Dr. Anna-Elisabeth Baumann

+1 (564) 232-7020
anna.baumann@ucalgary.ca

Research Interests

Childhood cognitive and social development. Early childhood moral development, cooperative strategies, social preferences, and group membership. Cross-cultural differences in development. The development of learning strategies. How children learn to trust and associate with different types of agents, including technological agents. How children think about concepts, categories, and animacy.

Academic Positions

University of Calgary (UC)   Sept 2024-Present
    Postdoctoral Researcher
    Supervisor: Susan Graham, Ph.D.

Education

Concordia University, Montreal (CU)   Sept 2020-Sept 2023
    Ph.D. in Psychology
    Advisor: Diane Poulin-Dubois, Ph.D.
    Thesis: People do not always know best: Preschooler's learning from social robots versus humans

University of Chicago (U of C)   Sept 2019-June 2020
    M.A. in the Social Sciences, Psychology concentration
    Advisors: Hyesung Grace Hwang, Ph.D. & Amanda Woodward, Ph.D.
    Thesis: The effects of labeling on children's perceptions of moral and conventional actions

University of Washington, Seattle (UW)   Sept 2016-Dec 2018
    B.A. in Anthropology: Human Evolutionary Biology; Minor: Art History
    Cum Laude and Interdisciplinary Honours
    Advisor: Jessica Sommerville, Ph.D.
    Project: Infants' reactions to resource distribution outcomes as a function of ingroup/outgroup manipulations and language status

University of California, Riverside (UCR)   Sept 2015-June 2016
    No degree earned. Worked towards a B.S. in Anthropology before transferring to UW.

Professional Development

Visual Science Communication Badge   July-August 2025, Upcoming
    Science Communication Team, University of Calgary

Rocky Mountain Methodology Academy   July 2025, Upcoming
    Courses Taken: Mediation Analysis, Introduction to Structural Equation Modeling, Introduction to Multilevel Modeling
    Canadian Centre for Research Analysis and Methods (CCRAM)

Certificate in University Teaching and Learning   Nov 2024-Present
    Courses Taken: Learning Spaces and Digital Pedagogies; Equity, Diversity and Inclusion; Philosophy Statements and Teaching Dossiers
    Taylor Institute for Teaching and Learning, University of Calgary

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Science Communication Bootcamp	Oct 2024
Stories of Science	

"Big Team Science for Studying Small People"	April 2022
Cognitive Development Society Preconference	

Awards and Funding

Stories of Science Scholarship for Science Communication, amount: $100	Oct 2024
CU Faculty of Arts and Science Graduate Student Conference Travel Award, amount: $400	June 2023
Concordia Conference and Exposition Award, amount: $1000	May 2022, April 2023, May 2023
CRDH Scientific Citizenship Award, amount: $500	March 2023
CRDH Scientific Dissemination Award, amount: $1000	May 2022
CRDH Conference Best Ph.D. Poster Presentation	March 2022
Concordia International Tuition Award of Excellence (PhD), amount: $40,656	Sept 2020
CU Steven Goldberg Graduate Scholarship in Psychology, amount: $5,000	Sept 2020
CU FAS Graduate Doctoral Award, Amount: $20,000	Sept 2020
University Merit Scholarship at University of Chicago, amount: $20,000	Sept 2019
Interdisciplinary Honors Program at University of Washington, Seattle	Sept 2016-Dec 2018
UW Dean's and Chancellor's List Awards, every academic year	Sept 2016-Dec 2018
Honors Program at the University of California, Riverside	Sept 2015-June 2016
UCR Award for Academic Excellence	June 2016
UCR Achievement Scholarship, amount: $6,000	Sept 2015-June 2016
Highlander Excellence Scholarship, amount: $20,000	Sept 15-June 2016
UCR Honors Scholarship, amount: $900	Jan 2016-June 2016

Publications*

*Names of trainees are underlined

Goldman, E. **Baumann, A.,** Beaudoin, J. Poulin-Dubois, D. (2025). Testing children's attribution of mental states to robots and humans with the Theory of Mind Scale. *Scientific Reports 15,* 16357. https://doi.org/10.1038/s41598-025-96229-7

Baumann, A. Goldman, E. Cobos, M. & Poulin-Dubois, D. (2024). Do preschoolers trust a competent robot pointer? *Journal of Experimental Child Psychology*, 238, 105783. https://doi.org/10.1016/j.jecp.2023.105783

Baumann, A. Goldman, E. Meltzer, A. Poulin-Dubois, D. (2023). People do not always know best: Preschoolers' trust in social robots. *Journal of Cognition and Development.* https://doi.org/10.1080/15248372.2023.2178435

