

# Aaron Baker

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## POSITIONS

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### Lab Coordinator

*2020-Present*

Cooperation Lab, PI: Katherine McAuliffe  
Department of Psychology, Boston College

#### Responsibilities:

- Hiring, training, and managing of a team of 14 research assistants
- Coordinating with museums and other research sites for our lab and other labs (including cross-cultural research sites)
- Streamlining and maintaining participant databases and recruitment procedures
  - Algorithmically removing redundancies and clarifying eligibility
  - Modifying the RA recruitment procedures to increase efficiency
- Writing and submitting amendments to the IRB
- Organizing meetings and talks, coordinating with other labs and invited speakers
  - Building Virtue Workshop: two-day, hybrid event in Dover, MA
- Handling lab finances (reconciling statements, submitting expense reports, etc.)
- Backing up terabytes of lab files from remote servers to local hard drives using rsynch

## EDUCATION

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### University of California, Berkeley

*2020*

B.A. in Cognitive Science

High Distinction in General Scholarship

#### Relevant Coursework:

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|--------------------------------|---|
| • Brain, Mind, and Behavior    | • Quantitative Methods                              |
| • Social Psychology            | • Discrete Mathematics                              |
| • Biological Anthropology      | • Structure and Interpretation of Computer Programs |
| • Evolution of the Human Brain | • Data Structures                                   |
| • Linguistics Science          | • Artificial Intelligence                           |
| • Concept and Idea Formation   |   |

### Universidad de Chile

*2019*

Spanish Intensive Program; Santiago, Chile

## PUBLICATIONS

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Ahl, R., Hannan, K., Amir, D., **Baker, A.**, McAuliffe, K. (*in prep*) Zooming in on virtue: Replicating incentivized measures of children's virtuous behavior online.

Amir, D., **Baker, A.**, Jordan, M., McAuliffe, K. (*in prep*) Does advantageous inequity aversion signal cooperative intent?

**Baker, A.**, Amir, D., Ahl, R., McAuliffe, K. (*in prep, data collection ongoing*) Norm transmission and virtuous behavior: How do children respond to the content of norms and the age of their source?

Amir, D., Ahl, R., **Baker, A.**, McAuliffe, K. (*in prep, data collection ongoing*) The effect of norm model age on children's virtuous giving across five diverse societies.

## RESEARCH EXPERIENCE

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### Senior Research Assistant

2020-Present

Building Virtue Project

Supervisors: Dorsa Amir, Richard Ahl, Katherine McAuliffe

Boston College

- **Publications:**
  - Amir, D., Ahl, R., McAuliffe, K. (*in prep*) The development of virtuous behavior across five diverse societies.
  - Ahl, R., Hannan, K., Amir, D., Baker, A., McAuliffe, K. (*in prep*) Zooming in on virtue: Replicating incentivized measures of children's virtuous behavior online.
  - Baker, A., Amir, D., Ahl, R., McAuliffe, K. (*in prep, data collection ongoing*) Norm transmission and virtuous behavior: How do children respond to the content of norms and the age of their source?
  - Amir, D., Ahl, R., Baker, A., McAuliffe, K. (*in prep, data collection ongoing*) The effect of norm model age on children's virtuous giving across five diverse societies.
  - Amir, D., Baker, A., Jordan, M., McAuliffe, K. (*in prep, data collection ongoing*) Does advantageous inequity aversion signal cooperative intent?
  - Deutchman, P., Kraft-Todd, G., Young, L., & McAuliffe, K. (*in prep*). Updating injunctive and moral norm beliefs after receiving descriptive norm information.
- Designed and implemented an elaborate Qualtrics survey for online and in-person study administration for multiple studies
- Trained five research assistants to recruit, collect, and analyze data – four for online administration, one for in-person cross-cultural administration in Canada

- Designed a coding protocol for participants' self-reported parent occupations to classify participants based on level of familial market-integration
  - Drafted a manuscript supplement based on this coding protocol
- Performed extensive lit searches to support research projects
- Data analysis and visualization in R
- Leading project exploring norm transmission and virtuous decision-making:
  - Prepared script, stimuli, and data collection materials
  - Wrote and submitted the OSF preregistration
  - Created recruitment and testing materials
  - Facilitated the administration of N=90 child participants over Zoom
  - Prepared and delivered a talk outlining the project to colleagues in the field
- Executing a project that investigates advantageous inequity aversion as a signal of cooperative intent:
  - Helped design a novel economic game task
  - Built two complementary Qualtrics to allow participants to make decisions with other players
  - Preregistered on AsPredicted with an intended sample of N=800 for study A and N=200 for study B with contingencies for worker exclusion criteria
  - Launched the studies on CloudResearch and organized participant payouts based on the decisions made in the tasks
- Building a model for norm updating in a Bayesian framework:
  - Researched other models and recruited advice to design a computational model to fit the behavioral data already collected
  - Built a program in python and pymc3 to fit priors to participant data, update based on observations, and compare to participant responses

