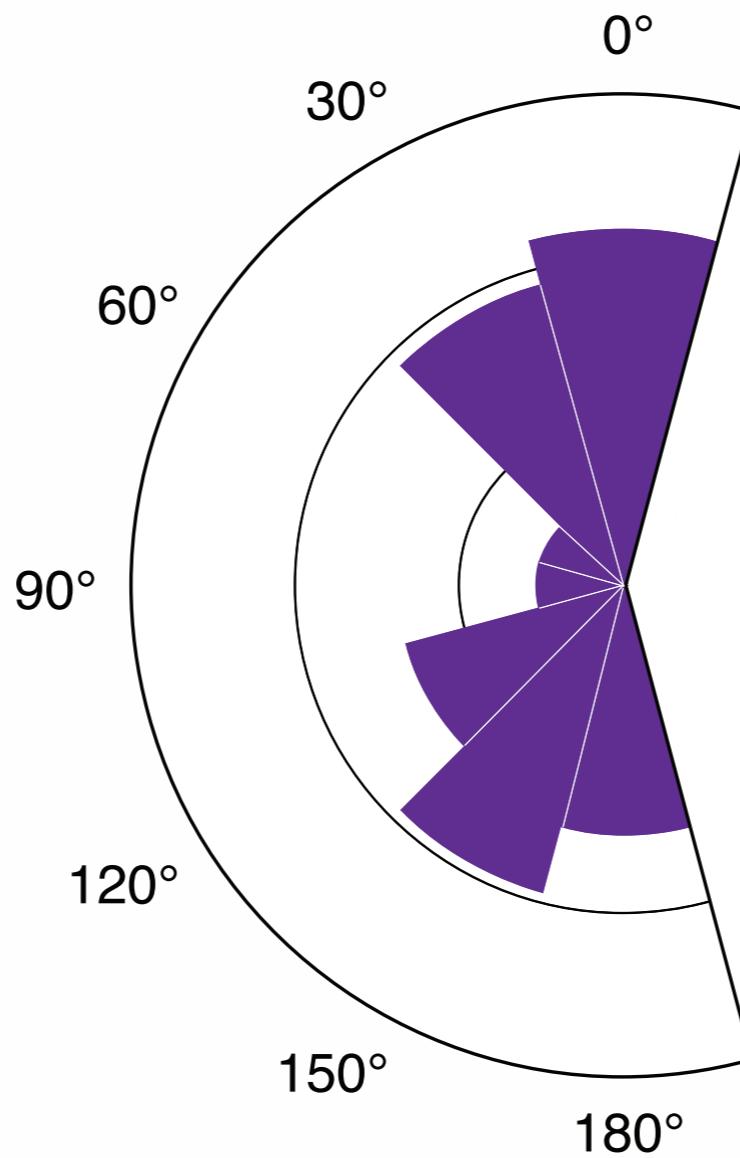
Soska, Robinson, & Adolph (2015) *Dev Sci*

Crawlers sit up & it changes their direction of heading in all 4 contexts



Soska, Robinson, & Adolph (2015) *Dev Sci*

Change in direction from crawl to crawl



Soska, Robinson, & Adolph (2015) *Dev Sci*



Video Sharing

Sharing is not collaboration

- ▶ “**Open** data sharing” means:
 - ◀ Never having to ask original PI for access or permission
 - ◀ Don’t need to include original PI as author on paper
 - ◀ Original PI does not control what you say or do with the data
- ▶ Do need to acknowledge original PI, dataset, papers

Video has special promises

- ▶ Captures richness & complexity of behavior in real time
- ▶ Widely used in developmental, education, learning sciences
- ▶ Cheap & easy to collect
- ▶ Self-documenting
- ▶ High potential for reuse

Video has special challenges

- ▶ Identifiable data need special policies
- ▶ Technical barriers to sharing
- ▶ Practical barriers to sharing
- ▶ Cultural barriers to sharing

Video has special challenges: Policies for identifiable data

- ▶ Consent & access
 - ◀ SOLVED ✓
- ▶ Documentation & resources in online Access Guide
- ▶ Presentation after lunch

Video has special challenges: Technical barriers to sharing

- ▶ Long-term preservation, backups, security
 - ◀ Solved ✓
- ▶ Continually working on search
 - ◀ Finding datasets
 - ◀ Searching within videos

Video has special challenges: Practical barriers to sharing

- ▶ Videos need to be organized to enable sharing & reuse
 - ◀ Really hard after the study is completed
- ▶ DataKeepr for active curation
 - ◀ No need to wait until study is finished to upload data
- ▶ Staff help for archival studies

DataKeepr: Upload as you go

- ▶ Don't wait to upload until study is done
 - ◀ After the fact curation is painful
 - ◀ We will help, but it will hurt a little
- ▶ Upload as you go with DataKeepr is easy
 - ◀ Upload videos & tag with basic metadata at end of each session
 - ◀ You've got to put it somewhere anyway
 - ◀ Data management & backup
- ▶ Databrary = your lab server

Video has special challenges: Cultural barriers to sharing

- ▶ Educate each other about the power of video reuse
- ▶ CHILDES
- ▶ Preconferences (CDS, ICIS, AERA, SRCD)
- ▶ Regional workshops

Changing community practices:
The 1st stage of data sharing

Denial

Changing community practices: The 2nd stage of data sharing

Denial

Anger

Changing community practices: The 3rd stage of data sharing

Denial

Anger

Bargaining

Changing community practices: The 4th stage of data sharing

Denial

Anger

Bargaining

Depression

Changing community practices: The 5th stage of data sharing

Denial

Anger

Bargaining

Depression

Acceptance

Changing community practices: The 5 stages of data sharing

Denial

Anger

Bargaining

Depression

Excitement

All behavior is good behavior

- ▶ Your videos will be valuable to other researchers
- ▶ Video reuse can lead to new insights into causes & consequences of learning & development