Goldman, E. **Baumann, A**. Poulin-Dubois, D. (2023). Preschoolers anthropomorphizing of robots: Do human-like properties matter? *Frontiers in Psychology*, Vol 13, https://doi.org/10.3389/fpsyg.2022.1102370

Goldman, E. **Baumann, A**. Poulin, Dubois, D. (2023). Of children and social robots [Commentary on "Social robots as depictions of social agents," by Herbert H. Clark & Kerstin Fischer]. *Behavioral and Brain Sciences,* Vol 46, E35, https://doi.org/10.1017/S0140525X22001583

Publications Under Review or In Preparation*

Dr. Anna-Elisabeth Baumann

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*Names of trainees are underlined

Baumann, A. Graham, S. (2025). "The Development of Inductive Reasoning During Infancy." *Under Revision, Infant Behaviour and Development.*

Baumann, A.* Goldman, E.* Poulin-Dubois, D. (2025). The effect of labels on children's naïve biology knowledge of animals, artifacts, and robots. *Under review, Developmental Child Welfare.*
*Denotes shared first authorship

Schuwerk, T. Kampis, D. Rakoczy, H. Frank, M…. **Baumann, A.*** (2025). Action anticipation based on an agent's epistemic state in toddlers and adults. *Child Development, In Principle Acceptance.* Preprint: https://doi.org/10.31234/osf.io/x4jbm
*Part of the ManyBabies2 Consortium

Goldman, E. **Baumann, A.** Erdfard, D. Fisher, O. Poulin-Dubois, D. "Do Preschoolers Trust a Robot with no Agency?" *In Prep.*

Baumann, A. Graham, S. (2025). "Early Language Skills Predict Later Internalizing and Externalizing Symptoms in a Large-Scale Longitudinal Sample." *In Prep.*

Baumann, A. Luong, E. Wing Lai, K. Switzer, J. Graham, S. (2025). Preschoolers' use of behavioral interactions to predict more or less essentialized social category memberships. *In prep.*

Goldman, E. **Baumann, A.** Cobos, M. Poulin-Dubois, D. (2025). Learning from the testimony of social robots: A conservative test of epistemic trust. *In prep.*

Poulin-Dubois, D. **Baumann, A**. Zlatanovska, M. Goldman, E. (2025). Do infants understand false belief? Another conceptual non-replication. *In prep.*

Conference Presentations*

*Names of trainees are underlined
Talks/Panels:

Goldman, E. **Baumann, A**. Poulin-Dubois, D. "Can children trust the informative gestures of a non-humanoid robot?" As a part of the "Learning across contexts: Children's abilities to learn from non-human and human informants" symposium at the Jean Piaget Society in Belgrade, Serbia, May 29-31, 2025.

Goldman, E. **Baumann, A.** Pare, L. Meister, H. Beaudoin, J. Poulin-Dubois, D. "Do robots have a theory of mind? Children's mental state attribution to humanoid and non-humanoid robots across theory of mind measures" As a part of the "Children's Social and Cognitive Interactions with Robots" symposium at the Society for Research in Child Development in Minneapolis, Minnesota, May 1-3, 2025.

Goldman, E. **Baumann, A.** Poulin-Dubois, D. "The role of social and epistemic characteristics in children's learning from robot informants" As a part of the "Children's and adults' abilities to learn from robots" symposium at the International Congress of Psychology in Prague, Czech Republic, July 21-26, 2024.

Poulin-Dubois, D. Goldman, E. **Baumann, A.** "Does a robot have a theory of mind? Children's

attribution of mental states to humanoid robots based on direct and indirect measures of Theory of Mind reasoning" As a part of the "Developing with Artificial Agents: Relational Markers And New Frontiers of Use" Symposium at the Meeting of the International Society for the Study of Behavioural Development in Lisbon, Portugal, June 16-20, 2024.

Goldman, E. **Baumann, A.** Poulin-Dubois, D. "Preschoolers' anthropomorphizing of robots: Do human-like properties matter?" As a part of the "Children's anthropomorphism of social robots" symposium at the Jean Piaget Society in Madrid, Spain, June 1-3, 2023.

Beaudoin, J. Goldman, E. **Baumann, A.** Poulin-Dubois, D. Conception des robots par les jeunes enfants: le rôle de la morphologie. Talk presented at the 90e Congrès de l'Acfas (Association francophone pour le savoir) in Montréal, Quebec, May 8-12, 2023.