## Research Assistant

2019-2020

Cognitive Development and Learning Lab, PI: Alison Gopnik

Supervisor: Eliza Kosoy

Department of Psychology, UC Berkeley

- **Publication:**
  - Kosoy, E., Collins, J., Chan, D., Huang, S., Pathak, D., Agrawal, P., Canny, J., Gopnik, A., & Hamrick, J. (*in prep*) Exploring Exploration: Comparing children with reinforcement learning agents in unified environments.
- Recruited and consented participants on-site at children's museums
- Administered study protocol to participants age 4-6 in which children use an Arduino-based controller to navigate a maze in DeepMind Lab to be compared with RL agents
- Managed data and participant information on-site and in the lab
- Provided feedback on performance and implementation of the task – what children struggled with, what may be distracting, etc.

## Undergraduate Research Fellow

2018

Translational Imaging Center, Director: Scott Fraser

Supervisors: Thai Truong, Andrey Andreev

The Bridge Institute, University of Southern California

- Organization of 4D neuroimaging data in Fiji, a package of ImageJ
- Repurposed code written by lab members to process raw neural data into 11 regions of interest in MATLAB
- Smoothed and analyzed the lagged correlations between signals across raw neural data and regions of interest in numpy
- Visualized strong and weak correlations in a salient fashion – thresholded, overlaid on the raw images, uniform coloring across pipeline stages – using matplotlib
- Attended weekly, multidisciplinary lab meetings (with optical physicists, microbiologists, neuroscientists)
- Collaborated with other young scientists pursuing their respective projects
- Presented my preliminary findings at a research symposium

## TALKS

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- 2021 Utilizing graphical programming languages for research in developmental psychology.  
**Snap!shot**, in affiliation with the University of California, Berkeley
- 2021 Norm transmission and virtuous behavior: How do children respond to the content of norms and the age of their source?  
**Building Virtue Workshop**, Boston College
- 2018 Mapping neural activity across the sleeping zebrafish brain.  
**Bridge Undergraduate Science Symposium**, University of Southern California

## TEACHING

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- 2018-2020 **Instructor** (2020), **Undergraduate Student Instructor** (2018-2020)  
Introduction to Computer Science, University of California, Berkeley
- Restructured curriculum for the summer 2020 semester to accommodate the online format and emphasize peer teaching and collaboration remotely
  - Hired, trained, and managed a staff of teaching assistants, readers, and academic interns
  - Planned and delivered lectures, discussion sections, labs, and office hours
  - Designed, edited, and graded projects, exams, and homework assignments
  - Invited and hosted guest speakers

## FELLOWSHIPS, AWARDS, & ASSOCIATIONS

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<i>2020-present</i>	Member, Phi Beta Kappa Society
<i>2021</i>	Outstanding Graduate Student Instructor, The University of California Berkeley Graduate Research Division
<i>2018</i>	Trudi Berwin Undergraduate Scholar, Funding for Bridge Undergraduate Research Fellowship
<i>2016-2017</i>	Dean's List

## SKILLS

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- Programming:
  - Languages: Python, Java, JavaScript, HTML, CSS, R, MATLAB, Scheme
  - Statistical analysis, data processing, and visualization using numpy, matplotlib, R, MATLAB
  - Probabilistic programming with pymc3 and WebPPL (familiarity)
  - Web design in html, CSS, and JavaScript
  - Version control and program management (git)
- Experimentation:
  - Drafting preregistrations and appendices, running power analyses in G\*Power
  - Script and protocol drafting, piloting, and editing
  - Survey design in Qualtrics – conditional logic, randomization/counterbalancing, embedded data and variables, JavaScript, offline administration
  - Preparing and launching studies on CloudResearch and MTurk; paying out participant bonuses
  - Behavioral coding and data cleaning in Microsoft Excel and R
  - Recruiting families for participation on-site and remotely
  - Administering tasks to child and adult participants
- Communication:
  - Public speaking and curriculum building – lectures and research talks
  - Building relationships with site administrators and institutional offices
  - Writing and submitting IRB protocol amendments
- Administration:
  - Hiring, training, and managing team members
  - Building schedules with Google Calendar and Sheets/Microsoft Excel
  - Maintaining, growing, and restructuring confidential participant databases
  - Managing grants and lab finances—reconciling statements, submitting expense reports
  - Moving terabytes of lab files from remote servers to external hard drives
- Video editing in Final Cut Pro and iMovie
- Audiovisual facilitation of hybrid meeting formats
- Fluent (non-native) in Spanish