

BACKGROUND

The Play and Learning Across a Year (PLAY) project is meant to inform us of how children 12, 18, and 24 months old learn through natural PLAY.

Children navigate through their own worlds in a much more unique way than adults do. After infants develop more motor skills, their surroundings become even more of a place for growth, education and to develop skills that could potentially impact the way they approach situations in their childhood. Although studies have shown children develop their handedness between ages 2-4 [1], it is important to observe handedness and hand preference even earlier as it is a future indicator for language ability and health status [2].

Crawling type in 12 month old infants was investigated in this study to observe the mode as well as hand preference to initiate locomotion.

METHODS

One hour videos of natural play were viewed by an Undergraduate Research Assistant using Datavyu [3]. The onset and offset times of right handed and left handed crawling bouts were coded for 2 infants who were 12month old. The onset of crawling was indicated by the child's hand placement on the ground surface followed by knee contact with the ground that continued over a distance greater than 2 feet. Offset of locomotion was indicated when the child concluded his/her bout to pause, stand, or play for more than 3 seconds. Not only was the onset and offset of the child's crawling collected, but also the specific hand that the child initiated each crawl with.

R Studio [4] was used to code the acquired data which helped organize and visualize the gathered data.

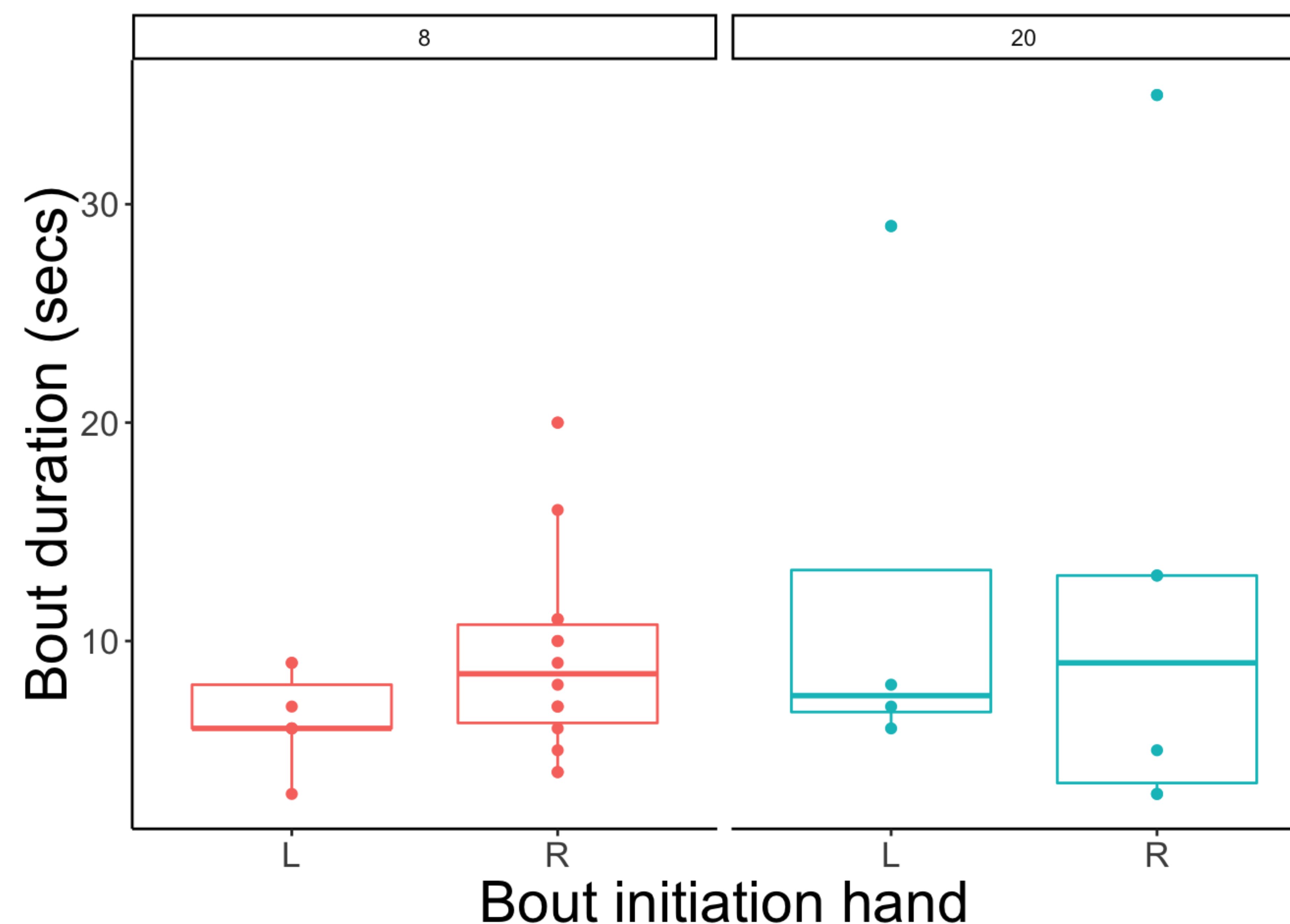
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FIGURE 1: RIGHT HAND INITIATED CRAWLING BOUT



FIGURE 2: HAND PREFERENCE



RESULTS AND DISCUSSION

It was expected that the infants would prefer to crawl with contralateral motion while crawling over unilateral movement of hands and knees to independently move forward a distance greater than 2 feet. The results confirmed our hypothesis in both participants.

By observing children's gait style of crawling, we take a close look at the unconscious decisions that children make in order to function in their lives. Although the participants used unilateral locomotion, it was used for a short period of time and not to move a distance greater than 2 feet.

Also, studying children's gait preferences can be the start to answering questions about children's ability to learn how to move about in their world. Looking into this movement could help us understand possible factors that could contribute to their preferences such as cultural differences, parental behaviors, as well as environmental factors in the home. Observing which hand or limb an infant begins their movement with gives thought to whether this movement is meaningful in a way that correlates to how they move when they begin walking, running or anything involved with handedness in activities utilizing basic motor skills.

DATA SHARING

Movies of the displays, metadata about the participants, and raw data files are available at: <https://nyu.databrary.org/volume/444>. This is a private repository. Full reports of our data analysis workflows are available at: <http://github.com/gilmore-lab/psi-chi-2019>

REFERENCES

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