Baumann, A. Goldman, E. Meltzer, A. Bray Le Métayer, A. Poulin-Dubois, D. "Preschoolers' learning from social robots: from social to epistemic trust." As a part of the "Children's selective trust across domains, agents, and cultures" symposium at the Society for Research in Child Development Biannual Meeting in Salt Lake City, Utah, March 23-25, 2023.

Baumann, A. Goldman, E. Meltzer, A. Bray Le Métayer, A. Poulin-Dubois, D. "Preschoolers' learning from social and less social robots." Presented at the Concordia University Center for Research in Human Development (CRDH) Conference in Montréal, Quebec, March 17, 2023.

Baumann, A. Sommerville, J. "Infants' reactions to resource distribution outcomes as a function of ingroup/outgroup manipulations and language status." As a part of the "Fair's fair?: Intentions and relationships impact infants' expectations about fairness and preferences for fair individual's" symposium at the virtual International Congress of Infant Studies (ICIS), July 7, 2020.

Baumann, A. Hwang, H. "The effects of labeling on children's perceptions of moral and conventional actions." As part of the panel "Social Learning: How children start to think about the world." Discussant: Hwang, H. At the U Chicago MAPSS Virtual Academic Conference in Chicago, Illinois, June 22, 2020.

Poster presentations:
Baumann, A. Switzer, J. Wing Lai, K. Luong, E. Graham, S. "Preschoolers' use of behavioral interactions to predict more or less essentialized social category memberships," Poster presented at the Society for Research in Child Development Conference in Minneapolis, Minnesota, May 1-3, 2025.

Luong, E. **Baumann, A.** Graham, S. "Preschool Children's Inferences of Social Allegiance Based on Novel Country Categories," Poster presented at the University of Calgary Psychology Undergraduate Student Research Conference in Calgary, Alberta, April 10, 2025.
- Poster also presented at the 2025 Owerko Center Conference at the University of Calgary in Calgary, Alberta, May 5, 2025.

Baumann, A. Goldman, E. Cobos, M-G. Poulin-Dubois, D. "Preschoolers' trust in non-verbal information provided by a robot," Poster presented at the Cognitive Development Society (CDS) Conference in Pasadena, California, March 21-23, 2024.

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Goldman, E. **Baumann, A.** Beaudoin, J. Poulin-Dubois, D. "Children's Mental State Attribution to Robots," Poster presented at the Cognitive Development Society (CDS) Conference in Pasadena, California, March 21-23, 2024.

Cobos, M-G. **Baumann, A**. Goldman, E. Poulin-Dubois, D. "Do preschoolers trust a competent robot pointer?" Poster presented at the Concordia University Undergraduate Student Research Showcase in Montréal, Quebec, October 3, 2023.

Goldman, E. **Baumann, A.** Beaudoin, J. Poulin-Dubois, D. "Young children's conception of robots: the role of morphology and goal-directedness." Poster presented at the Society for Research in Child Development Biannual Meeting in Salt Lake City, Utah, March 23-25, 2023.
- Poster also presented at the CU CRDH Conference in Montréal, Quebec, March 17, 2023

Baumann, A*. Goldman, E*. Lalonde, A. Zohar, G. Psaradellis, E. Poulin-Dubois, D. "To see or not to see: Conceptual replications of the VOE false belief paradigm." Poster presented at the Society for Research in Child Development Biannual Meeting in Madison, Wisconsin, March 23-25, 2023.
- Poster also presented at the CU CRDH Conference in Montréal, Quebec, March 17, 2023

Denotes shared first authorship

Baumann, A. Meltzer, A., Goldman, E., Poulin-Dubois, D. "Developmental Changes in Learning from Robots." Poster presented at the Cognitive Development Society (CDS) Conference in Madison, Wisconsin, April 2022.

Baumann, A. Meltzer, A., Goldman, E., Poulin-Dubois, D. "Do Children Trust Robots?" Poster presented at Concordia Universities' Centre for Research in Human Development (CRDH) Hybrid Conference in Montréal, Quebec, March 2022.
- Won Best Ph.D. Poster Presentation

Baumann, A. Poulin-Dubois, D. "Is Early Executive Functioning Stable?" Poster presented at:
1. Concordia Universities' Centre for Research in Human Development (CRDH) Virtual Conference, March 2021.
2. Association for Psychological Science (APS) Virtual Conference and Poster Showcase, May 26-27, 2021.

Baumann, A. Horton, R. Lucca, K. Enright, E. Sommerville, J. "You CAN sit with us: Do moral and non-moral norms translate across group boundaries?" Poster presented at:
1. Northwest Social Cognitive Development Conference in Friday Harbor, Washington, March 2019.
2. Undergraduate Research Symposium at the University of Washington in Seattle, Washington, May 2019.
3. Psychology Undergraduate Research Conference at the University of California (UCLA) in Los Angeles, California, May 2019.

Anderson, W.* Gu, P.* **Baumann, A**. Horton, R. Lucca, K. Sommerville, J. "Do infants understand punishment's function? Investigating the role of parenting styles." Poster presented at:
1. UW Early Childhood Cognition Lab Poster Session in Seattle, Washington, August 2018.

2. University of Washington Summer STEM Research Poster Session in Seattle, Washington, August 2018.

*Denotes shared first authorship

Invited Talks*

*Names of trainees are underlined

Baumann, A. "Preschoolers learning from robots across a variety of contexts." Job talk given at the UC Language and Cognitive Development Lab Meeting in Calgary, Alberta, June 10, 2024.

Baumann, A. "Preschoolers learning from social robots: from social to epistemic cues." Talk given at the University of Toronto Early Cognition Lab in Toronto, Ontario, July 27, 2023.

Baumann, A. Goldman, E. <u>Meltzer, A.</u> <u>Bray Le Métayer, A.</u> Poulin-Dubois, D. "People do not always know best: Preschooler's learning from social robots." CU Center for Research in Human Development (CRDH) Brownbag in Montréal, Quebec, March 10, 2023.

Teaching Experience

Guest Lecturer
Learning Theories, Yeshiva University, NYC, Professor: Elizabeth Goldman (Guest Lecture on "Selective Trust and Selective Learning," November 20, 2023).

Teaching Assistant
Infancy, Concordia University, Montreal, Professor: Diane Poulin-Dubois (TA, Winter 2023).

Childhood Development, Concordia University, Montreal, Professor: Kristen Dunfield (TA, Fall 2021).

Introduction to Social Psychology, Concordia University, Montreal, Professor: Shalani Bel (TA, Fall 2021).

Helped Prepare a Datavyu manual for *Infancy*, Concordia University, Montreal, Professor: Diane Poulin-Dubois (Winter 2021).

Stress, Health and Coping, Concordia University, Montreal, Professor: Sydney B. Miller (Grading TA, Fall 2020).

Fundamentals of Life Span Development, Concordia University, Professor: Anastassios Carayannis (TA, Fall 2020).

Apes and Human Evolution, University of Chicago, Professor: Russell H. Tuttle (TA, Spring 2020).

Advising Experience

Eric Luong   Sept 2024-April 2025
Honors Undergraduate Psychology Student at the University of Calgary
Honors Thesis: Preschool Children's Inferences of Social Allegiance Based on Novel Country Categories
Co-Advised with Susan Graham, Ph.D.

Maria-Gracia Minuche Cobos   Sept 2022-April 2023
Honors Undergraduate Psychology Student at Concordia University, Montreal

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Honors Thesis: Preschoolers trust in robots versus humans: The impact of speech
Co-Advised with Diane Poulin-Dubois, Ph.D.

Ariel Pinto   Dec 2022-April 2023
Science College Student
Specialization Project: ManyBabies2: A large-scale collaborative multi-lab investigation of adult's and toddler's false belief
Co-Advised with Diane Poulin-Dubois, Ph.D.

Alexandra Meltzer   Sept 2021-April 2022
Honors Undergraduate Psychology Student at Concordia University, Montreal
Honors Thesis: Preschool Children's Epistemic Trust in Social Robots
Co-Advised with Elizabeth Goldman, Ph.D. and Diane Poulin-Dubois, Ph.D.

Elaine Psaradellis   Oct 2020-June 2021
Honors Undergraduate Psychology Student at Concordia University, Montreal
Honors Thesis: Theory of Mind Development: Do infants have a mature understanding of false belief?
Co-Advised with Diane Poulin-Dubois, Ph.D.

Independently Supervised High School 2025 STEM Internship Students: Sharmitha Balamurugan, Sukrutha Jambur Sachin, Elina Yuan
Co-Supervised Summer Interns: Chelsea Cuffaro, Aymée Bray Le Métayer, Gal Zohar, Sophie Jensen, M Kealey
Co-Supervised Research Assistants: Emily Yan, Sandy Liu, Rachel Mackenzie
Other Advised Honors Students: Ariane Lalonde, Jenna Beaudoin, Hadley Perkins

Reviewing

Journal Reviewer
Child Development, Journal of Early Childhood Research, Cognitive Development, Computers in Human Behavior, Scientific Reports, Journal of Cognition and Development

Conference Abstract Reviewer
Canadian Psychological Association 2025 Annual National Convention, American Psychological Association 2024 Annual National Convention

Committees

CU Association for Graduate Students in Psychology (AGSP) VP Internal	Aug 2022-July 2023
CU AGSP Co-Vice President Student Affairs	Aug 2022-July 2023
CU Advisory Chair Search Committee	Jan-June 2022
Teaching and Research Assistants of Concordia Union (TRAC) Delegate	Jan 2022-Dec 2022
International Student Workers' Committee (TRAC Sub-Committee) Secretary	May 2022-Dec 2022
CU AGSP Executive Committee Member	Sept 2020-Aug 2022

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CU Graduate Instructor and Teaching Assistant Committee Chair   Jan 2021-July 2021

Media Exposure

Anna-Elisabeth Baumann interviewed by Hayley Juhl. (May 5, 2023). Kids would rather learn from a robot than an incompetent teacher. *Montreal Gazette.* Montreal.

Anna-Elisabeth Baumann and Diane Poulin-Dubois interviewed by Jean Francois Bouthillette. (April 30, 2023). Faire confiance au robot? Crédibilité des interlocuteurs: Entre ressemblance et competence. *Les Années Lumière, Radio-Canada.* Montreal. https://ici.radio-canada.ca/ohdio/premiere/emissions/les-annees-lumiere/segments/reportage/441778/robot-credibilite-psychologie-developpement-enfant?fbclid=IwAR3KpU0vJcbkCfidXReOeot9Qs-OXgEN5piSZKe4EjB67OVFUWkfTkQpsaE

Diane Poulin-Dubois interviewed by Matthieu Dugal. (April 5, 2023). Un robot peut-il être un meilleur enseignant qu'un être humain? *Moteur de recherche, Radio-Canada.* Montreal. https://ici.radio-canada.ca/ohdio/premiere/emissions/moteur-de-recherche/episodes/698784/rattrapage-du-mercredi-5-avril-2023/4

Elizabeth Goldman interviewed by Caroline Van Vlaardingen. (April 3, 2023). Learning from Robots: Preschoolers prefer robots over humans in study. *CTV News.* Montreal.

Anna-Elisabeth Baumann one-on-one with Chelsea Bird. (March 29, 2023). School-aged children would rather learn from smart robots than less smart humans. *Chelsea on CHED*, *CHED 630 AM*. Edmonton.

Anna-Elisabeth Baumann, Elizabeth J. Goldman, and Diane Poulin-Dubois interviewed by Patrick Lejtenyi. (March 28, 2023). Preschoolers prefer to learn from a competent robot than an incompetent human, Concordia study shows. *Concordia News.* Montreal. https://www.concordia.ca/news/stories/2023/03/28/preschoolers-prefer-to-learn-from-a-competent-robot-than-an-incompetent-human-concordia-study-shows.html *
Article republished by multiple print news outlets:
https://frontiers.altmetric.com/details/142214160/news

Bodas, A. Contributors: **Baumann, A**. Sedlacek, A. "What you should know about OCD." *Rise: Step Up for Mental Health*. 2018, Aug 28.

Public Outreach

Visitor Engagement Volunteer at the Calgary Zoo	2025
Calgary Youth Science Fair Judge	2025
Concordia Universities' Science College Winter Recruitment Event	2022, 2023
Concordia University Open House	Oct 2022

Skills

Languages: English (Native), German (Native), French (Intermediate)

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Data Analysis: SPSS, SPSS AMOS, JASP, Jamovi, R, Datavyu, Microsoft Suite, Python (rudimentary)

Data Collection: Qualtrics, Google Forms, Tobii and SMI Eye-tracking Technology, Webgazer, Habit, jHab

Scheduling: Schedulista, SimplyBookMe

Conferencing: Zoom, Microsoft Teams

Editing: iMovie, GarageBand, Audacity, Reaper

Robots: Can operate and code NAO, Cozmo, and Dash robots

Infant and Child Testing: Trained in manual and automatic eye-gaze coding, testing in-person, online, in a museum or through autonomous surveys

Social Media: X, Tumblr, Facebook, YouTube, TikTok, Instagram, LinkedIn

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References

Susan Graham, Ph.D.
Professor of Psychology
ChILD Research Group
University of Calgary
Email: grahams@ucalgary.ca
Relationship: Postdoctoral Supervisor

Diane Poulin-Dubois, Ph.D.
Professor of Psychology
Centre for Research in Human Development
Concordia University
Email: Diane.PoulinDubois@concordia.ca
Relationship: Ph.D. Graduate Advisor